UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria Virginia 22313-1450

Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/067,917	08/26/2014	8815382		8019

7590

08/06/2014

WILLIAM L. ROBINSON, JR. 5914 GREENSPRING AVENUE BALTIMORE, MD 21209

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment is 621 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

William L. Robinson JR., Baltimore, MD;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit <u>SelectUSA.gov</u>.



United States Patent and Trademark Office

INITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Sox 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NUMBER

FILING OR 371(C) DATE

FIRST NAMED APPLICANT

ATTY. DOCKET NO./TITLE

13/067,917

BALTIMORE, MD 21209

WILLIAM L. ROBINSON, JR. 5914 GREENSPRING AVENUE 07/07/2011

William L. Robinson JR.

CONFIRMATION NO. 8019 PUBLICATION NOTICE



Title: Method and use of organic and mineral admixtures for EMI and radioactive isotope shielding of building materials such as glass fiber wall coverings, gypsum wallboard and electrically conductive or resistive, high performance, high strength concrete

Publication No.US-2014-0205745-A1

Publication Date: 07/24/2014

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seg. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Best AvailableTOppreE(S) TRANSMITTAL

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Advance Order - # of Copies_____

5. Change in Entity Status (from status indicated above) Applicant certifying micro entity status. See 37 CFR 1.29

Applicant asserting small entity status. See 37 CFR 1.27

Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

or <u>Fax</u> (571)-273-2885

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Please check the appropriate assignee category of categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government 4a. The following fec(s) are submitted: Payment of Fee(s): (Please first reapply any previously naid issue fee shown above) Issue Fee A check is enclosed. Publication Fee (No small entity discount permitted) Payment by credit card. Form PTO-2038 is attached.

> NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

to be a notification of loss of entitlement to micro entity status.

The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken

Applicant changing to regular undiscounted fee status. NOTE: This form must be sin Con 37 CED 1 A for cin nature requirements and cortifications

June 29, 2014 Authorized Signature

nc-07/63/2014 ZJUHAR2 00000005 13067917 Tyned or printed r. William L. Røb/inson,

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Page 2 of 3

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450

NOTICE OF ALLOWANCE AND FEE(S) DUE

06/26/2014

WILLIAM L. ROBINSON, JR. 5914 GREENSPRING AVENUE BALTIMORE, MD 21209

EXAMINER TSCHEN, FRANCISCO W ART UNIT PAPER NUMBER

1712

DATE MAILED: 06/26/2014

APPLICATION NO. FIL	LING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.

8019 13/067,917 07/07/2011 William L. Robinson JR.

TITLE OF INVENTION: Method and use of organic and mineral admixtures for EMI and radioactive isotope shielding of building materials such as glass fiber wall coverings, gypsum wallboard and electrically conductive or resistive, high performance, high strength concrete

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	09/26/2014

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. <u>PROSECUTION ON THE MERITS IS CLOSED</u>. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

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If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE

Commissioner for Patents P.O. Box 1450

Alexandria, Virginia 22313-1450

(571)-273-2885 or <u>Fax</u>

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying

Authorized Signature

Typed or printed name

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)			pap hav	ers. Each additional pe its own certificate o	oaper, such as an assignme f mailing or transmission.	ent or formal drawing, mus
WILLIAM L. ROBINSON, JR. 5914 GREENSPRING AVENUE BALTIMORE, MD 21209			I he Stat add tran	reby certify that this es Postal Service wit ressed to the Mail S	Ficate of Mailing or Trans Fee(s) Transmittal is bein h sufficient postage for fin Stop ISSUE FEE address O (571) 273-2885, on the d	g deposited with the United est class mail in an envelope above, or being facsimile
DALTIMORE,	WID 21209					(Depositor's name)
						(Signature)
						(Date)
APPLICATION NO.	FILING DATE		FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/067,917	07/07/2011		William L. Robinson JR.			8019
			tures for EMI and radioac stive, high performance, hi		g of building materials sud	th as glass
APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE I	FEE TOTAL FEE(S) DUE	E DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	09/26/2014
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TSCHEN, FR	ANCISCO W	1712	428-294700	•		
CFR 1.363). Change of corresp Address form PTO/S. "Fee Address" ind	ence address or indicatio condence address (or Cha B/122) attached. lication (or "Fee Address')2 or more recent) attach	nge of Correspondence	2. For printing on the p (1) The names of up to or agents OR, alternati (2) The name of a sing registered attorney or 2 registered patent atto- listed, no name will be	o 3 registered patent avely, le firm (having as a magent) and the names writeys or agents. If no	nember a 2	
PLEASE NOTE: Un	less an assignee is ident h in 37 CFR 3.11. Comp	ified below no assignee	THE PATENT (print or ty) data will appear on the p IT a substitute for filing an (B) RESIDENCE: (CITY	atent. If an assignee assignment.		document has been filed fo
Please check the appropri	riate assignee category or	categories (will not be pa	rinted on the patent):	Individual 🗖 Corp	poration or other private gr	oup entity 🚨 Governmen
4a. The following fee(s) Issue Fee Publication Fee (N Advance Order - #	No small entity discount p		b. Payment of Fee(s): (Plea	rd. Form PTO-2038 is	s attached.	,
5. Change in Entity Sta Applicant certifying	tus (from status indicateding micro entity status. Se	,	fee payment in the micro	entity amount will no	ot be accepted at the risk of	O/SB/15A and 15B), issue f application abandonment.
Applicant assertin	g small entity status. See	37 CFR 1.27	NOTE: If the application to be a notification of los	was previously unde s of entitlement to mi	r micro entity status, check cro entity status.	cing this box will be taken
☐ Applicant changing to regular undiscounted fee status.					•	itlement to small or micro

Page 2 of 3

entity status, as applicable

Date

Registration No. _

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/067,917	13/067,917 07/07/2011 William L. Robinson JR.			8019
75	90 06/26/2014	EXAMINER		
WILLIAM L. RO	BINSON, JR.	TSCHEN, FR	ANCISCO W	
5914 GREENSPRI BALTIMORE, MI		ART UNIT	PAPER NUMBER	
,			1712	

DATE MAILED: 06/26/2014

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- 1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
- 2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- 3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
- 4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
- 5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
- 6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
- 7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
- 9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

	Application No.	Applicant(s	;) , WILLIAM L.
Nation of Allowability	13/067,917 Examiner	Art Unit	AIA (First Inventor to
Notice of Allowability	FRANCISCO TSCHEN	1712	File) Status
			No
The MAILING DATE of this communication appear All claims being allowable, PROSECUTION ON THE MERITS IS (herewith (or previously mailed), a Notice of Allowance (PTOL-85) of NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIC of the Office or upon petition by the applicant. See 37 CFR 1.313	OR REMAINS) CLOSED in this app or other appropriate communication GHTS. This application is subject to	lication. If no will be mailed	t included in due course. THIS
 This communication is responsive to 6/6/2014. A declaration(s)/affidavit(s) under 37 CFR 1.130(b) was/v 	were filed on		
2. An election was made by the applicant in response to a restr requirement and election have been incorporated into this act		e interview or	n; the restriction
3. The allowed claim(s) is/are <u>20-22</u> . As a result of the allowed Highway program at a participating intellectual property office http://www.uspto.gov/patents/init_events/pph/index.jsp or ser	e for the corresponding application.	For more info	
4. Acknowledgment is made of a claim for foreign priority under Certified copies:	35 U.S.C. § 119(a)-(d) or (f).		
a) All b) Some *c) None of the: 1. Certified copies of the priority documents have 2. Certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have International Bureau (PCT Rule 17.2(a)). * Certified copies not received:	been received in Application No		application from the
Applicant has THREE MONTHS FROM THE "MAILING DATE" on noted below. Failure to timely comply will result in ABANDONMETHIS THREE-MONTH PERIOD IS NOT EXTENDABLE.		omplying with	the requirements
5. \square CORRECTED DRAWINGS (as "replacement sheets") must	be submitted.		
including changes required by the attached Examiner's Paper No./Mail Date	Amendment / Comment or in the Of	fice action of	
Identifying indicia such as the application number (see 37 CFR 1.8 each sheet. Replacement sheet(s) should be labeled as such in th			(not the back) of
6. DEPOSIT OF and/or INFORMATION about the deposit of BI attached Examiner's comment regarding REQUIREMENT FOR			the
Attachment(s) 1. ☐ Notice of References Cited (PTO-892)	5. ⊠ Examiner's Amendn	nent/Commer	t
2. Information Disclosure Statements (PTO/SB/08),	6. 🛛 Examiner's Stateme	ent of Reasons	s for Allowance
Paper No./Mail Date 3.	7.		
/FRANCISCO TSCHEN/ Examiner, Art Unit 1712			

Application/Control Number: 13/067,917 Page 2

Art Unit: 1712

0. The present application is being examined under the pre-AIA first to invent provisions.

Specification

1. The substitute specification filed on 5/14/2014 is being entered. Although the applicant has submitted a marked up copy (as required by 37 CFR 1.121); the marked up copy is marking changes to a previously submitted specification which was not entered (see Specifications submitted on 8/12/2011 and 9/15/2011). However, it is clear that all the issues have been resolved in the latest clean-copy submission including spacing of the text. In addition the new clean-copy specification does not introduce new matter.

EXAMINER'S AMENDMENT

- 2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
- 3. Authorization for this examiner's amendment was given in a telephone interview with William Robinson on 06/23/2014.

The application has been amended as follows:

a. On Claim 20 on line 1 the quote symbol (") between "(Previously Presented)" and "A method" has been removed.

Application/Control Number: 13/067,917 Page 3

Art Unit: 1712

b. On Claim 20 last line, the quote symbol (") after "(20%vol)." has been removed.

- c. On Claim 20 on line 15 the text "Methyl Gluceth-20" has been removed and the following text inserted in its place --ethoxylated methyl glucoside--.
- d. On Claim 21 on line 1 the quote symbol (") between "(Currently Amended)" and "The method" has been removed.
- e. On Claim 21 last line, the quote symbol (") after "of these." has been removed.
- f. On Claim 22 on line 1 the quote symbol (") between "(Previously Presented)" and "The method" has been removed.
- g. On Claim 22 last line, the quote symbol (") after "in the paper." has been removed.

Allowable Subject Matter

- 4. Claims 20-22 are allowed.
- 5. The following is an examiner's statement of reasons for allowance:

The claims are deemed allowable because the closest prior art that teaches utilizing a composition containing zeolites and a binder is Yoshida et al (US PGPub 2007/0298235 A1, hereinafter US'235). US'235 teaches obtaining a non-woven fabric for a gypsum board [0016] which comprises a binder [0018] the fabric comprises an

adsorbing agent which is selected from the group that contains zeolites [0021]. The zeolite and binder are applied via a coating solution [0046].

However there is no indication that the fabric (paper) is treated with an additional composition that contains hydroxypropyl cellulose (HPC) and ethoxylated methyl glucoside (EMG). The examiner notes that the ethoxylated methyl glucoside is commonly utilized in cosmetic, shampoo and compositions applied to mammalian bodies.

Therefore the reference does not teach or suggest the claimed invention because, even though the references suggest the use of zeolite and binders on glass fiber paper; there is no indication that the references would have desired an additional coating that comprised HPC and particularly EMG as required by the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANCISCO TSCHEN whose telephone number is (571)270-3824. The examiner can normally be reached on Monday - Friday 9:00-18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571)272-1418. The fax phone

Application/Control Number: 13/067,917 Page 5

Art Unit: 1712

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/FRANCISCO TSCHEN/ Examiner, Art Unit 1712 OK TO ENTER: /F.T./ 06/16/2014

William L. Robinson Jr. Method And Use Of Organic And July 7, 2011
Mineral Admixtures For EMI And Radioactive Isotope Shielding
Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And
Electrically Conductive Or Resistive, High Performance, High Strength Concrete

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BACKGROUND OF THE INVENTION

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1. Field of the Invention

- 5 This invention relates to a method of increasing the tensile, flexural and compressive
- 6 strengths and the EMI/RF/Microwave and radioactive isotope shielding of concrete,
- 7 cement, gypsum or other pozzolan (alumina siliceous) such as fly ash using electroplated
- 8 nickel oxide or copper coated stainless steel fibers, hydroxypropylcellulose, ethoxylated
- 9 methylglucoside, petroleum coke powder or graphite and silica fume and non-radioactive
- 10 alkali metals such as holmium and natural zeolites such as Clinoptilolite as radioactive
- 11 trapping agents.

12 2. Discussion of the Related Art

- 13 Cement is a widely used building material, but it lacks the ability to shield
- 14 electromagnetic radiation. As the environment is increasingly sensitive to electronic
- 15 pollution, the ability of a building to shield electromagnetic radiation is of increasing
- 16 importance.
- 17 There has been a strong demand of late for high-quality and lightweight radioactive
- 18 isotope shielded building materials such as wall coverings and wallboard.
- 19 Stainless steel fibers reinforced concrete (SSRC), a well dispersed mixture of either short
- 20 or chopped continuous or non-continuous fiber in cement in the range of .90 vol.% has
- 21 been known since the 1970s. SSRC has many outstanding mechanical characteristics
- 22 which are unsurpassed by conventional reinforced concretes particularly, chemical
- 23 stability towards strong alkaline environment and long term durability of mechanical
- 24 strength are a few essential features in the development of SSRC.
- 25 Fly ash can be substituted for cement in concrete mixes for global construction of
- 26 infrastructures saving energy, disposing of waste products, protecting the environment
- 27 against global warming emissions, improving the quality of concrete and reducing cost.
- 28 Ultra fine fly ash can be added to silica fume to enhance the strength of concrete.
- 29 3. Statement of Need

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- 2 There is a need for protecting reinforcing steel adding to the longevity of concrete
- 3 structures by preventing the penetration of waterborne contaminants and chloride-laden
- 4 liquids that cause the corrosion of reinforcing steel.
- 5 There is a need for increased bonding strength and contact resistivity between cement and
- 6 structural steel or steel fibers.
- 7 Because of the developments in electronics technology, there is a need for
- 8 EMI/RF/Microwave Interference shielding of building materials e.g. gypsum wallboard
- 9 and concrete particularly in underground vaults containing power transformers and other
- 10 electronics that are relevant to electric power and telecommunications and for deterring
- 11 electromagnetic forms of spying.
- 12 There is a need for an environmentally friendly way to recycle ashes produced from the
- industrial combustion of coal and petroleum and the minerals and metals contained
- therein e.g. selenium, vanadium, nickel and holmium.
- 15 There is definitely a need for a way to trap radioactive nuclear fission products (isotopes)
- 16 e.g. ¹³⁷Cs and ⁹⁰Sr accidentally or intentionally released into the environment.

17 General Background

- 18 Electric utilities in the United States generate over 100 million tons of petroleum coke
- ash and coal fly ash as a by-product each year. Fly ash in particular is typically disposed
- of in landfills. Course fly ash ground to approximately 3.8 µm can produce high strength
- 21 concrete and 25% cement replacement gave the highest compressive strength (100.3
- 22 MPa). A replacement of 25% cement will result in a 27% reduction in greenhouse gases
- 23 produced from production of cement (680 Kg/ton of cement).
- 24 The cement industry is responsible for producing 5% of global CO₂ emissions; 60% due
- 25 to decarbonization of non-renewable materials such as limestone and 40% due to heating
- 26 cement kilns to 1500 °C using non-renewable fossil fuels.
- Adding .90 vol.% stainless steel fibers (by weight) to cement improves strength by 23%
- 28 equal to 2-3 times that of non-reinforced concrete. The dominant mechanisms of
- 29 EM/RF/Microwave shielding for micron size (>100 nm) steel fibers is absorption.

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2	Nickel filaments of diameter 0.4 μm, as made by electroplating 0.1 μm diameter carbon
3	filaments with nickel, have been shown to be particularly effective. They are known as
4	nickel filaments because they are mostly nickel rather than carbon. A shielding
5	effectiveness of 87 dB at 1 GHz has been attained in a polymer-matrix composite
6	containing just 7 vol.% nickel filaments. Nickel is more attractive than copper, partly
7	due to its superior oxidation resistance.
8	Shielding of 40dB or more in the magnetic field ranging from 150 kHz to 16 MHz is
9	needed for a 99 % EMI block. This degree of shielding effectiveness is sufficient to for
10	the construction of electromagnetic interference structures.
11	Binding Properties of Calcium Hydroxide or Hydrated Lime (CaCO ₃) with HPC.
12	Calcium hydroxide or hydrated lime is the product of the hydration of lime and water:
13	$Ca(OH)_2 < = = = > CaO + H_2O$
14	Lime is a soft, white amorphous powder with alkaline or slightly bitter taste. It has been
15	shown that lime is solubilised in the presence of sugars and it has been observed in set
16	Portland cements as hexagonal plate crystals (Lea, 1970). Lime reacts with carbon
17	dioxide (CO ₂) to form calcium carbonate (CaCO ₃). This reaction which takes place in the
18	presence of moisture is the cause of hardening of high calcium lime mortars.
19	Binding Properties of HPC with Steel Fiber and Cement
20	HPC and Ethoxylated methyl glucoside (moisture barrier) binds together at the 1-3' C-
21	Terminal Domain. How does HPC bind to calcium in concrete? In the presence of water
22	calcium located at the N-Terminal Cellulose Binding Domain in HPC will bind to
23	calcium bonds at the 1-4' β calcium bonding sites in cement.
24	The use of hydroxypropylcellulose or methylcellulose (0.4% to 0.8% by weight of
25	cement) as an admixture in cement paste or concrete was found to increase the shear
26	bond strength with steel reinforcing bar and steel fiber. The bond strength increased with
27	increasing hydroxypropylcellulose or methylcellulose amounts. The contact electrical
8	resistivity between cement and fiber or between concrete and reinforcing bar was not
29	changed by addition of hydroxypropylcellulose or methylcellulose.

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william L. Robinson Jr. Method And Use Of Organic And July 7, 2011
Mineral Admixtures For EMI And Radioactive Isotope Shielding

Of Building Materials Such As Glass Floer Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete

1 2 Trapping of Radioactive Fission Products (Isotopes) Using Non-Radioactive Stable 3 **Metallic Elements** 4 Holmium (houlmism/ HOHL-mee-sm) is a chemical element with the symbol Ho and 5 atomic number 67. Part of the lanthanide series, holmium is a relatively soft and 6 malleable silvery-white metallic element, which is stable in dry air at room temperature. 7 A rare earth metal, it is found in the minerals monazite and gadolinite. Holmium has the 8 highest magnetic strength of any element and therefore is used for the pole pieces of the 9 strongest static magnets. Because holmium strongly absorbs nuclear fission-bred 10 neutrons, it is also used in nuclear control rods. 11 **Zeolite** chemistry is the distribution of silicon and aluminum atoms among the T sites. 12 According to Lowenstein's Rule, AL-O-AL linkages in zeolitic frameworks are 13 Forbidden. As a result, all aluminate tetrahedra must be linked to four silicate 14 tetrahedra, and in general this is proved to be the case, but recent investigations into 15 Zeolites synthesized at high temperatures have shown non-Lowenstein distributions in 16 Sodalite materials. Aluminum ions are formed by losing three (3) electrons making it 17 neutrally charged. The combination of negatively charged silica and aluminum 18 produces negatively charged ions that will absorb electromagnetic waves. Negative 19 ions are a type of antioxidant present in nature that is reported to react with and break 20 down toxins in the bloodstream. 21 The range of Si/Al ratios varies between zeolites. ZSM-5 is a high silicate zeolite, 22 whereas zeolite X/Y can be prepared in high silicate forms, or high aluminate forms, but 23 is usually produced with a Si/Al ratio close to unity with a fully ordered Si-Al 24 distribution over the tetrahedral sites, in accordance with Lowenstein's rule. 25 The inclusion of aluminum into the zeolite structure has two major effects: An increase in 26 the net negative charge - which are neutralized from protons hydrogen bonded to the lone 27 pairs of the bridging oxygens. These acidic sites play a significant role in the zeolite 28 catalytic activity. The materials become hydrophilic. Zeolites are not only influenced by 29 pH but also they are capable of affecting the solution pH. It was found out that clinoptilolite

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2 tends to neutralize the solution by acting as H+acceptor or H+donor (Rivera et al., 2000; 3 Ersoy and Celik, 2002). The pH of solution can also affect removal efficiency by affecting 4 the integrity of zeolite. Clinoptilolite is known to partially degrade and lose its ion exchange 5 capacity in alkaline media (Mier et al., 2001). Also, clinoptilolite structure breaks down in 6 highly acidic solutions (Tsitsishvili, 1992). On the other hand, as the solution pH increases, 7 the number of negatively charged sites increases (Benhammou et al., 2005), Clinoptilolite-8 deionized water suspensions at neutral, acidic and basic pH values exhibited a buffer pH 9 around 9±1. This was also observed by Trgo and Peric (2003) and at all initial pH's 10 examined (2-11) in deionized water-clinoptilolite suspensions pH became stable between 8 11 and 9. Active adsorbent materials such as zeolites, carbon molecular sieve (CMS), alumina and other porous adsorbent materials and lanthanides such as holmium can be 12 13 coated onto glass fiber paper. In order to bind adsorbent particles with glass fibers and to 14 have uniform distribution of adsorbent particles, many ingredients and additives such as 15 retention binders may also be added into the coating solution. The final non-woven-fabric 16 sheet (paper) will be comprised of the retention aid, the active adsorbent materials and 17 the organic polymer. A retention aid is any material that enhances the retention of the 18 glass fibers in the wall liner and adsorbents. The retention aid binders such as Alcoa HiO-19 40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the 20 glass fibers in the paper. Through this process, adsorbent particles tend also to be 21 encapsulated by the boehmite binder material. Absorbent materials such as zeolites 22 adsorbent material which includes but is not limited to zeolite type X, zeolite type A, 23 zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, 24 chabazite, offretite, erionite, mordenite, gmelinite, mazzite, clinoptilolite and mixtures of 25 these. Other adsorbents such as activated alumina sol, silica gel, carbon molecular sieves, 26 amorphous aluminosilicate, clay materials and paramagnetic lanthanide metals such as 27 holmium and erbium can also be used.

Ohiorts of the Invention

William L. Robinson Jr. Method And Use Of Organic And July 7, 2011
Mineral Admixtures For EMI And Radioactive Isotope Shielding
Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And
Electrically Conductive Or Resistive, High Performance, High Strength Concrete

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SUMMARY OF THE INVENTION

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- 4 The present invention generally relates to a method of producing reinforced blended
- 5 cement (e.g clinker, synthetic gypsum and petroleum coke powder), plus stainless steel
- 6 fiber, fly ash and HPC to make high performance concrete for building materials that has
- 7 increased density, bonding, tensile, flexural and compressive strength.
- 8 The present invention also relates to a new application, namely the use of petroleum coke
- 9 powder and steel fibers as an electrically conductive filler in concrete for electromagnetic
- 10 interference (EMI) shielding. EMI shielding is in critical demand due to the interference
- of wireless (particularly radio frequency) devices with digital devices and the increasing
- 12 sensitivity of electronic devices. Shielding is particularly needed for underground vaults
- 13 containing transformers and other electronics that are relevant to electric power and
- 14 telecommunication. It is also needed for deterring electromagnetic forms of spying.
- 15 The high shielding effectiveness of cement paste containing steel fibers is consistent with
- 16 its low electrical resistivity. Stainless steel fibers (8 mm diameter) 0.36 vol.% has very
- low resistivity. The resistivity is 40 Ω cm at 0.78 vol.% steel fibers (8 mm diameter).
- 18 Hence, steel fibers are effective for passing current. Steel is also much more conductive
- 19 than carbon. The high conductivity makes steel fibers outstanding for shielding. In spite
- 20 of the large diameter compared to other shielding materials. In fact, steel fibers (8 mm
- 21 diameter) at .90 vol% reached 71 dB (1.5 GHz).
- 22 The highest two values of EMI consisted of shielding effectiveness previously reported in
- 23 cement-matrix composites are 40 dB, as attained in cement paste containing 1.5 vol.%
- 24 carbon filaments and 70 dB, attained in cement paste containing 0.72 vol.% stainless
- 25 steel fibers of diameter 8 mm and length 6 mm.
- 26 The present invention also relates to a new application, namely the use of alkali
- 27 paramagnetic materials such as Holmium or zeolites (natural or synthetic) dissolved in
- 28 de-ionized water then coated onto a glass fiber substrates (paper) along with an organic
- 29 wash coated polymer and used to cover building materials such as wall board and ceiling

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Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete
tiles and panels or as wall liner (covering) for absorption of nuclear fission products such
as radioactive isotopes of cesium and strontium.
Principles in Accordance with the Present Invention
In achievement of the above objects it is suggested that concrete will be reinforced with
steel fibers and coal fly ash and the addition of an organic (polysaccharide) admixture
e.g. methylcellulose of the invention.
It is also suggested that EMI/RF/Microwave shielding of concrete can be achieved by
cross linking or combining cellulose fibers with deflective or absorptive materials such as
fly ash containing silica fume (< 6 vol.%), coke powder (1.02 vol.%), nickel plated
carbon filaments (7 vol.%) or copper coated stainless steel fibers (.78 vol. %).
It is specifically suggested that EMI/RF/Microwave shielded structural and non-structural
building materials can be used for lateral and distress guidance systems in automated
highways, bridge pavements and levees.
It is also specifically suggested that a stable trapping agent containing a non-radioactive
isotope of the fission product may be negatively charged zeolites such as Clinoptilolite
and chabazite, resulting from the replacement of silicon by aluminum in the tetrahedra,
interfere positively on the mechanisms of ionic exchanges.
The foregoing discussion discloses and describes merely exemplary embodiments of the
present invention. One skilled in the art will readily recognize from such discussion and
claims that various changes, modifications and variations can be made therein without
departing from the spirit and scope of the invention as defined in the following claims.
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Search Notes



Application/Control No.	Applicant(s)/Patent Under Reexamination
13067917	ROBINSON, WILLIAM L.
Examiner	Art Unit
FRANCISCO TSCHEN	1712

Examiner

CPC COMBINATION SETS - SEARCHED			
Symbol	Date	Examiner	

	US CLASSIFICATION SEA	RCHED	
Class	Subclass	Date	Examiner
427	limited by text	6/7/2012	FT
427	407.3,411,415; limited by text	6/7/2012	FT
428	294.7	6/7/2012	FT
442	42,78,180; limited by text	6/7/2012	FT
52	474; limited by text	6/7/2012	FT
442	180; limited by text	6/16/2014	FT

SEARCH NOTES							
Search Notes	Date	Examiner					
Inventor Search	6/7/2012	FT					
See EAST Search Notes	6/7/2012	FT					
Google Scholar zeolite, radiactive absorbing coatings	6/7/2012	FT					
US Harvest Energy and Tech Corp brochures	6/7/2012	FT					
Reviewed applications: 12/656741,60/690071, 61006403, 61064115, 61129912, 61136183, 61193842, 61202133	6/7/2012	FT					
Consulted SPE Jenn Chriss and Examiner, Elizabeth Cole	6/7/2012	FT					
Updated Inventor Search	4/30/2014	FT					
Discussed case with applicant regarding Office of Petitions Decision	4/30/2014	FT					
Updated EAST SEarch	4/30/2014	FT					
CPC Text Search (G21F1/103,1/12,1/10,1/00; D21H13/24,13/40, 13/16; E04C2/043)	4/30/2014	FT					
Updated Inventor Search	6/16/2014	FT					
Updated EAST Search	6/16/2014	FT					

/FRANCISCO TSCHEN/ Examiner.Art Unit 1712	

U.S. Patent and Trademark Office Part of Paper No.: 20140616

SEARCH NOTES		
Search Notes	Date	Examiner
Updated CPC Search	6/16/2014	FT
Consulted Specification and Claims Issue with SPE Tim Meeks	6/16/2014	FT

	INTERFERENCE SEARCH		
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	Interference Searched: UPAD text search, See EAST interference Search Printout	6/16/2014	FT
	Interference Search: UPAD Class Search (427/407.3,411,415; 428/294.7; 442/42,78,180; 52/474)	6/16/2014	FT

/FRANCISCO TSCHEN/ Examiner.Art Unit 1712	

U.S. Patent and Trademark Office Part of Paper No.: 20140616

Issue Classification



Application/Control No	Ap	plicatio	n/Conti	rol No
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13067917

Examiner

FRANCISCO TSCHEN

Art Unit

ROBINSON, WILLIAM L.

Applicant(s)/Patent Under Reexamination

1712

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Symbol		Туре	Version
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CPC Combination Sets				
Symbol	Туре	Set	Ranking	Version

/FRANCISCO TSCHEN/ Examiner.Art Unit 1712	04/30/2014		ns Allowed:
(Assistant Examiner)	(Date)	\$	3
/MICHAEL CLEVELAND/ Supervisory Patent Examiner.Art Unit 1712	06/24/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	-

U.S. Patent and Trademark Office Part of Paper No. 20140616

Issue Classification



Application/Control No.	Applicant(s)/Patent Under Reexamination
13067917	ROBINSON, WILLIAM L.
Examiner	Art Unit

1712

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	CLASS	3		SUBCLASS		CLAIMED NON-CL				-CLAIMED					
428			294.7			В	3	2	В	13 / 02 (2006.0)					
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		noss nei	FERENCE	,3)		В	3	2	В	17 / 08 (2006.0)					
CLASS	SI	SUBCLASS (ONE SUBCLASS PER BLOCK)			CK)	G 2 1 F 1/10 (2006.0)									
427	407.3	415													
442	78	180													
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FRANCISCO TSCHEN

/FRANCISCO TSCHEN/ Examiner.Art Unit 1712	04/30/2014	Total Claims Allowed:		
(Assistant Examiner)	(Date)	3		
/MICHAEL CLEVELAND/ Supervisory Patent Examiner.Art Unit 1712	06/24/2014	O.G. Print Claim(s)	O.G. Print Figure	
(Primary Examiner)	(Date)	1	-	

U.S. Patent and Trademark Office Part of Paper No. 20140616

Issue Classification



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13067917	ROBINSON, WILLIAM L.
Examiner	Art Unit
FRANCISCO TSCHEN	1712

	☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47														
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		17												
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/FRANCISCO TSCHEN/ Examiner.Art Unit 1712	04/30/2014	Total Clain	ns Allowed:	
(Assistant Examiner)	(Date)	3		
/MICHAEL CLEVELAND/ Supervisory Patent Examiner.Art Unit 1712	06/24/2014	O.G. Print Claim(s)	O.G. Print Figure	
(Primary Examiner)	(Date)	1	-	

U.S. Patent and Trademark Office Part of Paper No. 20140616

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	509	((WILLIAM) near2 (ROBINSON)).INV.	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L2	11	((WILLIAM) near2 (ROBINSON)).INV. and baltimore	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L3	12	442/180.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L4	562365	442/180.ccls. cellulose	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L5	171	442/180.ccls. and cellulose	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L6	0	442/180.ccls. and glucoside	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L7	107	442/180.ccls. and surfactant	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L8	5	((WILLIAM) near2 (ROBINSON)).INV. and zeolite	US- PGPUB; USPAT	OR	ON	2014/06/16 13:48
L9	88	D21H13/16.cpc.	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L10	714	E04C2/043.cpc.	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L11	525	D21H13/40.cpc.	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L12	268	D21H13/24.cpc.	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L13	68	G21F1/00.cpc.	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
L14	36849	"90" and zeolite	US- PGPUB; USPAT	OR	OFF	2014/06/16 13:48
S1	479	((WILLIAM) near2 (ROBINSON)).INV.	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:44
S2	0	((WILLIAM) near2 (ROBINSON)).INV. and batimore	US- PGPUB;	OR	OFF	2012/06/05 13:45

	***************************************		USPAT			
S3	10	((WILLIAM) near2 (ROBINSON)).INV. and baltimore	US- PGPUB; USP A T	OR	OFF	2012/06/05 13:45
S4	479	((WILLIAM) near2 (ROBINSON)).INV. andbuilding	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:46
S5	24	((WILLIAM) near2 (ROBINSON)).INV. and building	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:46
S6	0	((WILLIAM) near2 (ROBINSON)).INV. and gypsum	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:47
S7	2650	clinoptilolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:48
S8	123	clinoptilolite and gypsum	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:48
S9	88	clinoptilolite and boehmite and water	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:49
S10	5	clinoptilolite same boehmite and water	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:49
S11	673	(zeolite adj type adj (X A Y))	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:55
S12	15031	"ZSM-3" EMT "EMC-2" "ZSM-18" "ZSM-5" "ZSM-11"	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:35
S13	11601	chabazite offretite erionite mordenite gmelinite mazzite	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:36
S14	3441	(S11 S12 S13) and (radiation)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:37
S15	2	(S11 S12 S13) and (radiation adj absorbing)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:37
S16	0	EMI and (S1 S2 S3)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:56
S17	0	(electromagnetic adj interference) and (S1 S2 S3)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:56
S18	41575	(electromagnetic adj interference)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:56
S19	11	(intentional adj electromagnetic adj interference)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:56
S20	1	"6524846".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:30
S21	22	(chabazite offretite erionite mordenite gmelinite mazzite) and	US- PGPUB;	OR	OFF	2012/06/05 15:47

	and the same of th	(electromagnetic adj interference)	USPAT			
S22	104	(S11 S12 S13) and (electromagnetic adj interference)	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:52
S23	54	(S11 S12 S13) and (electromagnetic adj interference) and paper	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:52
S24	794	(glass adj fiber) adj paper	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:56
S25	794	(glass adj fiber adj paper)	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:56
S26	329	(glass adj fiber adj paper) and coating	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:56
S27	7	(glass adj fiber adj paper) same zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:57
S28	0	(glass adj fiber adj paper) and clinoptilolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:20
S29	0	(glass adj fiber adj paper) and zeolite and boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:21
S30	3074	zeolite and boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:21
S31	1214	zeolite same boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:21
S32	961	zeolite with boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:21
S33	724	radiation same zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:28
S34	1	"20060137276".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:34
S35	37	radiation same zeolite and "427".clas.	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:46
S36	2	10/532635.app.	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:49
S37	30137	gypsum	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S38	2995	gypsum and (glass adj fiber)	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S39	248	gypsum and (glass adj fiber) and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S40	0	gypsum and (glass adj fiber) and zeolite and beohmite	US- PGPUB;	OR	OFF	2012/06/05 16:50

	***************************************		USPAT			
S41	8	gypsum and (glass adj fiber) and zeolite and boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S42	2	gypsum.ab. and (glass adj fiber) and zeolite and boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S43	243	hydroxypropylcellulose and gluceth	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:00
S44	240	hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:00
S45	25	hydroxypropylcellulose same (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:00
S46	2697	gypsum.ab. hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:01
S47	0	gypsum.ab. and hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:01
S48	5	gypsum and hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:01
S49	0	EMI and hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:01
S50	241823	EMI attenuation	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:06
S51	179	EMI adj attenuation	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:06
S52	2	(EMI adj attenuation) with coating	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:06
S53	429	(EMI near3 attenuation)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:07
S54	0	(EMI near3 attenuation) and hydroxypropylcellulose	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:08
S55	174	(EMI) and hydroxypropylcellulose	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:08
S56	0	"13352456".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:12
S57	1	13/352456.app.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:12
S58	0	methyl adj gluceth adj S20	DERWENT	OR	OFF	2012/06/05 18:17
S59	108	methyl adj gluceth	DERWENT	OR	OFF	2012/06/05 18:17

S60	0	(methyl adj gluceth) and gypsum	DERWENT	OR	OFF	2012/06/05 18:17
S61	0	(methyl adj gluceth) and drywall	DERWENT	OR	OFF	2012/06/05 18:17
S62	0	(methyl adj gluceth) and HPC	DERWENT	OR	OFF	2012/06/05 18:17
S63	9	(methyl adj gluceth) and hydroxypropylcellulose	DERWENT	OR	OFF	2012/06/05 18:18
S64	4	"HiQ-40"	DERWENT	OR	OFF	2012/06/05 18:20
S65	233	428/294.7.ccls.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:23
S66	1	"5272240".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:46
S67	1	"5272740".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:46
S68	0	paint.ab. and (methyl adj gluceth adj S20)	US- PGPUB; USPAT	OR	OFF	2012/06/05 19:20
S69	0	paint.ab. and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 19:20
S70	18	coating.ab. and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 19:21
S71	9083	electromagnetic adj shielding	US- PGPUB; USPAT	OR	OFF	2012/06/06 10:40
S72	88	(electromagnetic adj shielding) and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/06 10:40
S73	3	427/407.3.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:33
S74	0	427/407.3.ccls. and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:33
S75	12	427/411.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S76	0	427/415.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S77	0	427/415.ccls. and methyl adj gluceth	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S78	1286	methyl adj gluceth	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S79	112	S78 and construction	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S80	61	S78 and paint	US-	OR	OFF	2012/06/06

			PGPUB; USP A T			13:35
S81	0	S78 and paint.ab.	US- PGPUB; USP A T	OR	OFF	2012/06/06 13:36
S82	0	S78 and paint.ti.	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:36
S83	9	ethoxylated adj methylglucoside	US- PGPUB; USPAT	OR	OFF	2012/06/07 10:10
S84	2	alucol	US- PGPUB; USPAT	OR	OFF	2012/06/07 10:28
S85	93	ethoxylated adj methyl adj glucoside	US- PGPUB; USPAT	OR	OFF	2012/06/07 12:11
S86	0	"200740298235".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:24
S87	0	"200700298235".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:24
S88	1	"20070298235".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:24
S89	1183945	woven nonwoven weav\$3 non?woven paper paper?making papermaking	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:28
S90	1450645	glass fiberglass fiber?glass fibreglass fibre?glass	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:28
S91	366945	S89 and S90	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:28
S92	48058	S89 near3 S90	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:29
S93	87083	S89 with S90	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:29
S94	42	S92 and ((methyl adj gluceth) (ethoxylated adj methyl adj glucoside))	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:29
S95	104	S92 and ((methyl adj gluceth) (ethoxylated adj methyl adj glucoside) EMG (glucam adj "e-20") "mg-20" "mg-10")	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:30
S96	0	S92 and (ethoxylated adj methyl adj glucoside)	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:30
S97	74	S92 and (methyl adj glucoside)	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:30
S98	51	S92 and ((methyl adj gluceth) (ethoxylated adj methyl adj glucoside) (glucam adj "e-20") "mg-20" "mg-	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:33

		1 10")				
S99	1	"4956394".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:33
S100	330	surfactant same (methyl adj glucoside)	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:34
S101	230	surfactant with (methyl adj glucoside)	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:34
S102	124	S96 S97 S98	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S103	673	(zeolite adj type adj (X A Y))	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S104	15050	"ZSM-3" EMT "EMC-2" "ZSM-18" "ZSM-5" "ZSM-11"	US- PGPUB; USP A T	OR	OFF	2012/06/07 13:36
S105	11608	chabazite offretite erionite mordenite gmelinite mazzite	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S106	21159	S103 S104 S105	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S107	183	S106 and S92	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S108	312	boehmite and S92	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S109	13	S107 and S108 and S92	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S110	0	"068239-42-9"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:42
S111	657	"beta-d-glucoside"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:42
S112	76	methyl adj "beta-d-glucoside"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:42
S113	0	ethoxylated adj methyl adj "beta-d- glucoside"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:43
S114	76	methyl adj "beta-d-glucoside"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:43
S115	0	42/180.ccls.	US- PGPUB; USPAT	OR	OFF	2012/06/07 14:58
S116	693	442/180.ccls.	US- PGPUB; USPAT	OR	OFF	2012/06/07 14:58
S117	3	442/78.ccls.	US- PGPUB;	OR	OFF	2012/06/07 14:59

			USPAT			
S118	12	442/180.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/07 14:59
S119	483626	442/180.ccls. cellulose	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:00
S120	148	442/180.ccls. and cellulose	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:00
S121	0	442/180.ccls. and glucoside	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:00
S122	98	442/180.ccls. and surfactant	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:00
S123	0	silsesquozane	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:38
S124	24	silsesquoxane	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:38
S125	8971	silsesquioxane	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:40
S143	0	((WILLIAM) near2 (ROBINSON)).INV. and (RFI or EMI)	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:40
S144	5	((WILLIAM) near2 (ROBINSON)).INV. and zeolite	US- PGPUB; USPAT	OR	ON	2014/04/30 10:40
S145	87	D21H13/16.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:42
S146	711	E04C2/043.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:42
S147	518	D21H13/40.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:42
S148	266	D21H13/24.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:42
S149	66	G21F1/00.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
S150	5702	G21F.cpcl.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
S151	110	G21F1/10.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
S152	76	G21F1/103.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
S153	76	G21F1/12.cpc.	US- PGPUB;	OR	OFF	2014/04/30 10:53

			USPAT			
S154	1	S151 and zeolite	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:54
S155	36416	"90" and zeolite	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:54
S156	266	S150 and zeolite	US- PGPUB; USPAT	OR	ON	2014/04/30 10:54
S157	0	S150 and ethoxylated adj methyl adj glucose	US- PGPUB; USPAT	OR	ON	2014/04/30 10:55
S158	0	S150 and methyl adj glucose	US- PGPUB; USPAT	OR	ON	2014/04/30 10:56
S159	0	S150 and methylglucose	US- PGPUB; USPAT	OR	ON	2014/04/30 10:56
S160	65	S150 and glucose	US- PGPUB; USPAT	OR	ON	2014/04/30 10:56
S161	252	S150 and cellulose	US- PGPUB; USPAT	OR	ON	2014/04/30 11:02
S162	3	S150 and hydroxy near2 cellulose	US- PGPUB; USPAT	OR	ON	2014/04/30 11:02
S163	1	"20070254099".pn.	US- PGPUB; USPAT	OR	OFF	2014/05/01 14:20

6/16/2014 2:10:15 PM

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OK TO ENTER: /F.T./ 06/16/2014

4108465610

Method And Use Of Organic And Mineral Admixtures For EM1 And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete

An Application for Utility Patent Filed in:

THE UNITED STATES PATENT OFFICE

On behalf of the Inventor:

William L. Robinson, Jr.

(Substitute)

Citizen of the United States of America

Further respectfully possessing as legal residential and postal address:

5914 Greenspring Avenue, Baltimore, Maryland 21209-3920

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2014-05-23

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore, MD 21209

Paper No.

Application No.:	13/067,917	Date Mailed:	2014-05-23
First Named Inventor:	Robinson, William, L.	Examiner:	TSCHEN, FRANCISCO W
Attorney Docket No.:		Art Unit:	1712
Confirmation No.:	8019	Filing Date:	2011-07-07

Please find attached an Office communication concerning this application or proceeding.

Commissioner for Patents

PTO-90c (Rev.08-06)

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SANDERS

JUN 06 2014

PAGE 03

Nation of Non Compliant Amondment	Application No. 13/067,917	ROBINSON, WILLIAM L.						
Notice of Non-Compliant Amendment (37 CFR 1.121)		Art Unit 2800						
- The MAILING DATE of this communication app	ears on the cover sheet with the c	orrespondence address						
The amendment document filed on <u>14 May, 2014</u> is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.								
THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT: 1. Amendments to the specification: A. Amended paragraph(s) do not include markings. B. New paragraph(s) should not be underlined. C. Other								
 2. Abstract: A. Not presented on a separate sheet. 37 CFR 1.72. B. Other 								
 3. Amendments to the drawings: A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d). B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required. C. Other 								
 ✓ 4. Amendments to the claims: ✓ A. A complete listing of all of the claims is not present. ✓ B. The listing of claims does not include the text of all pending claims (including withdrawn claims) ✓ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended). ✓ D. The claims of this amendment paper have not been presented in ascending numerical order. ✓ E. Other:								
5. Other (e.g., the amendment is unsigned or n of the amendment format required by 37 CFR 1.12	ot signed in accordance with 37 1, see MPEP § 714.	CFR 1.4): For further explanation						
TIME PERIODS FOR FILING A REPLY TO THIS NOTICE: 1. Applicant is given no new time period if the non-compliant amendment is an after-final amendment or an amendment filed after allowance, or a drawing submission (only) If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the entire corrected amendment must be resubmitted.								
Applicant is given two months from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a Quayle action. If any of above boxes 1 to 4 are checked, the correction required is only the corrected section of the non-compliant amendment in compliance with 37 CFR 1.121.								
Extensions of time are available under 37 CFR amendment or an amendment filed in response to Failure to timely respond to this notice will resume Abandonment of the application if the non-confiled in response to a Quayle action; or Non-entry of the amendment if the non-compamendment.	o a <i>Quayle</i> action. It in: impliant amendment is a non-fin	al amendment or an amendment						
Legal Instruments Examiner (LIE), if applicable /DORO	THY BELL/ Te	lephone No: <u>(571)272-1552</u>						

Status Identifier To The Elected Claims

Examiner Tschen,

Pursuant to Item #4 of the Notice of Non-Compliant Amendment (37 CFR 1.121) the Applicant/Inventor hereby cancels Claims 1-19 and submits the following Claims (20-22) with the required status identifiers:

Claim 20. (Previously Presented) "A method for producing building materials, the building materials selected from the group consisting of gypsum wallboard, mineral fiber acoustic ceiling tiles, mineral fiber acoustic panels, PVC laminated gypsum ceiling tiles, fiber glass ceiling panels, fiber glass acoustic panels, ceiling tiles and wall liners; the building materials containing a woven or nonwoven glass fiber paper substrate coated with an aqueous composition comprising a zeolite radiation absorbent acting as a trapping agent and a retention aid binder, the aqueous composition applied at a thickness of .001 in - .002 in., the method comprising the steps of:

- a) mixing at a ratio of 60-80% radiation absorbing zeolite and 40-20% retention aid binder in DI water at a pH 8-9 and a temperature of 28-30 deg. C for two minutes to create an aqueous composition, then;
- b) applying the aqueous composition by spraying, dipping or coating onto the glass fiber paper substrate, then,
- c) coating an organic composition over the aqueous composition, the organic composition comprising: hydroxypropylcellulose (HPC) and Methyl Gluceth-20 (EMG) in 60-40% ratio (HPC:EMG) in DI water (20% vol)."
- Claim 21. (Currently Amended) "The method of producing building materials according

to Claim 20, in which the zeolite radiation absorbent is selected from the group consisting of zeolites type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L. charbazite, offretite, erionite, mordenite gmelinite, mazzite, clinoptilolite and TiO2 and mixtures of these."

Claim 22. (Previously presented) "The method of producing building materials according to Claim 20, in which the retention aid binder is selected from the group consisting of boehmite, Alucol, or Alumina Sol are added to the slurry to bind the absorbent particles

to the glass fibers in the paper."

Villiam L. Robinson, Jr.

Applicant/Inventor

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410) 504-5258 - Ph/Fax

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PAGE 01

JUN 06 2014

LOC Code: IRAN.LET

Document Description: Transmittal Letter

Total Number of Pages in This Submission

יפָּחַבְּתוּן צְּקַּפְּבָּעַרָּדִיקּ 2705-1290 BMO ב2705 לוויניים האור איז האירואיים אויים האירואיים אויים האירואיים אורים האירואיים אורים אינים אינים אורים אורי

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Application Number 13/067,917

Filing Date July 7, 2011

First Named Inventor Robinson, William L., Jr.

Art Unit 1712

Examiner Name Franscisco Tschen

Attorney Docket Number

		ENCLUSURES	(Check all that apply))	ŧ	
				After A	owance Communication to TC	
Fee Trans	mittal Form	Drawing(s)			ı	
Fee Attached		Licensing-related Papers			Communication to Board sale and Interferences	
Amendment/Reply					Communication to TC Notice, Brief, Repty Brief)	
After Final		Petition to Conve Provisional Apoli		Prostin	tary Information	
, At	fidevits/declaration(s)	Power of Attorne	y, Revocation	. /		
Extension	of Time Request	Change of Come	spondence Address	V Status Other f	inclosure(s) (please identify	
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Signature	(10	14/1/1				
Printed name	Willia	m L. Robinson	, Jr.			
Date	ate. // Reg. No.					
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Typed or printed r	nume y 11i	am L. Hopinso	n, Jr.	Date	June 6, 2014	
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This cosection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to the (and by the USPTO to process) an application. Confidentially is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including attributing, preparing, and submitting the complete application from the the USPTO. Time will vary depending upon the individual case. Any comments on the smooth of this you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patient and Trademark. Office, U.S. Dependment of Commence, P.O. Box 1450, Alexandria, VA 22313-1450, DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patients, P.O. Box 1460, Alexandria, VA 22313-1460.

MAY 3 0 2014

Status Identifier To The Elected Claims

Examiner Tschen.

Pursuant to Item #4 of the Notice of Non-Compliant Amendment (37 CFR 1.121) the Applicant/Inventor hereby submits the following Claims (20-22) with the required status identifiers:

Claim 20. "A method for producing building materials, the building materials selected from the group consisting of gypsum wallboard, mineral fiber acoustic ceiling tiles, mineral fiber acoustic panels, PVC laminated gypsum ceiling tiles, fiber glass ceiling panels, fiber glass acoustic panels, ceiling tiles and wall liners; the building materials containing a woven or nonwoven glass fiber paper substrate coated with an aqueous composition comprising a zeolite radiation absorbent acting as a trapping agent and a retention aid binder, the aqueous composition applied at a thickness of .001 in - .002 in., the method comprising the steps of:

- a) mixing at a ratio of 60-80% radiation absorbing zeolite and 40-20% retention aid binder in DI water at a pH 8-9 and a temperature of 28-30 deg. C for two minutes to create an aqueous composition, then;
- b) applying the aqueous composition by spraying, dipping or coating onto the glass fiber paper substrate, then,
- c) coating an organic composition over the aqueous composition, the organic composition comprising: hydroxypropylcellulose (HPC) and Methyl Gluceth-20 (EMG) in 60-40% ratio (HPC:EMG) in DI water (20% vol)." (Currently amended)
- Claim 21. "The method of producing building materials according to Claim 20, in which

the zeolite radiation absorbent is selected from the group consisting of zeolites type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L. charbazite, offretite, erionite, mordenite gmelinite, mazzite, clinoptilolite and TiO2 and mixtures of these." (Currently amended)

Claim 22. "The method of producing building materials according to Claim 20, in which the retention aid binder is selected from the group consisting of boehmite, Alucol, or Alumina Sol are added to the slurry to bind the absorbent particles to the glass fibers in

the paper." (Currently amended)

William L. Robinson.

(443) 320-3123-Phone

A10) 504-5258 / PM/Fax

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Doc Code: TRAN.LET

Document Description: Transmittal Letter

PTO/S8/21 (07-09)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Petent and Trademark Office; U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond

to a collection of information unless it displays a valid OMB control number. **Application Number** 13/067,91**7** TRANSMITTAL Filing Date July 7, 2011 **FORM** First Named Inventor Robinson, William L., Art Unit 1712 Examiner Name Franscisco Tschen (to be used for all correspondence after initial filing) Attorney Docket Number 4 Total Number of Pages In This Submission

		ENCLOSURES (Check all that apply)			
		,	After Allowance Communication to TC		
Fee Attached		Drawing(s)			
		Licensing-related Papers	Appeal Communication to Board of Appeals and Interferences		
Amendme	ent/Reply	Petition	Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)		
After Final		Petition to Convert to a Provisional Application	Proprietary Information		
Af	fidevits/declaration(s)	Power of Attorney, Revocation Change of Correspondence Address	Status Letter		
Extension	of Time Request		Other Enclosure(s) (please identify		
Express #	Abandonment Request	Terminal Disclaimer	below):		
Informatio	n Disclosure Statement	Request for Refund			
	•	CD, Number of CD(s)	· ·		
Certified (Documen	Copy of Priority	Landscape Table on CD			
Reply to Missing Parts/ Incomplete Application Reply to Missing Parts under 37 CFR 1.52 or 1.53		Elected Claims	ers To The Amended		
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Signature	(10)	Mark no			
Printed name	W/1/lian	n L. Robinson, Jr. °			
Data	- [,]	Reg. No.			
	May 29, 2014 CERTIFICATE OF TRANSMISSION/MAILING				
I hereby certify the sufficient postage the date shown be	it this correspondence is be as first class mail in an env	aling facsimile transmitted to the USPTO or deposited along addressed to: Commissioner for Patents, P.O.	with the United States Postal Service with		
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Typed or printed r	name VAllia	am L. Robinson, Jr.	Date May 29, 2014		
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This collection of information is required by 37 CFR 1.5. The interfaction is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will very depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Tradement Office, U.S. Popertment of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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2014-05-23

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore, MD 21209

Paper No.

Application No.:	13/067,917	Date Mailed:	2014-05-23
First Named Inventor:	Robinson, William, L.	Examiner:	TSCHEN, FRANCISCO W
Attorney Docket No.:		Art Unit:	1712
Confirmation No.:	8019	Filing Date:	2011-07-07

Please find attached an Office communication concerning this application or proceeding.

Commissioner for Patents

PTO-90c (Rev.08-06)

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PAGE 03

Notice of Non-Compliant Amendment	Application No. 13/067,917	Applicant(s) ROBINSON, WILLIAM L.
(37 CFR 1.121)		Art Unit 2800
- The MAILING DATE of this communication app	ears on the cover sheet with the	correspondence address
The amendment document filed on <u>14 May, 2014</u> is conrequirements of 37 CFR 1.121 or 1.4. In order for the an item(s) is required.		
THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE 1. Amendments to the specification: A. Amended paragraph(s) do not include B. New paragraph(s) should not be unde C. Other	markings.	BE NON-COMPLIANT:
2. Abstract: A. Not presented on a separate sheet. 37 B. Other	7 CFR 1.72.	
 3. Amendments to the drawings: A. The drawings are not properly identifies "Annotated Sheet" as required by 37 (CFR 1.121(d).	
 B. The practice of submitting proposed descriptions in the showing amended figures, without ma C. Other 		
 4. Amendments to the claims: A. A complete listing of all of the claims is B. The listing of claims does not include the claim has not been provided with of each claim cannot be identified. Not number by using one of the following of (Previously presented), (New), (Not ended). D. The claims of this amendment paper here. E. Other: 	the text of all pending claims (income the proper status identifier, and the proper status identifier, and the the status of every claim mustatus identifiers: (Original), (Cuntered), (Withdrawn) and (Withd	d as such, the individual status ust be indicated after its claim rently amended), (Canceled), rawn-currently amended).
5. Other (e.g., the amendment is unsigned or not the amendment format required by 37 CFR 1.12		CFR 1.4): For further explanation
TIME PERIODS FOR FILING A REPLY TO THIS NOTIC 1. Applicant is given no new time period if the non-continuous amendment fitted after allowance, or a drawing submafter-final amendment with corrections, the entire continuous.	ompliant amendment is an aftenission (only). If applicant wishes	to resubmit the non-compliant
 Applicant is given two months from the mail date of amendment is one of the following: a preliminary am request for continued examination (RCE) under 37 Cperiod under 37 CFR 1.103(a) or (c), and an amend to 4 are checked, the correction required is only the with 37 CFR 1.121. 	nendment, a non-final amendme CFR 1.114), a supplemental amo ment filed in response to a Quay	nt (including a submission for a endment filed within a suspension yle action. If any of above boxes 1
Extensions of time are available under 37 CFR amendment or an amendment filed in response to Failure to timely respond to this notice will resu Abandonment of the application if the non-co filed in response to a Quayle action; or	o a <i>Quayle</i> action. It in: mpliant amendment is a non-fin:	al amendment or an amendment
Non-entry of the amendment if the non-complete amendment. Legal Instruments Examiner (LIE), if applicable /DOROT	•	ephone No: (571)272-1552
Logar modulitents Examiner (LIL), it applicable (DONOT	THE TELE	cynione no. <u>vor nare, rose</u>

Status Identifier To The Elected Claims

Examiner Tschen,

Pursuant to Item #4 of the Notice of Non-Compliant Amendment (37 CFR 1.121) the Applicant/Inventor hereby submits the following Claims (20-22) with the required status identifiers:

Claim 20. "A method for producing building materials, the building materials selected from the group consisting of gypsum wallboard, mineral fiber acoustic ceiling tiles, mineral fiber acoustic panels, PVC laminated gypsum ceiling tiles, fiber glass ceiling panels, fiber glass acoustic panels, ceiling tiles and wall liners; the building materials containing a woven or nonwoven glass fiber paper substrate coated with an aqueous composition comprising a zeolite radiation absorbent acting as a trapping agent and a retention aid binder, the aqueous composition applied at a thickness of .001 in - .002 in., the method comprising the steps of:

- a) mixing at a ratio of 60-80% radiation absorbing zeolite and 40-20% retention aid binder in DI water at a pH 8-9 and a temperature of 28-30 deg. C for two minutes to create an aqueous composition, then;
- b) applying the aqueous composition by spraying, dipping or coating onto the glass fiber paper substrate, then,
- c) coating an organic composition over the aqueous composition, the organic composition comprising: hydroxypropylcellulose (HPC) and Methyl Gluceth-20 (EMG) in 60-40% ratio (HPC:EMG) in DI water (20% vol)." (Currently amended)
- Claim 21. "The method of producing building materials according to Claim 20, in which

the zeolite radiation absorbent is selected from the group consisting of zeolites type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L. charbazite, offretite, erionite, mordenite gmelinite, mazzite, clinoptilolite and TiO2 and mixtures of these." (Currently amended)

Claim 22. "The method of producing building materials according to Claim 20, in which the retention aid binder is selected from the group consisting of boehmite, Alucol, or Alumina Sol are added to the slurry to bind the absorbent particles to the glass fibers in

(Currently amended)

Robinson.

504-5258 / Ph/Fax

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Document Description: Transmittal Letter

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to a offering of information under it disorters and ACL ON a control of the paper of the person of

to a collection of information unless it displays a valid OMB control number. Application Number 13/067,917 TRANSMITTAL Filing Date July 7, 2011 FORM First Named Inventor Robinson, William L., Jr. Art Unit 1712 Examiner Name Franscisco Tachen (to be used for all correspondence after initial filing) Attorney Docket Number 4 Total Number of Pages in This Submission

		ENGLUSURES (Check all that apply)	•
			After Allowance Communication to TC
Fee Tran	smittel Form	Drawing(s)	
Fee Attached Amendment/Reply After Final Affidavits/declaration(s) Extension of Time Request Express Abandonment Request Information Disclosure Statement Certified Copy of Priority Document(s) Reply to Missing Parts/ Incomplete Application Reply to Missing Parts under 37 CFR 1.52 or 1.53		Licensing-related Papers	Appeal Communication to Board of Appeals and Interferences
		Petition Petition to Convert to a Provisional Application Power of Attorney, Revocation Change of Correspondence Address Terminal Discisimer Request for Refund CD, Number of CD(s) Landscape Table on CD Remarks Status Identif Elected Claims	Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) Proprietary Information Status Letter Other Enclosure(s) (please Identify below):
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Firm Name		7/10	
Signature	(10	14/1/2	· · · · · · · · · · · · · · · · · · ·
Printed name	WALLia	m L. Robinson, Jr.	
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	May 29	, 2014 // ERTIFICATE OF TRANSMISSION/MAILI	NG
hereby certify the sufficient postage the date shown be	it this correspondence is b as first class/mall in an en-	eigg facsimile transmitted to the USPTO or deposited velope addressed to: Commissioner for Patents, P.O.	d with the United States Postal Service with
Typed or printed r	name yaliia	am L. Nopinson, Jr.	Date May 29, 2014
This collection of info	ormation is required by 37 CFF	R 1.5. The importantion is required to obtain or retain a benefit by 35 U.S.C. 122 and 37 CER 1.11 and 1.44. This colle	It by the public which is to the (and by the USPTO to

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PAGE 02

MAY 2 9 2014

Notice of Non-Compliant Amendment	13/067,917	ROBINSON, WILLIAM L.
(37 CFR 1.121)		Art Unit 2800
- The MAILING DATE of this communication app	ears on the cover sheet	with the correspondence address
The amendment document filed on <u>14 May, 2014</u> is consrequirements of 37 CFR 1.121 or 1.4. In order for the amitem(s) is required.	sidered non-compliant b nendment document to i	pecause it has failed to meet the be compliant, correction of the following
THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE A 1. Amendments to the specification: A. Amended paragraph(s) do not include B. New paragraph(s) should not be under C. Other	markings.	ENT TO BE NON-COMPLIANT:
 2. Abstract: A. Not presented on a separate sheet. 37 B. Other 	CFR 1.72,	
 3. Amendments to the drawings: A. The drawings are not properly identified "Annotated Sheet" as required by 37 C B. The practice of submitting proposed drawing amended figures, without mar C. Other 	FR 1.121(d). awing correction has be	een eliminated. Replacement drawings
 4. Amendments to the claims: A. A complete listing of all of the claims is B. The listing of claims does not include the C. Each claim has not been provided with of each claim cannot be identified. Not number by using one of the following s (Previously presented), (New), (Not end). D. The claims of this amendment paper has a contract of the claims. 	he text of all pending cla the proper status ident te: the status of every of tatus identifiers; (Origin tered), (Withdrawn) and	ifier, and as such, the individual status claim must be indicated after its claim al), (Currently amended), (Canceled), if (Withdrawn-currently amended).
5. Other (e.g., the amendment is unsigned or no of the amendment format required by 37 CFR 1.121	ot signed in accordance , see MPEP § 714.	with 37 CFR 1.4): For further explanation
TIME PERIODS FOR FILING A REPLY TO THIS NOTIC 1. Applicant is given no new time period if the non-co amendment filed after allowance, or a drawing submi after-final amendment with corrections, the entire co	mpliant amendment in ission (only) If applicant	t wishes to resubmit the non-compliant
 Applicant is given two months from the mail date of amendment is one of the following: a preliminary ame request for continued examination (RCE) under 37 C period under 37 CFR 1.103(a) or (c), and an amendn to 4 are checked, the correction required is only the c with 37 CFR 1.121. 	endment, a non-final an FR 1.114), a suppleme nent filed in response to	nendment (including a submission for a ntal amendment filed within a suspension o a Quayle action. If any of above boxes 1
Extensions of time are available under 37 CFR 1 amendment or an amendment filed in response to Failure to timely respond to this notice will result Abandonment of the application if the non-confiled in response to a Quayle action; or Non-entry of the amendment if the non-complicamendment.	a <i>Quayle</i> action. t in: npliant amendment is a	non-final amendment or an amendment
_egal Instruments Examiner (LIE), if applicable <u>/DOROTE</u>	HY BELL/	Telephone No: <u>(571)272-1552</u>

U.S. Patent and Trademark Office

PTOL-324 (11-13)

Notice of Non-Compliant Amendment (37 CFR 1.121)

Part of Paper No. 20140522-1

Doc Code: TRAN.LET

Document Description: Transmittal Letter

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		Application Number	13/067,917
TRANSMITTAL		Filing Date	July 7, 2011
FORM		First Named Inventor	Robinson, William L., Jr.
(to be used for all correspondence after initial filing)		Art Unit	1712
		Examiner Name	Franscisco Tschen
Total Number of Pages in This Submission	4	Attorney Docket Number	

_		ENGLOSURES (Check all that appl	y)	4
			After	Allowance Communication to TC
Fee Transmittal Form Fee Attached Amendment/Reply After Final		Orawing(s)		
		Licensing-related Papers Petition Petition to Convert to a		al Communication to Board peets and Interferences
				Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
,	idavits/declaration(s)	Provisional Application Power of Attorney, Revocation Change of Correspondence Address	. / `	Proprietary Information Status Letter
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	n Disclosure Statement	Request for Refund CD, Number of CD(s)	-	
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Reply to Missing Parts/ Incomplete Application Reply to Missing Parts under 37 CFR 1.52 or 1.53		Remarks	ifiers To	The Amended
	SIGNA	JURE OF APPLICANT, ATTORNEY, (OR AGENT	
Firm Name				
Signature	(1/4	14/1/1.		
Printed name	W/1/liam	L. Robinson, Jr.		
Data	May 29, 2014 //			
	CE	RTIFICATE OF TRANSMISSION/MA	ILING	
I hereby certify that sufficient postage a the date shown be	es first class/mail in an/env	elds facsimile transmitted to the USPTO or depositions addressed to: Commissioner for Patents,	sited with the Ur P.O. Box 1450,	ited States Postal Service with Alexandria, VA 22313-1450 on
	110	TO PLY 1/1.		
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This collection of info	mation is required by 37 CFR	1.5. The importation is required to obtain or retain a b	enefit by the public	which is to file (and by the USPTO to

process) an application. Confidentially is governed by 38 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will very depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1460, Alexandria, VA 22313-1450, DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



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e 2014-05-23

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore, MD 21209

Paper No.

Application No.:	13/067,917	Date Mailed:	2014-05-23
First Named Inventor:	Robinson, William, L.	Examiner:	TSCHEN, FRANCISCO W
Attorney Docket No.:		Art Unit:	1712
Confirmation No.:	8019	Filing Date:	2011-07-07

Please find attached an Office communication concerning this application or proceeding.

Notice of Non-Compliant Amendment (37 CFR 1.121)

Application No. 13/067,917	Applicant(s) ROBINSON, WILLIAM L.
	Art Unit 2800

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

The amendment document filed on <u>14 May, 2014</u> is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

nom(o) to roganiza.
THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT: 1. Amendments to the specification: A. Amended paragraph(s) do not include markings. B. New paragraph(s) should not be underlined. C. Other
 2. Abstract: A. Not presented on a separate sheet. 37 CFR 1.72. B. Other
 3. Amendments to the drawings: A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d). B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required. C. Other
 ✓ A. A complete listing of all of the claims is not present. ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims) ☑ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended). ☐ D. The claims of this amendment paper have not been presented in ascending numerical order. ☐ E. Other:
5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4): For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

- 1. Applicant is given **no new time period if the non-compliant amendment is an** after-final amendment or an amendment filed after allowance, or a drawing submission (only) If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
- 2. Applicant is given **two months** from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a Quayle action. If any of above boxes 1 to 4 are checked, the correction required is only the corrected section of the non-compliant amendment in compliance with 37 CFR 1.121.

Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action.

Failure to timely respond to this notice will result in:

Abandonment of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action; or

Non-entry of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

Legal Instruments Examiner (LIE), if applicable /DOROTHY BELL/ Telephone No: (571)272-1552

Metnod And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete

An Application for Utility Patent Filed in:

THE UNITED STATES PATENT OFFICE

On behalf of the Inventor:

William L. Robinson, Jr.

(Original)

Citizen of the United States of America

Further respectfully possessing as legal residential and postal address:

5914 Greenspring Avenue, Baltimore, Maryland 21209-3920

(410) 504-5258 - Ph/Fax

Attachments: Substitute Specifications

Replacement Claims
Revised References

William L. Kodinson Jr. Method And Use Of Organic And July 1, 2011
Mineral Admixtures For EMI And Radioactive Isotope Shielding
Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And
Electrically Conductive Or Resistive, High Performance, High Strength Concrete

ABSTRACT

A method is disclosed for the use of an organic admixture composed of a polysaccharide such as hydroxypropylcellulose and a monosaccharide such as ethoxylated methylglucoside and de-ionized water and metal and mineral additives e.g. electroplated nickel exide or copper coated stainless steel fibers, ultra fine coal fly ash, silica fume and earbon based materials such as graphite and not colours colours.

			Applicant(<u>s) </u>
	Application No 13/067,917	•	ROBINSON	, WILLIAM L.
4 Alam Cumman/	Examiner		Art Unit	ALA (First Inventor to File) Status
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Period for Repty A SHORTENED STATUTORY PERIOD FOR RICHIS COMMUNICATION. Extensions of time may be available under the provisions of 37 C after SIX (8) MONITHS from the making date of this communication if NO period for repty is appectfued above, the maximum statutory if NO period for repty appectfued above, the maximum statutory if NO period for repty within the set or extended period for repty will, by Any reply received by the Office later than three months after the seamed patient term adjustment. See 37 CFR 1,704(b).	FR 1.136(a). In no event, hou on, period will apply and will explo stablite, cause the application mailing date of this communi	wever, may a reply be a SIX (6) MONTHS fro to become ABANDOI cation, even if timely f	m the mailing date VED (35 U.S.C. § 1 Ved, may reduce at	of this communication. (33). Iy
Status	4/16/2014.			
Status 1) Responsive to communication(s) filed on L A declaration(s)/affidavit(s) under 37 Cl	FR 1.130(D) 1000 115.	e filed on	_	•
2a) This action is FINAL.	☑ This action is non-	final.	aat forth d	uring the interview ON
	n response to a restr	iction requireme	ent set form d ed into this ac	tion.
An election was made by the applicant in 29 May 2012; the restriction requirement Since this application is in condition for a				
closed in accordance with the practice u	inder Ex parte Quayl	e, 1935 C.D. 11	, 453 O.G. 2	13.
Disposition of Claims*				
5) Claim(s) 1-22 is/are pending in the appl		41		
5a) Of the above claim(s) <u>1-19</u> is/are wit	hdrawn from conside	eration.		
7) Claim(s) 20-22 is/are rejected.				
8) Claim(s) is/are objected to.				
9) Claim(s) are subject to restriction	•			
* If any claims have been determined <u>allowable</u> , you m participating intellectual property office for the correspo				lighway program at a
http://www.uspto.gov/patents/init_events/pph/index.jsp				
Application Papers			,	
10) The specification is objected to by the E	xaminer.			
11) The drawing(s) filed on is/are: a)	accepted or b)	objected to by t	he Examiner	•
Applicant may not request that any objection	to the drawing(s) be h	eld in abeyance.	See 37 CFR 1	1.85(a).
Replacement drawing sheet(s) including the Priority under 35 U.S.C. § 119	correction is required	Tine drawing(s)	s objected to. S	See 37 CFR 1.121(d),
12) Acknowledgment is made of a claim for Certified coples:	foreign priority under	35 U.S.C. § 11	9(a)-(d) or (f)	
a) ☐ All b) ☐ Some** c) ☐ None of the:			•	
1. Certified copies of the priority do	cuments have been r	eceived.		
2. Certified copies of the priority do	cuments have been r	eceived in Appl	ication No	· · · · · · · · · · · · · · · · · · ·
application from the international	Bureau (PCT Rule 1:	7 2/611	erved in this	National Stage
** See the attached detailed Office action for a list of the	certified copies not re	beived.		
Attachment(s)	•			•
1) Notice of References Cited (PTO-892)	3) [Interview Summ	ary (PTO-413)	
2) Information Disclosure Statement(s) (PTO/SB/08a and/o Paper No(s)/Mail Date	r PTO/SB/08h)	Paper No(s)/Mai Other:	Date. <u>4/29/201</u>	4.

PAGE 4/4 * RCVD AT 5/14/2014 1:22:05 AM [Eastern Daylight Time] * SVR:W-PTOFAX-002/38 * DNIS:2738300 * CSID:4108465610 * DURATION (mm-ss):03-03⁷¹⁴⁰⁴²⁹

Doc Code: TRAN.LET

Document Description: Transmittal Letter

RECEIVED CENTRAL FAX CENTER

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PTO/SB/21 (07-09)

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Application Number 13/067,917 TRANSMITTAL Filing Date July 7, 2011 **FORM** First Named Inventor ROBINSON, WILLIAM L., Jr. Art Unit 1712 Examiner Name (to be used for all correspondence after initial filing) Francisco Tschen **Attorney Docket Number** Total Number of Pages in This Submission

		ENCLOSURES (Check all that appl)	7)		
			After Allowance Communication to TC		
Fee Attached		Drawing(s)			
		Licensing-related Papers	Appeal Communication to Board of Appeals and Interferences		
Amendment/Reply		P	Appeal Communication to TC		
After Final		Petition Petition to Convert to a	(Appeal Notice, Brief, Reply Brief)		
Affidavits/declaration(s)		Provisional Application Power of Attorney, Revocation	Proprietary Information		
• •		Change of Correspondence Address	Status Letter		
Extension of Time Request		Terminal Disclaimer	Other Enclosure(s) (please identify below):		
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Certified Copy of Priority Document(s) Reply to Missing Parts/		Landscape Table on CD Remarks			
		Substitute Specifications			
	te Application Reply to	Amended Elected Claims			
Missing Parts under 37 CFR 1.52 or 1.53		Revised References			
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Printed name	William L. Arbinson, Jr.				
Data	May 13,	201/4 Reg No.			
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i hereby certify thi sufficient postage the date shown bi	as first class mail in an 🏤	eing facelmite transmitted to the USPTO or depos religion addressed to: Commissioner for Patents, F	ited with the United States Postal Service with 2.O. Box 1450, Alexandria, VA 22313-1450 on		
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Typed or printed name William		am L. Robinson, Jr.	Date May 13, 2014		
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process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450, DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Application

13/067,917

Applicant

ROBINSON, WILLIAM L. JR.

Filed

July 7, 2011

TC/A.U.

1712

Examiner

Francisco Tschen

Commissioner For Patents P.O. Box 1450 Alexandria, VA 22313-1450 VIA FACSIMILE: (571) 273-8300

RE: Amendment

Sir/Madame:

the attached information is being submitted in response to the Utilice Action Summary received from Examiner Tschen dated 4/29/2014 (see attached copy of the OAS). Per our discussion, Claims #1-19 have been cancelled. Election of this invention is made with traverse (37 CFR 1.143). The TiO2 absorbent mentioned in Claim #16 has been added to Replacement Claim #21. The Claim of Benefit From Earlier Filing Dates has been deleted. A marked up copy of the original patent application and the substitute specifications are also attached.

This Substitute specification is being submitted pursuant to 3/ CFK 1.52, 1.121 (b)(3), and 1.125. The statement that this Specification Contains No New Matter is required per 37 CFR 1.125(b).

Therefore, Applicant respectfully request that a timely Notice of Allowance be issued in this case.

tfully/submitted,

William L. Khoin

Applicant/Inventor

5914 Greenspring Avenue

Baltimore, Maryland 21209-3920

(443) 320-3123 - Phone (410) 504-5258 - Ph/Fax

Attachments: Substitute Specifications

Replacement Claims Revised References

	MA	AY 1 4 2014			
Office Action Summary	Application No. 13/067,917	pplication No. Applicantis)			
	Examiner FRANCISCO TSCHEN	Art Unit 1712	AIA (First Inventor to File) Status No		
- The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with th	e corresponder	oce address		
A SHORTENED STATUTORY PERIOD FOR REPLY THIS COMMUNICATION. • Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication. • If NO period for reply is specified above, the maximum statutory period w • Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	(G) In no event, however, may a reply be	timely filed	of this communication.		
Status					
Responsive to communication(s) filed on <u>4/16/2</u> A declaration(s)/affidavit(s) under 37 CFR 1.1:					
	action is non-final.				
3) An election was made by the applicant in respo	An election was made by the applicant in response to a restriction requirement set forth during the interview on				
29 May 2012; the restriction requirement and el	29 May 2012; the restriction requirement and election have been incorporated into this action.				
4) Since this application is in condition for allowant	ce except for formal matters, p	rosecution as f	to the merits is		
closed in accordance with the practice under Ex	r pane Quayle, 1935 C.D. 11,	453 O.G. 213.	_		
Disposition of Claims* 5) ☐ Claim(s) 1-22 is/are pending in the application.					
5a) Of the above claim(s) 1-19 is/are withdrawn	from consideration				
6) Claim(s) is/are allowed.	nom consideration.				
7) Claim(s) 20-22 is/are rejected.					
8) Claim(s) is/are objected to.			.		
9) Claim(s) are subject to restriction and/or election requirement.					
* If any claims have been determined allowable, you may be elig		osecution High	way program at a		
participating intellectual property office for the corresponding app	olication. For more information, ple	ease sée			
http://www.uspto.gov/patents/init_events/poh/index.isp or send a	in Inquiry to PPHfeedback@uspto	· goy.			
Application Papers					
10) The specification is objected to by the Examiner.					
11) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.					
Applicant may not request that any objection to the di					
Replacement drawing sheet(s) including the correction	n is required if the drawing(s) is o	bjected to. See 3	37 CFR 1.121(d).		
Priority under 35 U.S.C. § 119 12) ☐ Acknowledgment is made of a claim for foreign p Certified copies: a) ☐ All b) ☐ Some** c) ☐ None of the:	riority under 35 U.S.C. § 119(a	a)-(d) or (f).	·		
, <u> </u>	have been werkend	,			
		wiam Bla			
 2. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in this National Stage 					
application from the international Bureau (PCT Rule 17.2(a)).					
* See the attached detailed Office action for a list of the certified copies not received.					
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Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete

An Application for Utility Patent Filed in:

THE UNITED STATES PATENT OFFICE

On behalf of the Inventor:

William L. Robinson, Jr.

(Original)

Citizen of the United States of America

Further respectfully possessing as legal residential and postal address:

5914 Greenspring Avenue, Baltimore, Maryland 21209-3920

Method And Use Of Organic And William L. Robinson Jr. Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete

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ABSTRACT

A method is disclosed for the use of an organic admixture composed of a polysaccharide such as hydroxypropylcellulose and a monosaccharide such as ethoxylated methylglucoside and de-ionized water and metal and mineral additives e.g. electroplated nickel exide or copper coated stainless steel fibers, ultra fine coal fly ash, silica fume and carbon-based materials such as graphite and petroleum coke powder and radio stable alkali-paramagnetic metals such as Holmium or zeolites for electromagnetic; radio and microwave frequency and radioisotope shielding of building materials such as wall liners, gypsum wallboard and high performance, high strength concrete.

William L. Kobinson Jr. Method And Use Ut Urganic And July /, 2011 Mineral Admixtures For EMI And Radioactive Isotope Shielding Ut Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete

Claim of Benefit of Earlier Filing Dates

This application claims benefit of the earlier filing dates, February 16, 2010 Provisional Application No.(s) 12/545,741 and International Patent No.s-1-2008-00779 (Vietnam National Patent) and 1-2011 144133 (Japan National Patent) in the name of the present Applicant, William L. Robinson, JR. of Baltimore, Maryland and entitled "Method And Use Of Minerals Extracted From Fly Ash For EMI/RF/Microwave And X Ray Shielding And Production Of Synthetic Diamonds and Thin Diamond Film Semiconductors and Diamond Wafers and Electrical Energy Storage Systems."

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a method of increasing the tensile, flexural and compressive strengths and the EMI/RF/Microwave and radioactive isotope shielding of concrete, cement, gypsum or other pozzolan (alumina siliceous) such as fly ash using electroplated nickel oxide or copper coated stainless steel fibers, hydroxypropylcellulose, ethoxylated methylglucoside, petroleum coke powder or graphite and silica fume and non-radioactive alkali metals such as holmium and natural zeolites such as Clinoptilolite as radioactive trapping agents.

2. Discussion of the Related Art

Cement is a widely used building material, but it lacks the ability to shield electromagnetic radiation. As the environment is increasingly sensitive to electronic pollution, the ability of a building to shield electromagnetic radiation is of increasing importance.

There has been a strong demand of late for high-quality and lightweight radioactive isotope shielded building materials such as wall coverings and wall board. Stainless steel fibers reinforced concrete (SSRC), a well dispersed mixture of either short or chopped continuous or non-continuous fiber in cernent in the range of .90 vol.% has been known since the 1970s. SSRC has many outstanding mechanical characteristics

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which are unsurpassed by conventional reinforced concretes particularly, chemical stability towards strong alkaline environment and long term durability of mechanical strength are a few essential features in the development of SSRC.

Fly ash or zeolites can be substituted for cement in concrete mixes for global construction of infrastructures saving energy, disposing of waste products, protecting the environment against global warming emissions, improving the quality of concrete and reducing cost.

Ultra fine fly ash can be added to silica fume to enhance the strength of concrete

3. Statement of Need

There is a need for protecting reinforcing steel adding to the longevity of concrete structures by preventing the penetration of waterborne contaminants and chloride-laden liquids that cause the corrosion of reinforcing steel.

There is a need for increased bonding strength and contact resistivity between cement and structural steel or steel fibers.

Because of the developments in electronics technology, there is a need for EMI/RF/Microwave Interference shielding of building materials e.g. gypsum wallboard and concrete particularly in underground vaults containing power transformers and other electronics that are relevant to electric power and telecommunications and for deterring electromagnetic forms of spying.

There is a need for an environmentally friendly way to recycle ashes produced from the industrial combustion of coal and petroleum and the minerals and metals contained therein e.g. selenium, vanadium, nickel and holmium

There is definitely a need for a way to trap radioactive nuclear fission products (isotopes) e.g. ¹³⁷Cs and ⁹⁰Sr accidentally or intentionally released into the environment.

General Background

Electric utilities in the United States generate over 100 million tons of petroleum coke ash and coal fly ash as a by-product each year. Fly ash in particular is typically disposed of in landfills. Course fly ash ground to approximately 3.8 µm can produce high strength concrete and 25% cement replacement gave the highest compressive strength (100.3)

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MPa). A replacement of 25% cement will result in a 27% reduction in greenhouse gases produced from production of cement (680 Kg/ton of cement).

The cement industry is responsible for producing 5% of global CO₂ emissions; 60% due to decarbonization of non-renewable materials such as limestone and 40% due to heating cement kilns to 1500 °C using non-renewable fossil fuels.

Adding .90 vol.% stainless steel fibers (by weight) to cement improves strength by 23% equal to 2-3 times that of non-reinforced concrete. The dominant mechanisms of EM/RF/Microwave shielding for micron size (>100 nm) steel fibers is absorption. Nickel filaments of diameter 0.4 µm, as made by electroplating 0.1 µm diameter carbon filaments with nickel, have been shown to be particularly effective. They are known as nickel filaments because they are mostly nickel rather than carbon. A shielding effectiveness of 87 dB at 1 GHz has been attained in a polymer-matrix composite containing just 7 vol.% nickel filaments. Nickel is more attractive than copper, partly due to its superior oxidation resistance.

Shielding of 40dB or more in the magnetic field ranging from 150 kHz to 16 MHz is needed for a 99 % EMI block. This degree of shielding effectiveness is sufficient to for the construction of electromagnetic interference structures.

Binding Properties of Calcium Hydroxide or Hydrated Lime (CaCO₃) with HPC. Calcium hydroxide or hydrated lime is the product of the hydration of lime and water:

$Ca(OH)_2 \leftarrow CaO + H_2O$

Lime is a soft, white amorphous powder with alkaline or slightly bitter taste. It has been shown that lime is solubilised in the presence of sugars and it has been observed in set Portland cements as hexagonal plate crystals (Lea, 1970). Lime reacts with carbon dioxide (CO₂) to form calcium carbonate (CaCO₃). This reaction which takes place in the presence of moisture is the cause of hardening of high calcium lime mortars.

Binding Properties of HPC with Steel Fiber and Cement

HPC and Ethoxylated methyl glucoside (moisture barrier) binds together at the 1-3' C-Terminal Domain. How does HPC bind to calcium in concrete? In the presence of water William L. Kobinson Jr. Method And Use Of Organic And July 1, 2011
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calcium located at the N-Terminal Cellulose Binding Domain in HPC will bind to calcium bonds at the 1-4' β calcium bonding sites in cement.

The use of hydroxypropylcellulose or methylcellulose (0.4% to 0.8% by weight of cement) as an admixture in cement paste or concrete was found to increase the shear bond strength with steel reinforcing bar and steel fiber. The bond strength increased with increasing hydroxypropylcellulose or methylcellulose amounts. The contact electrical resistivity between cement and fiber or between concrete and reinforcing bar was not changed by addition of hydroxypropyl ellulose or methylcellulose.

Trapping of Radioactive Fission Products (Isotopes) Using Non-Radioactive Stable Metallic Elements

Holmium (hoolmiəm/ HOHL-mee-əm) is a chemical element with the symbol Ho and atomic number 67. Part of the lanthanide series, holmium is a relatively soft and malleable silvery-white metallic element, which is stable in dry air at room temperature. A rare earth metal, it is found in the minerals monazite and gadolinite. Holmium has the highest magnetic strength of any element and therefore is used for the polepieces of the strongest static magnets. Because holmium strongly absorbs nuclear fission-bred neutrons, it is also used in nuclear control rods.

Zeolite chemistry is the distribution of silicon and aluminum atoms among the T sites. According to Lowensteins' rule, Al-O-Al linkages in zeolitic frameworks are forbidden. As a result, all aluminate tetrahedra must be linked to four silicate tetrahedra, and in general this is proved to be the case, but recent investigations into zeolites synthesized at high temperatures have shown non-Lowenstein distributions in sodalite materials. Aluminum ions are formed by losing three (3) electrons making it neutrally charged. The combination of negatively charged silica and aluminum produces negatively charged ions that will absorb electromagnetic waves. Negative ions are a type of antioxidant present in nature that is reported to react with and break down toxins in the bloodstream.

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The range of Si/Al ratios varies between zeolites. ZSM-5 is a high silicate zeolite, whereas zeolite X/Y can be prepared in high silicate forms, or high aluminate forms, but is usually produced with a Si/Al ratio close to unity with a fully ordered Si-Al distribution over the tetrahedral sites, in accordance with Lowenstein's rule. The inclusion of aluminium into the zeolite structure has two major effects: An increase in the net negative charge - which are neutralized from protons hydrogen bonded to the lone pairs of the bridging oxygens. These acidic sites play a significant role in the zeolite catalytic activity. the materials become hydrophilic. Zeolites are not only influenced by pH but also they are capable of affecting the solution pH. It was found out that clinoptilolite tends to neutralize the solution by acting as H+ acceptor or H+ donor (Rivera et al., 2000; Ersoy and Çelik, 2002). The pH of solution can also affect removal efficiency by affecting the integrity of zeolite. Clinoptilolite is known to partially degrade and lose its ion exchange capacity in alkaline media (Mier et al., 2001). Also, clinoptilolite structure breaks down in highly acidic solutions (Tsitsishvili, 1992). On the other hand, as the solution pH increases, the number of negatively charged sites increases (Benhammou et al., 2005), Clinoptilolitedeionized water suspensions at neutral, acidic and basic pH values exhibited a buffer pH around 9±1. This was also observed by Trgo and Peric (2003) and at all initial pH's examined (2-11) in deionized water-clinoptilolite suspensions pH became stable between 8 and 9. Active adsorbent materials such as zeolites, carbon molecular sieve (CMS), alumina and other porous adsorbent materials and lanthanides such as holmium can be coated onto glass fiber paper. In order to bind adsorbent particles with glass fibers and to have uniform distribution of adsorbent particles, many ingredients and additives such as retention binders may also be added into the coating solution. The final non-woven-fabric sheet (paper) will be comprised of the retention aid, the active adsorbent materials and the organic polymer. A retention aid is any material that enhances the retention of the glass fibers in the wall liner and adsorbents. The retention aid binders such as Alcoa HiQ-40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the glass fibers in the paper. Through this process, adsorbent particles tend also to be encapsulated by the boehmite binder material. Absorbent materials such as zeolites

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adsorbent material which includes but is not limited to zeolite type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, chabazite, offretite, erionite, mordenite, gmelinite, mazzite, clinotilolite and mixtures of these. Other adsorbents such as activated alumina sol, silica gel, carbon molecular sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide metals such as holmium and erbium can also be used.

SUMMARY OF THE INVENTION

Objects of the Invention

The present invention generally relates to a method of producing reinforced blended cement (e.g clinker, synthetic gypsum and petroleum coke powder), plus stainless steel fiber, fly ash and HPC to make high performance concrete for building materials that has increased density, bonding, tensile, flexural and compressive strength.

The present invention also relates to a new application, namely the use of petroleum coke powder and steel fibers as an electrically conductive filler in concrete for electromagnetic interference (EMI) shielding. EMI shielding is in critical demand due to the interference of wireless (particularly radio frequency) devices with digital devices and the increasing sensitivity of electronic devices. Shielding is particularly needed for underground vaults containing transformers and other electronics that are relevant to electric power and telecommunication. It is also needed for deterring electromagnetic forms of spying. The high shielding effectiveness of cement paste containing steel fibers is consistent with its low electrical resistivity. Stainless steel fibers (8 mm diameter) 0.36 vol.% has very low resistivity. The resistivity is 40Ω cm at 0.78 vol.% steel fibers (8 mm diameter). Hence, steel fibers are effective for passing current. Steel is also much more conductive than carbon. The high conductivity makes steel fibers outstanding for shielding. In spite of the large diameter compared to other shielding materials. In fact, steel fibers (8 mm diameter) at .90 vol% reached 71 dB (1.5 GHz).

The highest two values of EMI consisted of shielding effectiveness previously reported in cement-matrix composites are 40 dB, as attained in cement paste containing 1.5 vol.%

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carbon filaments and 70 dB, attained in cement paste containing 0.72 vol.% stainless steel fibers of diameter 8 mm and length 6 mm.

The present invention also relates to a new application, namely the use of alkali paramagnetic materials such as Holmium or zeolites (natural or synthetic) dissolved in de-ionized water then coated onto a glass fiber substrates (paper) along with an organic washcoated polymer and used to cover building materials such as wall board and ceiling tiles and panels or as wall liner (covering) for absorption of nuclear fission products such as radioactive isotopes of cesium and strontium.

Principles in Accordance with the Present Invention

In achievement of the above objects it is suggested that concrete will be reinforced with steel fibers and coal fly ash and the addition of an organic (polysaccharide) admixture e.g. methylcellulose of the invention.

It is also suggested that EMI/RF/Microwave shielding of concrete can be achieved by cross linking or combining cellulose fibers with deflective or absorptive materials such as fly ash containing silica fume (< 6 vol.%), coke powder (1.02 vol.%), nickel plated carbon filaments (7 vol.%) or copper coated stainless steel fibers (.78 vol. %). It is specifically suggested that EMI/RF/Microwave shielded structural and non-structural building materials can be used for lateral and distress guidance systems in automated highways, bridge pavements and levees.

It is also specifically suggested that a stable trapping agent containing a non-radioactive isotope of the fission product may be Holmium (Ho₂O₂) or negatively charged zeolites such as Clinoptilolite and chabazite, resulting from the replacement of silicon by aluminum in the tetrahedra, interfere positively on the mechanisms of ionic exchanges. The foregoing discussion discloses and describes merely exemplary embodiments of the present invention. One skilled in the art will readily recognize from such discussion and claims that various changes, modifications and variations can be made therein without departing from the spirit and scope of the invention as defined in the following claims.

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What is claimed is:

Claims 1-19 - Canceled

Claims 20-22 – (Substituted)

20. A Method of producing building materials such as gypsum waliboard, mineral fiver acoustic coiling tiles and panels, PVC luminated gypsum coiling tiles, fiberglass coiling and acoustic panels and coiling tiles and wall liners containing absorbent materials such as Clinoptilolite (Zeolite) as a trapping agent dissolved in de-ionized water along with a retention aid coated (.001" .002") onto weven or nonwoven glass fiber paper comprising:

- a) the step of mixing radiation absorbing materials 60 80% clinoptilolite (Zeolite) and correspondingly 40 20% (bochmite) binder in do ionized water (5:1 ratio) at pH 8-9, specifically 8.5-8.9 at 28-30 °C, specifically 28.8 °C, for two (2) minutes, then.
- b) the step of applying (apraying or dipping) or coating the absorbing material onto the glass fiber paper substrate, then,
- e) the step of applying (coating) an organic polymer over the radiation absorbing coated material (glass fiber paper) containing: Hydroxypropylcollulose (HPC) + Methyl Gluceth -20 (EMG) 60%:40% (ratio) in do ionized water (20 % vol.wt).

21. Absorbent materials according to Claim 20, such as zeolite adsorbent materials includes but are not limited to zeolite type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC 2, ZSM-18, ZSM-3, ZSM-11, .beta., L, chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these.

22. I he retention aid binders according to Claim 20, such as BASt (Alcoa) Hit 40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the glass tibers in the paper. I brough this process, adsorbent particles tend also to be encapsulated by the bochmite binder material.

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Substituted Claim 20. "A method for producing building materials, the building materials selected from the group consisting of gypsum wallboard, mineral fiber acoustic ceiling tiles, mineral fiber acoustic panels, PVC laminated gypsum ceiling tiles, fiber glass ceiling panels, fiber glass acoustic panels, ceiling tiles and wall liners; the building materials containing a woven or nonwoven glass fiber paper substrate coated with an aqueous composition comprising a zeolite radiation absorbent acting as a trapping agent and a retention aid binder, the aqueous composition applied at a thickness of .001 in -.002 in., the method comprising the steps of:

- a) mixing at a ratio of 60-80% radiation absorbing zeolite and 40-20% retention aid binder in DI water at a pH 8-9 and a temperature of 28-30 deg. C for two minutes to create an aqueous composition, then;
- b) applying the aqueous composition by spraying, dipping or coating onto the glass fiber paper substrate, then,
- c) coating an organic composition over the aqueous composition, the organic composition comprising: hydroxypropylcellulose (HPC) and Methyl Gluceth-20 (EMG) in 60-40% ratio (HPC:EMG) in DI water (20% vol)."

Substituted Claim 21. "The method of producing building materials according to Claim 20, in which the zeolite radiation absorbent is selected from the group consisting of zeolites type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L. charbazite, offretite, erionite, mordenite gmelinite, mazzite, clinoptilolite and mixture of these."

Substituted Claim 22. "The method of producing building materials according to Claim 20, in which the retention aid binder is selected from the group consisting of boehmite, Alucol, or Alumina Sol are added to the slurry to bind the absorbent particles to the glass fibers in the paper."

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References:

- U.S. Patent No. 6/524,846, U.S. Patent Application No. 11/110,923 and U.S.
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Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete

An Application for Utility Patent Filed in:

THE UNITED STATES PATENT OFFICE

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William L. Robinson Jr. Method And Use Of Organic And July 7, 2011
Mineral Admixtures For EMI And Radioactive Isotope Shielding
Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And
Electrically Conductive Or Resistive, High Performance, High Strength Concrete

1.

BACKGROUND OF THE INVENTION

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1. Field of the Invention

- 5 This invention relates to a method of increasing the tensile, flexural and compressive
- 6 strengths and the EMI/RF/Microwave and radioactive isotope shielding of concrete,
- 7 cement, gypsum or other pozzolan (alumina siliceous) such as fly ash using electroplated
- 8 nickel oxide or copper coated stainless steel fibers, hydroxypropylcellulose, ethoxylated
- 9 methylglucoside, petroleum coke powder or graphite and silica fume and non-radioactive
- 10 alkali metals such as holmium and natural zeolites such as Clinoptilolite as radioactive
- 11 trapping agents.

12 2. Discussion of the Related Art

- 13 Cement is a widely used building material, but it lacks the ability to shield
- 14 electromagnetic radiation. As the environment is increasingly sensitive to electronic
- 15 pollution, the ability of a building to shield electromagnetic radiation is of increasing
- 16 importance.
- 17 There has been a strong demand of late for high-quality and lightweight radioactive
- 18 isotope shielded building materials such as wall coverings and wallboard.
- 19 Stainless steel fibers reinforced concrete (SSRC), a well dispersed mixture of either short
- 20 or chopped continuous or non-continuous fiber in cement in the range of .90 vol.% has
- 21 been known since the 1970s. SSRC has many outstanding mechanical characteristics
- 22 which are unsurpassed by conventional reinforced concretes particularly, chemical
- 23 stability towards strong alkaline environment and long term durability of mechanical
- 24 strength are a few essential features in the development of SSRC.
- 25 Fly ash can be substituted for cement in concrete mixes for global construction of
- 26 infrastructures saving energy, disposing of waste products, protecting the environment
- 27 against global warming emissions, improving the quality of concrete and reducing cost.
- 28 Ultra fine fly ash can be added to silica fume to enhance the strength of concrete.
- 29 3. Statement of Need

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- 2 There is a need for protecting reinforcing steel adding to the longevity of concrete
- 3 structures by preventing the penetration of waterborne contaminants and chloride-laden
- 4 liquids that cause the corrosion of reinforcing steel.
- 5 There is a need for increased bonding strength and contact resistivity between cement and
- 6 structural steel or steel fibers.
- 7 Because of the developments in electronics technology, there is a need for
- 8 EMI/RF/Microwave Interference shielding of building materials e.g. gypsum wallboard
- 9 and concrete particularly in underground vaults containing power transformers and other
- 10 electronics that are relevant to electric power and telecommunications and for deterring
- 11 electromagnetic forms of spying.
- 12 There is a need for an environmentally friendly way to recycle ashes produced from the
- 13 industrial combustion of coal and petroleum and the minerals and metals contained
- 14 therein e.g. selenium, vanadium, nickel and holmium.
- 15 There is definitely a need for a way to trap radioactive nuclear fission products (isotopes)
- e.g. ¹³⁷Cs and ⁹⁰Sr accidentally or intentionally released into the environment.

17 General Background

- 18 Electric utilities in the United States generate over 100 million tons of petroleum coke
- ash and coal fly ash as a by-product each year. Fly ash in particular is typically disposed
- of in landfills. Course fly ash ground to approximately 3.8 µm can produce high strength
- 21 concrete and 25% cement replacement gave the highest compressive strength (100.3
- 22 MPa). A replacement of 25% cement will result in a 27% reduction in greenhouse gases
- 23 produced from production of cement (680 Kg/ton of cement).
- 24 The cement industry is responsible for producing 5% of global CO₂ emissions; 60% due
- 25 to decarbonization of non-renewable materials such as limestone and 40% due to heating
- 26 cement kilns to 1500 °C using non-renewable fossil fuels.
- Adding .90 vol.% stainless steel fibers (by weight) to cement improves strength by 23%
- 28 equal to 2-3 times that of non-reinforced concrete. The dominant mechanisms of
- 29 EM/RF/Microwave shielding for micron size (>100 nm) steel fibers is absorption.

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2	Nickel filaments of diameter 0.4 μm , as made by electroplating 0.1 μm diameter carbon
3	filaments with nickel, have been shown to be particularly effective. They are known as
4	nickel filaments because they are mostly nickel rather than carbon. A shielding
5	effectiveness of 87 dB at 1 GHz has been attained in a polymer-matrix composite
6	containing just 7 vol.% nickel filaments. Nickel is more attractive than copper, partly
7	due to its superior oxidation resistance.
8	Shielding of 40dB or more in the magnetic field ranging from 150 kHz to 16 MHz is
9	needed for a 99 % EMI block. This degree of shielding effectiveness is sufficient to for
10	the construction of electromagnetic interference structures.
1 I	Binding Properties of Calcium Hydroxide or Hydrated Lime (CaCO ₃) with HPC.
12	Calcium hydroxide or hydrated lime is the product of the hydration of lime and water:
13	$Ca(OH)_2 < = = = > CaO + H_2O$
14	Lime is a soft, white amorphous powder with alkaline or slightly bitter taste. It has been
15	shown that lime is solubilised in the presence of sugars and it has been observed in set
16	Portland cements as hexagonal plate crystals (Lea, 1970). Lime reacts with carbon
17	dioxide (CO ₂) to form calcium carbonate (CaCO ₃). This reaction which takes place in the
18	presence of moisture is the cause of hardening of high calcium lime mortars.
19	Binding Properties of HPC with Steel Fiber and Cement
20	HPC and Ethoxylated methyl glucoside (moisture barrier) binds together at the 1-3' C-
21	Terminal Domain. How does HPC bind to calcium in concrete? In the presence of water
22	calcium located at the N-Terminal Cellulose Binding Domain in HPC will bind to
23	calcium bonds at the 1-4' β calcium bonding sites in cement.
24	The use of hydroxypropylcellulose or methylcellulose (0.4% to 0.8% by weight of
25	cement) as an admixture in cement paste or concrete was found to increase the shear
26	bond strength with steel reinforcing bar and steel fiber. The bond strength increased with
27	increasing hydroxypropylcellulose or methylcellulose amounts. The contact electrical
28	resistivity between cement and fiber or between concrete and reinforcing bar was not
29	changed by addition of hydroxypropylcellulose or methylcellulose.

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1 2 Trapping of Radioactive Fission Products (Isotopes) Using Non-Radioactive Stable 3 **Metallic Elements** 4 Holmium (houlmism/ HOHL-mee-sm) is a chemical element with the symbol Ho and 5 atomic number 67. Part of the lanthanide series, holmium is a relatively soft and 6 malleable silvery-white metallic element, which is stable in dry air at room temperature. 7 A rare earth metal, it is found in the minerals monazite and gadolinite. Holmium has the 8 highest magnetic strength of any element and therefore is used for the pole pieces of the 9 strongest static magnets. Because holmium strongly absorbs nuclear fission-bred 10 neutrons, it is also used in nuclear control rods. 11 **Zeolite** chemistry is the distribution of silicon and aluminum atoms among the T sites. 12 According to Lowenstein's Rule, AL-O-AL linkages in zeolitic frameworks are 13 Forbidden. As a result, all aluminate tetrahedra must be linked to four silicate 14 tetrahedra, and in general this is proved to be the case, but recent investigations into 15 Zeolites synthesized at high temperatures have shown non-Lowenstein distributions in 16 Sodalite materials. Aluminum ions are formed by losing three (3) electrons making it 17 neutrally charged. The combination of negatively charged silica and aluminum 18 produces negatively charged ions that will absorb electromagnetic waves. Negative 19 ions are a type of antioxidant present in nature that is reported to react with and break 20 down toxins in the bloodstream. 21 The range of Si/Al ratios varies between zeolites. ZSM-5 is a high silicate zeolite, 22 whereas zeolite X/Y can be prepared in high silicate forms, or high aluminate forms, but 23 is usually produced with a Si/Al ratio close to unity with a fully ordered Si-Al 24 distribution over the tetrahedral sites, in accordance with Lowenstein's rule. 25 The inclusion of aluminum into the zeolite structure has two major effects: An increase in 26 the net negative charge - which are neutralized from protons hydrogen bonded to the lone 27 pairs of the bridging oxygens. These acidic sites play a significant role in the zeolite 28 catalytic activity. The materials become hydrophilic. Zeolites are not only influenced by 29 pH but also they are capable of affecting the solution pH. It was found out that clinoptilolite

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holmium and erbium can also be used.

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2 tends to neutralize the solution by acting as H+acceptor or H+donor (Rivera et al., 2000; 3 Ersoy and Çelik, 2002). The pH of solution can also affect removal efficiency by affecting 4 the integrity of zeolite. Clinoptilolite is known to partially degrade and lose its ion exchange 5 capacity in alkaline media (Mier et al., 2001). Also, clinoptilolite structure breaks down in 6 highly acidic solutions (Tsitsishvili, 1992). On the other hand, as the solution pH increases, 7 the number of negatively charged sites increases (Benhammou et al., 2005), Clinoptilolite-8 deionized water suspensions at neutral, acidic and basic pH values exhibited a buffer pH 9 around 9±1. This was also observed by Trgo and Peric (2003) and at all initial pH's 10 examined (2-11) in deionized water-clinoptilolite suspensions pH became stable between 8 11 and 9. Active adsorbent materials such as zeolites, carbon molecular sieve (CMS), 12 alumina and other porous adsorbent materials and lanthanides such as holmium can be 13 coated onto glass fiber paper. In order to bind adsorbent particles with glass fibers and to 14 have uniform distribution of adsorbent particles, many ingredients and additives such as retention binders may also be added into the coating solution. The final non-woven-fabric 15 16 sheet (paper) will be comprised of the retention aid, the active adsorbent materials and 17 the organic polymer. A retention aid is any material that enhances the retention of the 18 glass fibers in the wall liner and adsorbents. The retention aid binders such as Alcoa HiO-19 40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the 20 glass fibers in the paper. Through this process, adsorbent particles tend also to be 21 encapsulated by the boehmite binder material. Absorbent materials such as zeolites 22 adsorbent material which includes but is not limited to zeolite type X, zeolite type A, 23 zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, 24 chabazite, offretite, erionite, mordenite, gmelinite, mazzite, clinoptilolite and mixtures of 25 these. Other adsorbents such as activated alumina sol, silica gel, carbon molecular sieves, 26 amorphous aluminosilicate, clay materials and paramagnetic lanthanide metals such as

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SUMMARY OF THE INVENTION

3	Objects of the Invention
4	The present invention generally relates to a method of producing using a single and blood

esent invention generally relates to a method of producing reinforced blended

5 cement (e.g clinker, synthetic gypsum and petroleum coke powder), plus stainless steel

6 fiber, fly ash and HPC to make high performance concrete for building materials that has

7 increased density, bonding, tensile, flexural and compressive strength.

8 The present invention also relates to a new application, namely the use of petroleum coke

9 powder and steel fibers as an electrically conductive filler in concrete for electromagnetic

10 interference (EMI) shielding. EMI shielding is in critical demand due to the interference

of wireless (particularly radio frequency) devices with digital devices and the increasing 11

12 sensitivity of electronic devices. Shielding is particularly needed for underground vaults

containing transformers and other electronics that are relevant to electric power and 13

14 telecommunication. It is also needed for deterring electromagnetic forms of spying.

15 The high shielding effectiveness of cement paste containing steel fibers is consistent with

16 its low electrical resistivity. Stainless steel fibers (8 mm diameter) 0.36 vol.% has very

17 low resistivity. The resistivity is 40 Ω cm at 0.78 vol.% steel fibers (8 mm diameter).

18 Hence, steel fibers are effective for passing current. Steel is also much more conductive

19 than carbon. The high conductivity makes steel fibers outstanding for shielding. In spite

20 of the large diameter compared to other shielding materials. In fact, steel fibers (8 mm

21 diameter) at .90 vol% reached 71 dB (1.5 GHz).

22 The highest two values of EMI consisted of shielding effectiveness previously reported in

23 cement-matrix composites are 40 dB, as attained in cement paste containing 1.5 vol.%

carbon filaments and 70 dB, attained in cement paste containing 0.72 vol.% stainless 24

25 steel fibers of diameter 8 mm and length 6 mm.

26 The present invention also relates to a new application, namely the use of alkali

27 paramagnetic materials such as Holmium or zeolites (natural or synthetic) dissolved in

28 de-ionized water then coated onto a glass fiber substrates (paper) along with an organic

wash coated polymer and used to cover building materials such as wall board and ceiling 29

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2	tiles and panels or as wall liner (covering) for absorption of nuclear fission products such
3	as radioactive isotopes of cesium and strontium.
4	Principles in Accordance with the Present Invention
5	In achievement of the above objects it is suggested that concrete will be reinforced with
6	steel fibers and coal fly ash and the addition of an organic (polysaccharide) admixture
7	e.g. methylcellulose of the invention.
8	It is also suggested that EMI/RF/Microwave shielding of concrete can be achieved by
9	cross linking or combining cellulose fibers with deflective or absorptive materials such as
10	fly ash containing silica fume (< 6 vol.%), coke powder (1.02 vol.%), nickel plated
11	carbon filaments (7 vol.%) or copper coated stainless steel fibers (.78 vol. %).
12	It is specifically suggested that EMI/RF/Microwave shielded structural and non-structural
13	building materials can be used for lateral and distress guidance systems in automated
14	highways, bridge pavements and levees

15 It is also specifically suggested that a stable trapping agent containing a non-radioactive 16 isotope of the fission product may be negatively charged zeolites such as Clinoptilolite 17 and chabazite, resulting from the replacement of silicon by aluminum in the tetrahedra, 18 interfere positively on the mechanisms of ionic exchanges.

The foregoing discussion discloses and describes merely exemplary embodiments of the present invention. One skilled in the art will readily recognize from such discussion and claims that various changes, modifications and variations can be made therein without departing from the spirit and scope of the invention as defined in the following claims.

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2 What is claimed is: 3 4 Claims 1-19 - Canceled 5 б Claims 20-22 – (Replaced) 7 20. A Method of producing building materials such as gypoum wallboard, mineral fiber Ŕ 9 acoustic ceiling tiles and panels, PVC laminated gypsum ceiling tiles, fiberglass ceiling İÚ and accustic panels and ceiling tiles and wall liners containing absorbent materials such 11 as Clinoptilolite (Zeolite) as a trapping agent dissolved in de ionized water along with a 12 retention aid conted (.001"-.002") onto weven or nonwoven glass fiber paper comprising: 13 į4 a) the step of mixing radiation absorbing materials -- 60 -- 80% elinoptilelite (Zoolite) 15 and correspondingly 40 20% (bookmite) binder in de-ionized water (5:1 ratio) at pH 16 8-9, specifically 8.5-8.9 at 28-30 °C, specifically 28.8 °C, for two (2) minutes. 17 then. İŚ b) the step of applying (spraying or dipping) or coating the absorbing material onto 19 the glass fiber paper substrate, then, 2Ù e) - the step of applying (coating) an organic polymer over the radiation absorbing 21 coated material (glass fiber paper) containing: Hydroxypropylcellulose (HPC) + 22 Methyl Gluceth 20 (EMG) - 60%:40% (ratio) in do ionized water (20 % vol.wt). 21. Absorbent materials according to Ciaim 20, such as zoolite adsorbent materials 23 24 includes but are not limited to zeolite type X, zeolite type A, zeolite type Y, ZSM-3, 25 EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, beta., L. chabazite, offiretite, orionite. 26 mordonite, gmelinite, mazzite, and mixtures of these. 22. The retention aid binders according to Claim 20, such as BASF (Aicon) Hit 40, 27 28 Alucel or Alumina Sol are added to the slurry to bind the adsorbent particles to the glass 29 fibers in the paper. Through this process, adsorbent particles tend also to be encapsulated 30 by the bochmite binder-material. 31 32 33 34 35 36 37 38 39 40 41

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2	What is Claimed is:
3	Replacement Claim 20. "A method for producing building materials, the building
4	materials selected from the group consisting of gypsum wallboard, mineral fiber acousti
5	ceiling tiles, mineral fiber acoustic panels, PVC laminated gypsum ceiling tiles, fiber
6	glass ceiling panels, fiber glass acoustic panels, ceiling tiles and wall liners; the building
7	materials containing a woven or nonwoven glass fiber paper substrate coated with an
8	aqueous composition comprising a zeolite radiation absorbent acting as a trapping agent
9	and a retention aid binder, the aqueous composition applied at a thickness of .001 in -
10	.002 in., the method comprising the steps of:
11	a) mixing at a ratio of 60-80% radiation absorbing zeolite and 40-20% retention
12	aid binder in DI water at a pH 8-9 and a temperature of 28-30 deg. C for two
13	minutes to create an aqueous composition, then;
14	b) applying the aqueous composition by spraying, dipping or coating onto the
15	glass fiber paper substrate, then,
16	c) coating an organic composition over the aqueous composition, the organic
17	composition comprising: hydroxypropylcellulose (HPC) and Methyl Gluceth-20
18	(EMG) in 60-40% ratio (HPC:EMG) in DI water (20% vol)."
19	Replacement Claim 21. "The method of producing building materials according to
20	Claim 20, in which the zeolite radiation absorbent is selected from the group consisting
21	of zeolites type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5,
22	ZSM-5, ZSM-11, .beta., L. charbazite, offretite, erionite, mordenite gmelinite, mazzite,
23	clinoptilolite and TiO2 and mixtures of these."
24	Replacement Claim 22. "The method of producing building materials according to
25	Claim 20, in which the retention aid binder is selected from the group consisting of
26	boehmite, Alucol, or Alumina Sol are added to the slurry to bind the absorbent particles
27	to the glass fibers in the paper."
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29 30	
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- 31 Microporous and Mesoporous Materials, 40, 173 179.

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Application Number 13/067,917 TRANSMITTAL Filing Date July 7, 2011 **FORM** First Named Inventor ROBINSON, WILLIAM L., Jr. Art Unit Examiner Name Francisco Tschen (to be used for all correspondence after initial filing) **Attorney Docket Number** Total Number of Pages in This Submission

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1	
2	ABSTRACT
3 4	A method is disclosed for the use of an organic admixture composed of a polysaccharide
5	such as hydroxypropylcellulose and a monosaccharide such as ethoxylated
6	methylglucoside and de-ionized water and minerals such as zeolites for electromagnetic;
7	radio and microwave frequency and radioisotope shielding of building materials such as
8	wall liners, gypsum wallboard and high performance, high strength concrete.
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UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
13/067,917	07/07/2011	William L. Robinson JR.		8019	
William L. Rob	7590 05/07/2010 inson, Jr.	EXAMINER			
5914 Greenspri	ng Avenue		TSCHEN, FRANCISCO W		
Baltimore, MD	21209		ART UNIT	PAPER NUMBER	
			1712		
			MAIL DATE	DELIVERY MODE	
			05/07/2014	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Examiner-Initiated Interview Summary	13/067,917	ROBINSON, WILLIAM L.				
Examiner-initiated interview Summary	Examiner	Art Unit				
	FRANCISCO TSCHEN	1712				
All participants (applicant, applicant's representative, PTO	personnel):					
(1) <u>FRANCISCO TSCHEN</u> .	(3)					
(2) <u>WILLIAM ROBINSON</u> .	(4)					
Date of Interview: 29 April 2014.						
Type: X Telephonic Video Conference Personal [copy given to: Applicant	☐ applicant's representative]					
Exhibit shown or demonstration conducted: Yes If Yes, brief description:	⊠ No.					
Issues Discussed						
Claim(s) discussed: <u>20</u> .						
Identification of prior art discussed: <u>n/a</u> .						
Substance of Interview (For each issue discussed, provide a detailed description and indicate if agreement reference or a portion thereof, claim interpretation, proposed amendments, arguments.)		dentification or clarific	cation of a			
Applicant submitted a proposed amendment to Claim 20 honot be entered because it raises new matter issues which in of a low molecular weight (20mol) synergistic monosacchartitanium dioxide.	nclude the following: a) air filtra	ntion media and b	o)selection			
Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.						
Examiner recordation instructions : Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.						
/FRANCISCO TSCHEN/ Examiner, Art Unit 1712						

Application No.

Applicant(s)

	Application No. 13/067,917	Applicant(s) ROBINSON,	
Office Action Summary	Examiner FRANCISCO TSCHEN	Art Unit 1712	AIA (First Inventor to File) Status No
The MAILING DATE of this communication app	ears on the cover sheet with the c	orrespondenc	ce address
Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period w - Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	36(a). In no event, however, may a reply be tin rill apply and will expire SIX (6) MONTHS from cause the application to become ABANDONE	nely filed the mailing date of D (35 U.S.C. § 133	this communication.
Status			
1) Responsive to communication(s) filed on 4/16/. A declaration(s)/affidavit(s) under 37 CFR 1.1			
 2a) ☐ This action is FINAL. 2b) ☑ This 3) ☑ An election was made by the applicant in responsible to the election was made by the	lection have been incorporated ince except for formal matters, pro	nto this action secution as to	- I.
Disposition of Claims*			
5) Claim(s) 1-22 is/are pending in the application. 5a) Of the above claim(s) 1-19 is/are withdrawn 6) Claim(s) is/are allowed. 7) Claim(s) 20-22 is/are rejected. 8) Claim(s) is/are objected to. 9) Claim(s) are subject to restriction and/or if any claims have been determined allowable, you may be eliparticipating intellectual property office for the corresponding apartic://www.uspto.gov/patents/init_events/pph/index.jsp or send Application Papers 10) The specification is objected to by the Examined 11) The drawing(s) filed on is/are: a) access applicant may not request that any objection to the organization.	relection requirement. Igible to benefit from the Patent Pro epplication. For more information, pleas an inquiry to <u>PPHfeedback@uspto.co</u> r. In the property of the least o	ase see nov. Examiner. e 37 CFR 1.85(a).
Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign Certified copies: a) All b) Some** c) None of the: 1. Certified copies of the priority document 2. Certified copies of the priority document 3. Copies of the certified copies of the priority application from the International Bureau	priority under 35 U.S.C. § 119(a) s have been received. s have been received in Applicat rity documents have been receiv	i-(d) or (f).	
application from the international Bureau * See the attached detailed Office action for a list of the certifie	` '''		
Attachment(s)	_		
 Notice of References Cited (PTO-892) Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/S Paper No(s)/Mail Date 	3) 🔀 Interview Summary Paper No(s)/Mail Da BB/08b) 4) 🔲 Other:		

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1. The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Election/Restrictions

- 2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14, drawn to a method, classified in class 106, subclass 618.
 - II. Claims 15-19, drawn to a composition, classified in class 588, subclass1+.
- III. Claims 20-22, drawn to a method, classified in class 427, subclass 402. The inventions are distinct, each from the other because of the following reasons:
- 3. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the radioactive trapping agent can be used in a materially different process such as a process that produces an adsorbent carrier for use in electronic applications (i.e. disk drives).
- 4. Inventions II and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially

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different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the radioactive trapping agent can be used in a materially different process such as a process that produces an adsorbent carrier for use in electronic applications (i.e. disk drives).

Page 3

5. Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as use to reinforce structural components in roads. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

6. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above

and there would be a serious search and/or examination burden if restriction were not required because at least the following reason(s) apply:

- --the inventions have acquired a separate status in the art in view of their different classification
- --the inventions have acquired a separate status in the art due to their recognized divergent subject matter
- --the inventions require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search strategies or search queries).

Applicant is advised that the reply to this requirement to be complete <u>must</u> include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

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Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

- 7. During a telephone conversation with William Robinson on 05/29/2012 a provisional election was made without traverse to prosecute the invention of Group III, claims 20-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
- 8. The examiner has required restriction between product or apparatus claims and process claims. Where applicant elects claims directed to the product/apparatus, and all product/apparatus claims are subsequently found allowable, withdrawn process claims that include all the limitations of the allowable product/apparatus claims should be considered for rejoinder. All claims directed to a nonelected process invention must include all the limitations of an allowable product/apparatus claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product/apparatus claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37

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CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product/apparatus are found allowable, an otherwise proper restriction requirement between product/apparatus claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product/apparatus claim will not be rejoined. See MPEP § 821.04.

Additionally, in order for rejoinder to occur, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product/apparatus claims. Failure to do so may result in no rejoinder. Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

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Information Disclosure Statement

9. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

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Specification

10. The amendment filed 09/15/2011 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Claim of Benefit to Earlier Filing Dates Section see Page 1 lines 1-9.

Applicant is required to cancel the new matter in the reply to this Office Action.

- 11. The substitute specifications filed 8/12/2011 and 9/15/2011 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: the substitute specification includes new matter as shown above, and the substitute specification submitted does not show markings showing all the changes relative to the immediate prior version specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. An accompanying clean version (without markings) must also be supplied.
- 12. When submitting the new substitute specification, applicant should only change the spacing for the specification, no new matter may be added. As with the previous

submission, the "references" section should be made part of the specification and not included with the claims as originally filed.

Claim Objections

- 13. The claims are objected to because the lines are crowded too closely together, making reading difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).
- 14. Claims 21 and 22 contain periods leading to multiple sentences inside the claim.

 Per MPEP 608.01(m): Each claim begins with a capital letter and ends with a period.

 Periods may not be used elsewhere in the claims except for abbreviations.

Claim Rejections - 35 USC § 112

- The following is a quotation of 35 U.S.C. 112(b):
 (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.
 - The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph: The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 16. Claims 20-22 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a

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complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

- 17. Regarding claims 20-22, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).
- 18. Claim 20 recites "...and wall liners containing absorbent materials such as...coated (.001"-.002") onto woven glass fiber paper..." on lines 3-5. It is unclear if all the other building materials mentioned contain absorbent materials of just the wall liners. For purposes of examination it will be treated as if the absorbent materials are contained in all building materials mentioned. It is also interpreted that the building materials contain a woven or non-woven coated glass fiber paper substrate.
- 19. Claim 20 recites "coated (.001"-.002") onto" it is unclear what the numbers after the word coating refer to. For purposes of examination it will be treated as if the coating thickness is in the range of 0.001"-0.002".
- 20. Claim 20 recites "such as Clinoptilolite (Zeolite)" on line 4, it is unclear if the claim requires any zeolite or just zeolites such as Clinoptilolite. For purposes of examination it will be treated as if any zeolite is required since Claim 21 further limits the type of zeolite.
- 21. Claim 20 recites: "~60-80% clinoptilolite (Zeolite)" on line 7, it is unclear what the term ~ means. For purposes of examination it will be treated as the word "about". It is also unclear if the terms are by percentage is by weight or volume

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22. Claim 20 recites: "40-20% (boehmite) binder in..." on line 8, it is unclear what the term (boehmite) is modifying in the claim. For purposes of examination it will be treated as 20-40% boehmite binder composition. It is also unclear if the terms are by percentage is by weight or volume.

- 23. Claim 20 recites "water (5:1 ratio)" on line 8, it is unclear what the numbers after the word water refer to. For purposes of examination it will be treated as if the ratio of binder to water is 5:1.
- 24. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 20 recites the broad recitation pH 8-9; 28-30C, and the claim also recites 8.5-8.9; 28.8C which is the narrower statement of the range/limitation (line 9).

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25. Claim 20 recites: "applying" (spraying or dipping) or coating" on line 11, it is unclear what the term "(spraying or dipping) or coating" means. For purposes of examination it will be treated as: "applying by spraying, dipping or coating".

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- 26. Claim 20 recites: "onto a [glass fiber paper] substrate" on line 12, it is unclear why applicant is utilizing brackets. For purposes of examination it will be treated as: "onto a glass fiber paper substrate".
- 27. Claim 20 recites the limitation "the absorbing material" in line 11. There is insufficient antecedent basis for this limitation in the claim.
- 28. Claim 20 recites "applying (coating)" on line 14, it is unclear if the application can only be done via coating. For purposes of examination it will be treated as a coating step.
- 29. Claim 20 recites "applying(coating) an organic polymer over the radiation absorbing coated material (glass fiber paper)" on lines 14 and 15, it is unclear why applicant is utilizing parenthesis. For purposes of examination it will be treated as: "coating an organic composition over the zeolite radiation absorbent composition"
- 30. Claim 20 recites the limitation "the radiation absorbing coated material" in lines 14 and 15. There is insufficient antecedent basis for this limitation in the claim.
- 31. Claim 20 recites "(HPC) + Methyl" on lines 15 and 16 it is unclear what the term "+" is for. For purposes of examination it will be treated as "(HPC) and Methyl".
- 32. Claim 20 recites: "(EMG) ~60%-40% (ratio) " on line 16, it is unclear what the term ~ means. For purposes of examination it will be treated as the word "about".

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33. Claim 20 recites: "water (20%vol.wt" on line 16, it is unclear what the term vol.wt means. For purposes of examination it will be treated as vol/wt.

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- 34. Claim 21 recites: "other adsorbents" in line 4. It is unclear if applicant meant absorbent or adsorbent. For purposes of examination it will be treated as absorbent.
- 35. Claim 21 recites: "adsorbent" in lines 2 and 3. It is unclear if applicant meant absorbent or adsorbent. For purposes of examination it will be treated as absorbent.
- 36. Claim 22 contains the trademark/trade name "BASF (Alcoa) HiQ-40, Alucol". Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or produce, the claim does not comply with the requirements of 35 USC 112, second paragraph.
- 37. Claim 22 contains the sentence: "Through this process, adsorbent particles tend also to be encapsulated by the boehmite binder". It is unclear is this is a result of what occurs previously in the process or if there is another step not recited which makes this occur. For examination it will be treated as a recitation of what occurs after performing step a) of Claim 20.
- 38. The following is a quotation of 35 U.S.C. 112(d):

(d) REFERENCE IN DEPENDENT FORMS.—Subject to subsection (e), a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), fourth paragraph:

Subject to the [fifth paragraph of 35 U.S.C. 112 (pre-AIA)], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

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39. Claim 21 is rejected under 35 U.S.C. 112(d) or pre-AIA 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. Claim 21 recites absorbent materials which are not zeolites which broadens the scope of the absorbent materials. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Examiner Comments

40. Examiner suggests amending the claim as previously discussed on 06/28/1012 to remove all 35 USC 112, second paragraphs issues discussed above.

Conclusion

- 12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - a. Nakatsuka et al. (US PGPub 2005/0087705 A1) teaches materials and product utilized for blocking the effects of radiation (Abstract). Nakatsuka teaches that kerative derivatives such as monosaccarides and polysaccharides are utilized for the invention [0038].

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANCISCO TSCHEN whose telephone number is (571)270-3824. The examiner can normally be reached on Monday - Friday 9:00-18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571)272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/F. T./ Examiner, Art Unit 1712

/MICHAEL CLEVELAND/ Supervisory Patent Examiner, Art Unit 1712

Examiner-Initiated Interview Summary	13/067,917 ROBINSON, WIL		_LIAM L.
Examiner-initiated interview Summary	Examiner	Art Unit	
	FRANCISCO TSCHEN	1712	
All participants (applicant, applicant's representative, PTC) personnel):		
(1) FRANCISCO TSCHEN.	(3)		
(2) <u>WILLIAM ROBINSON</u> .	(4)		
Date of Interview: 29 April 2014.			
Type: X Telephonic Video Conference Personal [copy given to: Applicant	☐ applicant's representative]		
Exhibit shown or demonstration conducted: Yes If Yes, brief description:	⊠ No.		
Issues Discussed 101 112 102 103 Ot (For each of the checked box(es) above, please describe below the issue and det			
Claim(s) discussed: <u>20</u> .			
Identification of prior art discussed: n/a .			
Substance of Interview (For each issue discussed, provide a detailed description and indicate if agreeme reference or a portion thereof, claim interpretation, proposed amendments, argue Applicant submitted a proposed amendment to Claim 20	ments of any applied references etc)		
not be entered because it raises new matter issues which of a low molecular weight (20mol) synergistic monosacchatitanium dioxide. Applicant recordation instructions: It is not necessary for applicant to the substance of an interview should include the items listed in MPEP 7 general thrust of each argument or issue discussed, a general indication general results or outcome of the interview, to include an indication as to	provide a separate record of the substance of any interview of record. A c 3.04 for complete and proper recordation of any other pertinent matters discusse	ance of interview. omplete and proper roon including the iden	nprising ecordation of tification of the bility and the
Attachment ■ Contact			
/FRANCISCO TSCHEN/ Examiner, Art Unit 1712			

Application No.

Applicant(s)

	Notice of References Cited		Application/Control No. 13/067,917 Applicant(s)/Patent Under Reexamination ROBINSON, WILLIAM L.				
		Examiner	Art Unit				
				FRANCISCO TSCHEN	1712	Page 1 of 1	
				U.S. P	ATENT DOCUMENTS		
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	0.5. FATERT DOCUMENTS								
*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification				
*	Α	US-2007/0298235	12-2007	Yoshida et al.	428/294.7				
*	В	US-2005/0087705	04-2005	Nakatsuka et al.	250/516.1				
	С	US-							
	D	US-							
	Е	US-							
	F	US-							
	G	US-							
	Ι	US-							
	1	US-							
	J	US-							
	K	US-							
	L	US-							
	М	US-							

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	0					
	Р					
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	R					
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	Т					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).) Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes



Application/Control No.	Applicant(s)/Patent Under Reexamination		
13067917	ROBINSON, WILLIAM L.		
Examiner	Art Unit		
FRANCISCO TSCHEN	1712		

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED			
Symbol Date Examin			

US CLASSIFICATION SEARCHED						
Class Subclass Date Examiner						
427	limited by text	6/7/2012	FT			
427	407.3,411,415; limited by text	6/7/2012	FT			
428	294.7	6/7/2012	FT			
442	42,78,180; limited by text	6/7/2012	FT			
52	474; limited by text	6/7/2012	FT			

SEARCH NOTES						
Search Notes Date Examiner						
Inventor Search	6/7/2012	FT				
See EAST Search Notes	6/7/2012	FT				
Google Scholar zeolite, radiactive absorbing coatings	6/7/2012	FT				
US Harvest Energy and Tech Corp brochures	6/7/2012	FT				
Reviewed applications: 12/656741,60/690071, 61006403, 61064115, 61129912, 61136183, 61193842, 61202133	6/7/2012	FT				
Consulted SPE Jenn Chriss and Examiner, Elizabeth Cole	6/7/2012	FT				
Updated Inventor Search	4/30/2014	FT				
Discussed case with applicant regarding Office of Petitions Decision	4/30/2014	FT				
Updated EAST SEarch	4/30/2014	FT				
CPC Text Search (G21F1/103,1/12,1/10,1/00; D21H13/24,13/40, 13/16; E04C2/043)	4/30/2014	FT				

U.S. Patent and Trademark Office Part of Paper No.: 20140429

INTERFERENCE SEARCH				
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner	
-	Interference Searched: UPAD text search, See EAST interference Search Printout	6/7/2012	FT	
	Interference Search: UPAD Class Search (427/407.3,411,415; 428/294.7; 442/42,78,180; 52/474)	6/7/2012	FT	

U.S. Patent and Trademark Office Part of Paper No.: 20140429

Amendment To The Elected Claims

Examiner Tschen,

04/23/2024 11:53

On June 7, 2012, I received your proposed amendment to over come 112 issues with Claims 20-22 of my elected invention (U.S. Application #13/067,917) under 35 USC 112 (second paragraph). Thank you! I did however modified your suggested amendment for Claim 20 in reference to the substrates I tested and the organic/inorganic compositions I used (steps c & d). Claims 21-22 can remain as proposed.

Claim 20. "A method for producing air filtration media and building materials, the building materials selected from the group consisting of gypsum wallboard, mineral fiber acoustic ceiling tiles, mineral fiber acoustic panels, PVC laminated gypsum ceiling tiles, fiber glass ceiling panels, fiber glass acoustic panels, ceiling tiles and wall liners; the air filtration media and the building materials containing a woven and/or nonwoven glass fiber paper, borosilicate or polypropylene substrate coated with an aqueous composition comprising a zeolite radiation absorbent acting as a trapping agent and a retention binder, the aqueous composition applied at a thickness of .001 in - .002 in., the method comprising the steps of:

- a) mixing at a ratio of 60-80% radiation absorbing zeolite and 40-20% retention aid binder in DI water at a pH 8-9 and a temperature of 28-30 deg. C for two minutes to create an aqueous composition, then;
- b) applying the aqueous composition by spraying, dipping or coating onto the glass fiber paper, borosilicate or polypropylene substrate, then;
- c) coating an organic composition over the aqueous composition, the organic composition consisting of: a polysaccharide such as hydroxypropylcellulose (HPC) and a low

molecular weight (20 mol) synergistic monosaccharide such as ethoxylated methylglucose (EMG) in 60-40% ratio (HPC:EMG) in DI water (20% vol) or d) coating an organic composition over the aqueous composition, the organic composition comprising: HPC and EMG in 60-40% ratio in DI water (10% vol) and

TiO2 (10% vol)."

lliam L. Robinson, Jr.

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	((WILLIAM) near2 (ROBINSON)).INV. and (RFI or EMI)	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:40
L2	5	((WILLIAM) near2 (ROBINSON)).INV. and zeolite	US- PGPUB; USPAT	OR	ON	2014/04/30 10:40
L4	87	D21H13/16.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:42
L5	711	E04C2/043.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:42
L6	518	D21H13/40.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:42
L7	266	D21H13/24.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:42
L8	66	G21F1/00.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
L9	5702	G21F.cpcl.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
L10	110	G21F1/10.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
L11	76	G21F1/103.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
L12	76	G21F1/12.cpc.	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:53
L13	1	10 and zeolite	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:54
L14	36416	"90" and zeolite	US- PGPUB; USPAT	OR	OFF	2014/04/30 10:54
L15	266	9 and zeolite	US- PGPUB; USPAT	OR	ON	2014/04/30 10:54
L16	0	9 and ethoxylated adj methyl adj glucose	US- PGPUB; USPAT	OR	ON	2014/04/30 10:55
L17	0	9 and methyl adj glucose	US- PGPUB;	OR	ON	2014/04/30 10:56

	***************************************		USPAT			
L18	0	9 and methylglucose	US- PGPUB; USPAT	OR	ON	2014/04/30 10:56
L19	65	9 and glucose	US- PGPUB; USPAT	OR	ON	2014/04/30 10:56
L20	252	9 and cellulose	US- PGPUB; USPAT	OR	ON	2014/04/30 11:02
L21	3	9 and hydroxy near2 cellulose	US- PGPUB; USPAT	OR	ON	2014/04/30 11:02
S1	479	((WILLIAM) near2 (ROBINSON)).INV.	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:44
S2	0	((WILLIAM) near2 (ROBINSON)).INV. and batimore	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:45
S3	10	((WILLIAM) near2 (ROBINSON)).INV. and baltimore	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:45
S4	479	((WILLIAM) near2 (ROBINSON)).INV. andbuilding	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:46
S5	24	((WILLIAM) near2 (ROBINSON)).INV. and building	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:46
S6	0	((WILLIAM) near2 (ROBINSON)).INV. and gypsum	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:47
S7	2650	clinoptilolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:48
S8	123	clinoptilolite and gypsum	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:48
S9	88	clinoptilolite and boehmite and water	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:49
S10	5	clinoptilolite same boehmite and water	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:49
S11	673	(zeolite adj type adj (X A Y))	US- PGPUB; USPAT	OR	OFF	2012/06/05 13:55
S12	15031	"ZSM-3" EMT "EMC-2" "ZSM-18" "ZSM-5" "ZSM-11"	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:35
S13	11601	chabazite offretite erionite mordenite gmelinite mazzite	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:36
S14	3441	(S11 S12 S13) and (radiation)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:37
S15	2	(S11 S12 S13) and (radiation adj absorbing)	US- PGPUB;	OR	OFF	2012/06/05 14:37

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S16	0	EMI and (S1 S2 S3)	US- PGPUB; USP A T	OR	OFF	2012/06/05 14:56
S17	0	(electromagnetic adj interference) and (S1 S2 S3)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:56
S18	41575	(electromagnetic adj interference)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:56
S19	11	(intentional adj electromagnetic adj interference)	US- PGPUB; USPAT	OR	OFF	2012/06/05 14:56
S20	1	"6524846".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:30
S21	22	(chabazite offretite erionite mordenite gmelinite mazzite) and (electromagnetic adj interference)	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:47
S22	104	(S11 S12 S13) and (electromagnetic adj interference)	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:52
S23	54	(S11 S12 S13) and (electromagnetic adj interference) and paper	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:52
S24	794	(glass adj fiber) adj paper	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:56
S25	794	(glass adj fiber adj paper)	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:56
S26	329	(glass adj fiber adj paper) and coating	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:56
S27	7	(glass adj fiber adj paper) same zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 15:57
S28	0	(glass adj fiber adj paper) and clinoptilolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:20
S29	0	(glass adj fiber adj paper) and zeolite and boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:21
S30	3074	zeolite and boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:21
S31	1214	zeolite same boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:21
S32	961	zeolite with boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:21
S33	724	radiation same zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:28
S34	1	"20060137276".pn.	US- PGPUB;	OR	OFF	2012/06/05 16:34

	***************************************		USPAT		****	
S35	37	radiation same zeolite and "427".clas.	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:46
S36	2	10/532635.app.	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:49
S37	30137	gypsum	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S38	2995	gypsum and (glass adj fiber)	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S39	248	gypsum and (glass adj fiber) and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S40	0	gypsum and (glass adj fiber) and zeolite and beohmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S41	8	gypsum and (glass adj fiber) and zeolite and boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S42	2	gypsum.ab. and (glass adj fiber) and zeolite and boehmite	US- PGPUB; USPAT	OR	OFF	2012/06/05 16:50
S43	243	hydroxypropylcellulose and gluceth	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:00
S44	240	hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:00
S45	25	hydroxypropylcellulose same (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:00
S46	2697	gypsum.ab. hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:01
S47	0	gypsum.ab. and hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:01
S48	5	gypsum and hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:01
S49	0	EMI and hydroxypropylcellulose and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:01
S50	241823	EMI attenuation	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:06
S51	179	EMI adj attenuation	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:06
S52	2	(EMI adj attenuation) with coating	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:06
S53	429	(EMI near3 attenuation)	US- PGPUB;	OR	OFF	2012/06/05 17:07

L			USPAT]		
S54	0	(EMI near3 attenuation) and hydroxypropylcellulose	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:08
S55	174	(EMI) and hydroxypropylcellulose	US- PGPUB; USPAT	OR	OFF	2012/06/05 17:08
S56	0	"13352456".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:12
S57	1	13/352456.app.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:12
S58	0	methyl adj gluceth adj S20	DERWENT	OR	OFF	2012/06/05 18:17
S59	108	methyl adj gluceth	DERWENT	OR	OFF	2012/06/05 18:17
S60	0	(methyl adj gluceth) and gypsum	DERWENT	OR	OFF	2012/06/05 18:17
S61	0	(methyl adj gluceth) and drywall	DERWENT	OR	OFF	2012/06/05 18:17
S62	0	(methyl adj gluceth) and HPC	DERWENT	OR	OFF	2012/06/05 18:17
S63	9	(methyl adj gluceth) and hydroxypropylcellulose	DERWENT	OR	OFF	2012/06/05 18:18
S64	4	"HiQ-40"	DERWENT	OR	OFF	2012/06/05 18:20
S65	233	428/294.7.ccls.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:23
S66	1	"5272240".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:46
S67	1	"5272740".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/05 18:46
S68	0	paint.ab. and (methyl adj gluceth adj \$20)	US- PGPUB; USPAT	OR	OFF	2012/06/05 19:20
S69	0	paint.ab. and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 19:20
S70	18	coating.ab. and (methyl adj gluceth)	US- PGPUB; USPAT	OR	OFF	2012/06/05 19:21
S71	9083	electromagnetic adj shielding	US- PGPUB; USPAT	OR	OFF	2012/06/06 10:40
S72	88	(electromagnetic adj shielding) and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/06 10:40
S73	3	427/407.3.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:33
S74	0	427/407.3.ccls. and (methyl adj gluceth)	US- PGPUB;	OR	OFF	2012/06/06 13:33

			USPAT			
S75	12	427/411.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S76	0	427/415.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S77	0	427/415.ccls. and methyl adj gluceth	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S78	1286	methyl adj gluceth	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S79	112	S78 and construction	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:34
S80	61	S78 and paint	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:35
S81	0	S78 and paint.ab.	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:36
S82	0	S78 and paint.ti.	US- PGPUB; USPAT	OR	OFF	2012/06/06 13:36
S83	9	ethoxylated adj methylglucoside	US- PGPUB; USPAT	OR	OFF	2012/06/07 10:10
S84	2	alucol	US- PGPUB; USPAT	OR	OFF	2012/06/07 10:28
S85	93	ethoxylated adj methyl adj glucoside	US- PGPUB; USPAT	OR	OFF	2012/06/07 12:11
S86	0	"200740298235".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:24
S87	0	"200700298235".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:24
S88	1	"20070298235".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:24
S89	1183945	woven nonwoven weav\$3 non?woven paper paper?making papermaking	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:28
S90	1450645	glass fiberglass fiber?glass fibreglass fibre?glass	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:28
S91	366945	S89 and S90	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:28
S92	48058	S89 near3 S90	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:29
S93	87083	S89 with S90	US- PGPUB;	OR	OFF	2012/06/07 13:29

			USPAT			******
S94	42	S92 and ((methyl adj gluceth) (ethoxylated adj methyl adj glucoside))	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:29
S95	104	S92 and ((methyl adj gluceth) (ethoxylated adj methyl adj glucoside) EMG (glucam adj "e-20") "mg-20" "mg-10")	US- PGPUB; USP A T	OR	OFF	2012/06/07 13:30
S96	0	S92 and (ethoxylated adj methyl adj glucoside)	US- PGPUB; USP A T	OR	OFF	2012/06/07 13:30
S97	74	S92 and (methyl adj glucoside)	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:30
S98	51	\$92 and ((methyl adj gluceth) (ethoxylated adj methyl adj glucoside) (glucam adj "e-20") "mg-20" "mg- 10")	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:33
S99	1	"4956394".pn.	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:33
S100	330	surfactant same (methyl adj glucoside)	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:34
S101	230	surfactant with (methyl adj glucoside)	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:34
S102	124	S96 S97 S98	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S103	673	(zeolite adj type adj (X A Y))	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S104	15050	"ZSM-3" EMT "EMC-2" "ZSM-18" "ZSM-5" "ZSM-11"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S105	11608	chabazite offretite erionite mordenite gmelinite mazzite	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S106	21159	S103 S104 S105	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S107	183	S106 and S92	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S108	312	boehmite and S92	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S109	13	S107 and S108 and S92	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:36
S110	0	"068239-42-9"	US- PGPUB; USP A T	OR	OFF	2012/06/07 13:42
S111	657	"beta-d-glucoside"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:42

S112	76	methyl adj "beta-d-glucoside"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:42
S113	0	ethoxylated adj methyl adj "beta-d- glucoside"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:43
S114	76	methyl adj "beta-d-glucoside"	US- PGPUB; USPAT	OR	OFF	2012/06/07 13:43
S115	0	42/180.ccls.	US- PGPUB; USPAT	OR	OFF	2012/06/07 14:58
S116	693	442/180.ccls.	US- PGPUB; USPAT	OR	OFF	2012/06/07 14:58
S117	3	442/78.ccls.	US- PGPUB; USPAT	OR	OFF	2012/06/07 14:59
S118	12	442/180.ccls. and zeolite	US- PGPUB; USPAT	OR	OFF	2012/06/07 14:59
S119	483626	442/180.ccls. cellulose	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:00
S120	148	442/180.ccls. and cellulose	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:00
S121	0	442/180.ccls. and glucoside	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:00
S122	98	442/180.ccls. and surfactant	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:00
S123	0	silsesquozane	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:38
S124	24	silsesquoxane	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:38
S125	8971	silsesquioxane	US- PGPUB; USPAT	OR	OFF	2012/06/07 15:40

4/30/2014 11:15:46 AM

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UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 8019

SERIAL NUMB	ER	FILING OF	7 371(c)		CLASS	GRO	UP ART	UNIT	ATTC	RNEY DOCKET
13/067,917		07/07/2			427		1712			140.
		RUL	E							
APPLICANTS										
INVENTORS William L. F	Robins	son JR., Balti	more, MD							
** CONTINUING	DATA	, *********	******							
** FOREIGN API	PLICA	TIONS *****	*****	*****	*					
** IF REQUIRED 08/02/2011		EIGN FILING	GLICENS	E GRA	ANTED ** ** SMA	LL EN	TITY **			
Foreign Priority claimed 35 USC 119(a-d) conditi	ions met		☐ Met af Allowa	ter nce	STATE OR COUNTRY	_	EETS WINGS	TOT/ CLAII		INDEPENDENT CLAIMS
TS	RANCISC SCHEN/ xaminer's S		Initials		MD		0	22		3
ADDRESS										
William L. F 5914 Greer Baltimore, I UNITED S	nspring MD 21	g Avenue 209								
TITLE										
Method and use of organic and mineral admixtures for EMI and radioactive isotope shielding of building materials such as glass fiber wall coverings, gypsum wallboard and electrically conductive or resistive, high performance, high strength concrete										
						I	☐ All Fe	es		
_							1 .16 F	ees (Fili	ing)	
		Authority has	_		aper EPOSIT A CCOU N		1 .17 F	ees (Pro	ocessi	ng Ext. of time)
		to			_1 0011 A00001		1 .18 F	ees (lss	sue)	
							☐ Other			
							☐ Credit	•		

Office of Petitions: Routing Sheet



Application No. 13/067,917

This application is being forwarded to your office for further processing. A decision has been rendered on a petition filed in this application.

x GRANTED

DISMISSED

DENIED

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
13/067,917	07/07/2011	William L. Robinson JR.		8019	
William L. Rob	7590 04/16/201- inson, Jr.	EXAMINER			
5914 Greenspring Avenue Baltimore, MD 21209		TSCHEN, FR	ANCISCO W		
			ART UNIT	PAPER NUMBER	
			1712		
			MAIL DATE	DELIVERY MODE	
			04/16/2014	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

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Commissioner for Patents United States Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450 www.uspto.gov

In re Application of :

William L. Robinson, Jr. :

Application No. 13/067,917 : DECISION ON PETITION Filed: July 7, 2011 : UNDER 37 CFR 1.137(a)

For: METHOD AND USE OF ORGANIC AND MINERAL ADMIXTURES FOR EMI AND RADIOACTIVE ISOTOPE SHIELDING OF BUILDING MATERIALS SUCH AS GLASS FIBER WALL COVERINGS, GYPSUM WALLBOARD AND ELECTRICALLY CONDUCTIVE OR RESISTIVE, HIGH PERFORMANCE, HIGH STRENGTH CONCRETE

This is a decision on the renewed petition, filed March 27, 2014, which is being treated as a petition under 37 CFR 1.137(a) to revive the instant nonprovisional application for failure to timely notify the U.S. Patent and Trademark (USPTO) of the filing of an application in a foreign country, or under a multinational treaty that requires publication of applications eighteen months after filing. *See* 37 CFR 1.137(f).

The petition is **GRANTED**.

Petitioner states that the instant nonprovisional application is the subject of an application filed in an eighteen-month publication country on November 8, 2011. However, the USPTO was unintentionally not notified of this filing within 45 days subsequent to the filing of the subject application in an eighteenmonth publication country.

In view of the above, this application became abandoned pursuant to 35 U.S.C. § 122(b)(2)(B)(iii) and 37 CFR 1.213(c) for failure to timely notify the Office of the filing of an application in a foreign country or under a multilateral international agreement that requires publication of applications 18 months after filing.

A petition to revive an application abandoned pursuant to 35 U.S.C. 122(b)(2)(B)(iii) for failure to notify the USPTO of a foreign filing must be accompanied by:

- (1) the required reply which is met by the notification of such filing in a foreign country or under a multinational treaty;
- (2) the petition fee as set forth in 37 CFR 1.17(m); and
- (3) a statement that the entire delay in filing the required reply from the due date of the reply until the filing of a grantable petition was unintentional.

Application/Control Number: 13/067,917 Page 2

Art Unit: OPET

The instant petition has been found to be in compliance with 37 CFR 1.137(a). Accordingly, the failure to timely notify the USPTO of a foreign or international filing within 45 days after the date of filing of such foreign or international application as provided by 35 U.S.C. § 122(b)(2)(B)(iii) and 37 CFR 1.213(c) is accepted as having been unintentionally delayed.

The previous Request and Certification under 35 U.S.C. § 122(b)(2)(B)(i) has been rescinded. A Notice Regarding Rescission of Nonpublication Request which sets forth the projected publication date of July 24, 2014 accompanies this decision on petition.

Telephone inquiries concerning this decision should be directed to the undersigned at (571) 272-3208.

This application is being referred to Technology Center Art Unit 1712 for examination in due course.

/KOC/ Karen Creasy Paralegal Specialist Office of Petitions

ATTACHMENT: Notice Regarding Rescission of Nonpublication Request

Office of Petitions: Dec	Mailing Month	
Application No.	13067917	* 1 3 0 6 7 9 1 7 *
	nber only, no slashes or commas. year of filing+last 5 numbers", Ex.	Ex: 10123456 for PCT/US05/12345, enter 51512345
Deciding Official:	KAREN CREASY	
Count (1) - Palm Credit Decision: GRANT	13/067,917 FINANCE WORK NEEDED Select Check Box for YE	S * G R A N T *
Decision Type: 536 - 37 CFR	1.137(f) - ABN FOR FAILURE TO	NOTIFY U ▼
Notes:		
Count (2)	ELNANCE MODIL NEEDED	
Decision: n/a	FI NANCE WORK NEEDED	S
Decision Type: NONE		
Notes:		
Count (3)	FINANCE WORK NEEDED	
Decision: n/a	Select Check Box for YE	S
Decision Type: NONE		
Notes:		
Initials of Approving C	official (if required)	If more than 3 decisions, attach 2nd count sheet & mark this box
Printed on: 4/15/2014	Off	fice of Petitions Internal Document - Ver. 5.0



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS PC. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NUMBER FILING OR 371(C) DATE FIRST NAMED APPLICANT ATTY. DOCKET NO./TITLE

13/067,917 07/07/2011

William L. Robinson JR.

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore. MD 21209

CONFIRMATION NO. 8019
NONPUBLICATION RESCISSION
LETTER



Date Mailed: 04/15/2014

Communication Regarding Rescission Of Nonpublication Request and/or Notice of Foreign Filing

Applicant's rescission of the previously-filed nonpublication request and/or notice of foreign filing is acknowledged. The paper has been reflected in the Patent and Trademark Office's (USPTO's) computer records so that the earliest possible projected publication date can be assigned.

The projected publication date is 07/24/2014.

If applicant rescinded the nonpublication request <u>before or on the date</u> of "foreign filing," then no notice of foreign filing is required.

If applicant foreign filed the application <u>after filing the above application and before</u> filing the rescission, and the rescission did not also include a notice of foreign filing, then a notice of foreign filing (not merely a rescission) is required to be filed within 45 days of the date of foreign filing. <u>See</u> 35 U.S.C. § 122(b)(2)(B)(iii), and <u>Clarification of the United States Patent and Trademark Office's Interpretation of the Provisions of 35 U.S.C.</u> § 122(b)(2)(B)(ii)-(iv), 1272 Off. Gaz. Pat. Office 22 (July 1, 2003).

If a notice of foreign filing is required and is not filed within 45 days of the date of foreign filing, then the application becomes abandoned pursuant to 35 U.S.C. § 122(b)(2)(B)(iii). In this situation, applicant should either file a petition to revive or notify the Office that the application is abandoned. See 37 CFR 1.137(f). Any such petition to revive will be forwarded to the Office of Petitions for a decision. Note that the filing of the petition will not operate to stay any period of reply that may be running against the application.

Questions regarding petitions to revive should be directed to the Office of Petitions at (571) 272-3282.

¹ Note, for purpose of this notice, that "foreign filing" means "filing an application directed to the same invention in another country, or under a multilateral international agreement, that requires publication of applications 18 months after filing".

/kocreasy/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virgnia 22313-1450 www.uspto.gov

APPLICATION NUMBER FILING OR 371(C) DATE FIRST NAMED APPLICANT ATTY. DOCKET NO./TITLE

13/067,917 07/07/2011 V

William L. Robinson JR.

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore, MD 21209

CONFIRMATION NO. 8019
NONPUBLICATION RESCISSION
LETTER



Date Mailed: 04/15/2014

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¹ Note, for purpose of this notice, that "foreign filing" means "filing an application directed to the same invention in another country, or under a multilateral international agreement, that requires publication of applications 18 months after filing".

/kocreasy/	

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

TANK THE PARTY OF

UNITED STATES PATENT AND TRADEMARK OFFICE

MAR 2 7 2014

Commissioner for Patents United States Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450



ON PETITION

WILLIAM L. ROBINSON, JR. 5914 GREENSPRING AVENUE BALTIMORE MD 21209

In re Application of
William Robinson, Jr.
Application No. 13/067,917
Filed: July 7, 2011
For: METHOD AND USE OF ORGANIC
AND MINERAL ADMIXTURES FOR
EMILAND RADIOACTIVE ISOTOPE
SHIELDING OF BUILDING MATERIALS
SUCH AS GLASS FIBER WALL
COVERINGS, GYPSUM WALLBOARD
AND ELECTRICALLY CONDUCTIVE OR
RESISTIVE, HIGH PERFORMANCE, HIGH
STRENGTH CONCRETE

This is a decision on the petition, filed December 27, 2013, which is being treated as a petition under 37 CFR 1.137(a) to revive the instant nonprovisional application for failure to timely notify the U.S. Patent and Trademark (USPTO) of the filing of an application in a foreign country, or under a multinational treaty that requires publication of applications eighteen months after filing. See 37 CFR 1.137(f).

The petition is **DISMISSED**.

Any request for reconsideration of this decision must be submitted within TWO (2) MONTHS from the mail date of this decision. Extensions of time under 37 CFR 1.136(a) are permitted. The reconsideration request should include a cover letter entitled "Renewed Petition under 37 CFR 1.137(a)." This is **not** a final agency action within the meaning of 5 U.S.C. § 704. No additional petition fee is required.

It is noted that Petitioner submitted a fee of \$475.00 as payment for the petition fee and a Certification of Micro Entity Status. However, petitioner should be aware that micro entity discount is no longer available under 37 CFR 1.17(m). The correct fee for the present petition under small entity status is \$850.00. Therefore, a balance of \$375.00 (\$850.00 - \$475.00) is

required. Before a determination on the merits of the petition can be decided, petitioner must supply the proper petition fee in a renewed petition.

Further correspondence with respect to this matter should be delivered through one of the following mediums:

By mail:

Mail Stop PETITIONS

Commissioner for Patents Post Office Box 1450

Alexandria, VA 22313-1450

By hand:

Customer Service Window

Mail Stop Petitions Randolph Building 40l Dulany Street Alexandria, VA 22314

By fax:

(571) 273-8300

ATTN: Office of Petitions

By internet:

EFS-Web1

Any questions concerning this matter may be directed to the undersigned at (571) 272-3208.

/KOC/ Karen Creasy Paralegal Specialist Office of Petitions

¹ www.uspto.gov/ebc/efs_help.html (for help using EFS-Web call the Patent Electronic Business Center at (866) 217-9197)

MAIL STOP PETITIONS

MAIL STOP PETITIONS	2 / 2014 I	•
In re Application of		
William L. Robinson, Jr.	A TAN DENIAR BURNE	
Application Number 13/067,917)	Request For
Filed July 7, 2011	·)	Reconsideration
Attorney Docket No. METHOD AND	USE OF)	•
ORGANIC AND MINERAL ADMIX		Renewed Petition
FOR EMI AND RADIOACTIVE ISO	OTOPES)	Under 37 CFR 1.137
SHIELDING OF BUILDING MATE	RIALS)	(b)
SUCH AS GLASS FIBER WALL CO	OVERINGS,)	• •
GYPSUM WALLBOARD AND ELF	ECTRICALLY)	
CONDUCTIVE OR RESISTIVE, HIG	GH)	
PERFORMANCE, HIGH STRENGT		
	,	

Now comes William L. Robinson, Jr., the Petitioner who is requesting reconsideration of his Petition For Revival Of An Application For Patent Abandoned For Failure To Notify The Office Of A Foreign Or A International Filing 37 CFR 1.137(f) filed on June 12, 2012.

A Petition to revive an application abandoned pursuant to 35 U.S.C. 122(b)(2)(B)(iii) for failure to notify the USPTO of a foreign filing must be accompanied by:

- (1) the required reply which is met by the notification of such filing in a foreign country or under a multinational treaty;
- (2) the petition fee as set forth in 37 CFR 1.17(m); and
- (3) a statement that the entire delay in filing the required reply from the due date of the reply until the filing of a grantable petition was unintentional (see attached Petition form).

Unfortunately the Petition to revive lacked item (2) and it was subsequently DISMISSED. The Petitioner apologizes for this mistake and ask that his Petition to Revive his nonprovisional application be granted. The appropriated fees are attached to this request.

The Petitioner further states that he unintentionally failed to respond to the Decision On Petition Under 37 CFR 1.137(b) dated July 12, 2012 for which an apology is also due.

Respectfully/Submitted,

William L. Robinson, Jr. 5914 Greenspring Avenue

Baltimore, Maryland 21209-3920

(443) 320-3123 - Phone

(410) 504-5258 - Ph/Fax

Doc Code: PET.OP

Document Description: Petition for review by the Office of Petitic

PTO/SB/64a (07-09) gh 07/31/2012. OMB 0651-0031

U.S. Patent and Trademan, District Of 1995, no persons are required to respond to a collection of information trades it displays a valid OMB control number. PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT Docket Number (Optional) ABANDONED FOR FAILURE TO NOTIFY THE OFFICE OFA FOREIGN OR INTERNATIONAL FILING (37 CFR 1.137(f)) William L. Robinson, Jr. First named inventor: 13/067,917 1712 Application No.: Art Unit: 7/7/2011 Examiner: Francisco Tschen Title: METHOD AND USE OF ORGANIC AND MINERAL ADMIXTURES FOR EMI AND RADIOACTIVE ISOTOPE SHIELDING OF BUILDING MATERIALS SUCH AS GLASS FIBER WALL COVERINGS, GYPSUM WALLBOARD AND ELECTRICALLY CONDUCTIVE OR RESISTIVE, HIGH PERFORMANCE, HIGH STRENGTH CONCRETE Attention: Office of Petitions **Mail Stop Petition Commissioner for Patents** P.O. Box 1450 Alexandria, VA 22313-1450 FAX (571) 273-8300 NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (571) 272-3282. The above-identified application became abandoned pursuant to 35 U.S.C. 12 2(b)(2)(B)(iii) for failure to timely notify the Office of the filing of an application in a foreign country or under a multinational international treaty that requires publication of applications eighteen months after filing. The date of abandonment is the day after the expiration date of the forty-five (45) day period set in 35 U.S.C. 122(b)(2)(B)(iii). PURSUANT TO 37 CFR 1.137(f), APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION -- UNDER 37 CFR 1.137(b) 1.Petition fee ___ (3). Applicant claims small entity status. See 37 CFR 1.27. Small entity-fee \$ ___ Other than small entity – fee \$ ___375 ___ (37 CFR 1.17(m)) 2. Notice of Foreign or International Filing (35 U.S.C. 122(b)(2)(B)(iii) and 37 CFR 1.213(c)) Subsequent to the filing of the above-identified application, an application was filed in another country, or under a multinational international treaty (e.g., filed under the Patent Cooperation Treaty), that requires publication of applications eighteen months after the filing. The filing date of the subsequently filed foreign or international application is $\underbrace{\text{November 8, 2011}}$

This collection of information is required by 37 CFR 1.137. The information is required to obtain or retain a benefit by the public which is to fife (and by the USPTO to process) an application. Confidentiality is go verned by 35 U.S.C. 122 and 37 CFR 1. 11 and 1.14. This collection is estimated to take 1.0 hour to comple te, to process) an application. Confidentiality is go verned by 35 U.S.C. 122 and 37 U.F.K 1. 11 and 1.14. This collection is estimated to take 1.0 nour to complete te, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450, DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Page 1 of 21

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT: The entire delay in filing the required notice of a foreign or international filing from the due date for the required notice until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOT E: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

	are not publicly available.
L//h/C	March 28, 2014
Signature	Date
William L. Robinson,	Jr.
Type or Printed Na	me Registration Number, if applicable
5914 Greenspring	Avenue (443) 320-3123
Address	
Baltimore, Maryl	Telephone Number
	——————————————————————————————————————
Address	
Enclosures: Pee Payment	
Additional about and in in	
Additional sheets containin	g statements establishing unintentional delay
Other.	
055550	
CERTIFICATE OF MA	ILING OR TRANSMISSION [37 CFR 1.8(a)]
I hereby certify that this correspondence is	s beina:
-	*
Deposited with the United States	s Postal Service on the date shown below with sufficient
Patents, P. O. Box 1450, Alexan	envelope addressed to: Mail Stop Petition, Commissioner for
l · 📻	
Transmitted by facsimile on the	date shown below to the United States Patent and Trademark
Office at (571) 273-8300.	
	•
Date	Signature
-	Total
· ·	Typed or printed name of person signing certificate

UNITED STATES PATENT AND TRADEMARK OFFICE



Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

WILLIAM L. ROBINSON, JR. 5914 GREENSPRING AVENUE BALTIMORE MD 21209

In re Application of : William Robinson, Jr. : Application No. 13/067,917 : Eilada July 7, 2011

Filed: July 7, 2011
For: METHOD AND USE OF ORGANIC
AND MINERAL ADMIXTURES FOR
EMILAND RADIOACTIVE ISOTOPE
SHIELDING OF BUILDING MATERIALS
SUCH AS GLASS FIBER WALL
COVERINGS, GYPSUM WALLBOARD
AND ELECTRICALLY CONDUCTIVE OR
RESISTIVE, HIGH PERFORMANCE, HIGH
STRENGTH CONCRETE



ON PETITION

This is a decision on the petition, filed December 27, 2013, which is being treated as a petition under 37 CFR 1.137(a) to revive the instant nonprovisional application for failure to timely notify the U.S. Patent and Trademark (USPTO) of the filing of an application in a foreign country, or under a multinational treaty that requires publication of applications eighteen months after filing. See 37 CFR 1.137(f).

The petition is **DISMISSED**.

Any request for reconsideration of this decision must be submitted within TWO (2) MONTHS from the mail date of this decision. Extensions of time under 37 CFR 1.136(a) are permitted. The reconsideration request should include a cover letter entitled "Renewed Petition under 37 CFR 1.137(a)." This is **not** a final agency action within the meaning of 5 U.S.C. § 704. No additional petition fee is required.

It is noted that Petitioner submitted a fee of \$475.00 as payment for the petition fee and a Certification of Micro Entity Status. However, petitioner should be aware that micro entity discount is no longer available under 37 CFR 1.17(m). The correct fee for the present petition under small entity status is \$850.00. Therefore, a balance of \$375.00 (\$850.00 - \$475.00) is

required. Before a determination on the merits of the petition can be decided, petitioner must supply the proper petition fee in a renewed petition.

Further correspondence with respect to this matter should be delivered through one of the following mediums:

By mail:

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Alexandria, VA 22313-1450

By hand:

Customer Service Window

Mail Stop Petitions Randolph Building 401 Dulany Street Alexandria, VA 22314

By fax:

(571) 273-8300

ATTN: Office of Petitions

By internet:

EFS-Web¹

Any questions concerning this matter may be directed to the undersigned at (571) 272-3208.

/KOC/ Karen Creasy Paralegal Specialist Office of Petitions

www.uspto.gov/ebc/efs_help.html (for help using EFS-Web call the Patent Electronic Business Center at (866) 217-9197)

Doc Code: PET.OP

Document Description: Petition for review by the Office of Petitions

TRADEMARK

PTO/SB/64a (07-09)

ADEMAN Approved for use through 07/31/2012. OMB 0551-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DETITION FOR DEVIVAL OF AN ARRUPATION FOR BUTTON	unless it displays a valid OMB control number
PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED FOR FAILURE TO NOTIFY THE OFFICE OFA FOREIGN	Docket Number (Optional)
OR INTERNATIONAL FILING (37 CFR 1.137(f))	
Triania Tombina To	
First named inventor: William L. Robinson, Jr.	
Application No.: 13,/067, 917 Art Unit:	1712
Filed:	rancisco Tschen
Title: METHOD AND USE OF ORGANIC AND MINERAL ADMIX RADIOACTIVE ISOTOPE SHIELDING OF BUILDING OF GLASS FIBER WALL COVERINGS, GYPSUM WALLBOAM CONDUCTIVE OR RESISTIVE, HIGH PERFORMANCE, CONCRETE	MATERIALS SUCH AS RD AND ELECTRICALLY
Attention: Office of Petitions Mail Stop Petition Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 FAX (571) 273-8300	
NOTE: If information or assistance is needed in completing this form, Information at (571) 272-3282.	please contact Petitions
The above-identified application became abandoned pursuant to 35 U.S.C. 12 20 notify the Office of the filing of an application in a foreign country or under a multir requires publication of applications eighteen months after filing. The date of aband expiration date of the forty-five (45) day period set in 35 U.S.C. 122(b)(2)(B)(iii).	ational international treaty that
PURSUANT TO 37 CFR 1.137(f), APPLICANT HEREBY PETITIONS FOR REVIOUNDER 37 CFR 1.137(b)	/AL OF THIS APPLICATION
1.Petition fee Small entity-fee \$ (37 CFR 1.17(m)). Applicant claims small entity of fee \$ (37 CFR 1.17(m))	ty status. See 37 CFR 1.27.
2. Notice of Foreign or International Filing (35 U.S.C. 122(b)(2)(B)(iii) and 37 CFR	1.213(c))
Subsequent to the filing of the above-identified application, an application or under a multinational international treaty (e.g., filed under the Paten requires publication of applications eighteen months after the filing. The filed foreign or international application is November 8 , 201:	on was filed in another country, t Cooperation Treaty), that
, (Page 1 of 2)	

This collection of information is required by 37 CFR 1.137. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an app lication. Confidentiality is go verned by 35 U.S.C. 122 and 37 CFR 1. 11 and 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this bur den, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Petition Commissioner for Patents. P.O. Pox 1450, Alexandria, VA 23313-1450. ADDRESS. SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT: The entire delay in filing the required notice of a foreign or international filing from the due date for the required notice until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

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The same publicly available.	
LALL O	December 27, 2013
Signature	Date
William L. Robinson, Jr.	
Type or Printed Name	Registration Number, if applicable
5914 Greenspring Avenue	(443) 320-3123
Address	
Baltimore, Maryland 21209-3920	Telephone Number
Address	
Enclosures: Pee Payment	
Additional sheets containing statements establishing	Unintentional delay
	difficentional delay
Other:	
CERTIFICATE OF MAILING OR TRANSMISSIO	N (37 CED 1 9/a))
	N [57 CIR 1.0(a)]
I hereby certify that this correspondence is being:	
Deposited with the United States Postal Service on the da	to shown holowywith auto-i
I postage as institutes mall in an envelope addressed to M	ail Stop Petition. Commissioner for
Patents, P. O. Box 1450, Alexandria, VA 22313-1450.	to the state of th
Transmitted by facsimile on the date shown below to the U	nited States Patent and Trademark
Office at (571) 273-8300.	in a second seco
	1
Date	ignature
Typed or printed per	no of norman similar and East
yped or printed har	ne of person signing certificate

William L. Robinson, Jr.

13/067.917 First Named Inventor:

The applicant hereby certifies the following—

(1) SMALL ENTITY REQUIREMENT - The applicant qualifies as a small entity as defined in 37 CFR 1.27.

lethod And Use Of Organic And Mineral

- (2) APPLICATION FILING LIMIT Neither the applicant nor the inventor nor a joint inventor has been named as the inventor or a joint inventor on more than four previously filed U.S. patent applications, excluding provisional applications and international applications under the Patent Cooperation Treaty (PCT) for which the basic national fee under 37 CFR 1.492(a) was not paid, and also excluding patent applications for which the applicant has assigned all ownership rights or is obligated to assign all ownership rights as a result of the applicant's previous employment.
- (3) GROSS INCOME LIMIT ON APPLICANTS AND INVENTORS Neither the applicant nor the inventor nor a joint inventor, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986 (26 U.S.C. 61(a)), exceeding the "Maximum Qualifying Gross Income" reported on the USPTO website at http://www.uspto.gov/patents/law/micro entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.
- (4) GROSS INCOME LIMIT ON PARTIES WITH AN "OWNERSHIP INTEREST" Neither the applicant nor the inventor nor a joint inventor has assigned, granted, or conveyed, nor is under an obligation by contract or law to assign, grant, or convey, a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding the "Maximum Qualifying Gross Income" reported on the USPTO website at http://www.uspto.gov/patents/law/micro entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

	fsi /	GNATURE by	a party set forth in 37 C	FR 1.33(b)	
Signature	(1/4h/	1 Lx	1.		
Name	William L. Re	obinson/	Jr.		
Date	December 27, 2013	Telephone	443 320-3123	Registration No.	
T	here is more than one inve				



MAIL STOP PETITIONS

In re Application of)	
William L. Robinson, Jr.)	•
Application Number 13/067,917)	Request For
Filed July 7, 2011)	Reconsideration
Attorney Docket No. METHOD AND USE OF)	
ORGANIC AND MINERAL ADMIXTURES)	Renewed Petition
FOR EMI AND RADIOACTIVE ISOTOPES)	Under 37 CFR 1.137
SHIELDING OF BUILDING MATERIALS)	(b)
SUCH AS GLASS FIBER WALL COVERINGS,)	
GYPSUM WALLBOARD AND ELECTRICALLY)	•
CONDUCTIVE OR RESISTIVE, HIGH	•)	
PERFORMANCE, HIGH STRENGTH CONCRETE)	

Now comes William L. Robinson, Jr., the Petitioner who is requesting reconsideration of his Petition For Revival Of An Application For Patent Abandoned For Failure To Notify The Office Of A Foreign Or A International Filing 37 CFR 1.137(f) filed on June 12, 2012.

A Petition to revive an application abandoned pursuant to 35 U.S.C. 122(b)(2)(B)(iii) for failure to notify the USPTO of a foreign filing must be accompanied by:

- (1) the required reply which is met by the notification of such filing in a foreign country or under a multinational treaty;
- (2) the petition fee as set forth in 37 CFR 1.17(m); and
- (3) a statement that the entire delay in filing the required reply from the due date of the reply until the filing of a grantable petition was unintentional (see attached Petition form).

Unfortunately the Petition to revive lacked item (2) and it was subsequently DISMISSED. The Petitioner apologizes for this mistake and ask that his Petition to Revive his nonprovisional application be granted. The appropriated fees are attached to this request.

The Petitioner further states that he unintentionally failed to respond to the Decision On Petition Under 37 CFR 1.137(b) dated July 12, 2012 for which an apology is also due.

Respectfully/Submitted,

William L. Robinson, Jr. 5914 Greenspring Avenue

Baltimore, Maryland 21209-3920

(443) 320-3123 – Phone

(410) 504-5258 - Ph/Fax

UNITED STATES PATENT AND TRADEMARK OFFICE



Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

MAILED

JUL 02 2012

OFFICE OF PETITIONS

WILLIAM I, ROBINSON, JR. 5914 GREENSPRING AVENUE BALTIMORE MD 21209

In re Application of
William I. Robinson, Jr.
Application No. 13/067,917
Filed: July 7, 2011
Attorney Docket No. METHOD AND USE OF
ORGANIC AND MINERAL ADMIXTURES FOR
EMI AND RADIOACTIVE ISOTOPE
SHIELDING OF BUILDING MATERIALS SUCH
AS GLASS FIBER WALL, COVERINGS,
GYPSUM WALLBOARD AND
ELECTRICALLYH CONDUCTIVE OR
RESISTIVE, HIGH PERFORMANCE, HIGH
STRENGTH CONCRETE

DECISION ON PETITION UNDER 37 CFR 1.137(b)

This is a decision on the petition, filed June 12, 2012, which is being treated as a petition under 37 CFR 1.137(b) to revive the instant nonprovisional application for failure to timely notify the U.S. Patent and Trademark (USPTO) of the filing of an application in a foreign country, or under a multinational treaty that requires publication of applications eighteen months after filing. See 37 CFR 1.137(f).

The petition is **DISMISSED**.

Any request for reconsideration of this decision must be submitted within TWO (2) MONTHS from the mail date of this decision. Extensions of time under 37 CFR 1.136(a) are permitted. The reconsideration request should include a cover letter entitled "Renewed Petition under 37 CFR 1.137(b)." This is **not** a final agency action within the meaning of 5 U.S.C. § 704.

A petition to revive an application abandoned pursuant to 35 U.S.C. 122(b)(2)(B)(iii) for failure to notify the USPTO of a foreign filing must be accompanied by:

- (1) the required reply which is met by the notification of such filing in a foreign country or under a multinational treaty;
- (2) the petition fee as set forth in 37 CFR 1.17(m); and
- (3) a statement that the entire delay in filing the required reply from the due date of the reply until the filing of a grantable petition was unintentional.

The instant petition lacks item (2).

The check (\$930.00) petitioner submitted with the petition on June 12, 2011, **bounced** on accounting date of June 26, 2012. Therefore, the petition is dismissed because of insufficient funds in petitioner's account.

Further correspondence with respect to this matter should be delivered through one of the following mediums:

By mail:

Mail Stop PETITIONS

Commissioner for Patents Post Office Box 1450

Alexandria, VA 22313-1450

By hand:

Customer Service Window

Mail Stop Petitions Randolph Building 40l Dulany Street Alexandria, VA 22314

By fax:

(571) 273-8300

ATTN: Office of Petitions

By internet:

EFS-Web

www.uspto.gov/ebc/efs_help.html (for help using EFS-Web call the Patent Electronic Business Center

at (866) 217-9197)

Any questions concerning this matter may be directed to the undersigned at (571) 272-3208.

/KOC/

Karen Creasy Petitions Examiner Office of Petitions

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
13/067,917	07/07/2011	8019			
William L. Rob	7590 06/29/201 pinson, Jr.	2	EXAMINER TSCHEN, FRANCISCO W		
5914 Greenspri	ng Avenue				
Baltimore, MD 21209			ART UNIT	PAPER NUMBER	
		1712			
			MAIL DATE	DELIVERY MODE	
			06/29/2012	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Examiner-Initiated Interview Summary	13/067,917	ROBINSON, WILLIAM L.	
Examiner-initiated interview Summary	Examiner	Art Unit	
	FRANCISCO TSCHEN	1712	
All participants (applicant, applicant's representative, PTC) personnel):		
(1) FRANCISCO TSCHEN.	(3)		
(2) <u>WILLIAM ROBINSON</u> .	(4)		
Date of Interview: 06 June 2012.			
Type: X Telephonic Video Conference Personal [copy given to: Applicant	applicant's representative]		
Exhibit shown or demonstration conducted:	□ No.		
Issues Discussed 101 112 102 103 105 (For each of the checked box(es) above, please describe below the issue and details.			
Claim(s) discussed: <u>20-22</u> .			
Identification of prior art discussed:			
Substance of Interview (For each issue discussed, provide a detailed description and indicate if agreeme reference or a portion thereof, claim interpretation, proposed amendments, argui		identification or clarific	cation of a
See Continuation Sheet.			
Applicant recordation instructions: It is not necessary for applicant to	provide a separate record of the substa	ance of interview.	
Examiner recordation instructions : Examiners must summarize the sum the substance of an interview should include the items listed in MPEP 71 general thrust of each argument or issue discussed, a general indication general results or outcome of the interview, to include an indication as to	3.04 for complete and proper recordation of any other pertinent matters discussed	on including the idened regarding patental	tification of the oility and the
Attachment			

Application No.

Applicant(s)

U.S. Patent and Trademark Office PTOL-413B (Rev. 8/11/2010) Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Examiner drafted a new Claim to remove issues with 35 USC 112 as currently written, Claim was discussed and amendment approved by Applicant, changes to the specification were discussed and amendment approved by applicant as shown below:The application has been amended as follows: a. Claims 1-19 have been canceled because they are directed to a method and composition non-elected without traverse.

- b. Line 17 of the specification on Page 1 the word --HPC-- has been added between "cellulose" and ",". c. Line 10 of the specification on Page 5 the word --TM (boehmite alumina)-- has been added between "HiQ-40" and
- ".".
- d. Line 10 of the specification on Page 5 the word -TM (boehmite alumina)-- has been added between "Alucol" and ",". e. Claim 20 has been re-written as follows (original text deleted): --A method for producing building materials, the building materials selected from the group consisting of: gypsum wallboard, mineral fiber acoustic ceiling tiles, mineral fiber acoustic panels, PVC laminated gypsum ceiling tiles, fiberglass ceiling panels, fiberglass acoustic panels, ceiling tiles and wall liners; the building materials containing a woven or nonwoven glass fiber paper substrate coated with an aqueous composition comprising zeolite radiation absorbent acting as a trapping agent, and a retention aid binder, the aqueous composition applied at a thickness of .001 in. .002 in., the method comprising the steps of:
- a) mixing at a ratio of 60-80% radiation absorbing zeolite and 40-20% retention aid binder in DI water at a pH of 8-9 and a temperature of 28-30 deg. C for two minutes to create an aqueous composition, then;
- b) applying the aqueous composition by spraying, dipping or coating onto the glass fiber paper substrate, then;
- c) coating an organic composition over the aqueous composition, the organic composition comprising: hydroxypropylcellulose (HPC) and ethoxylated methyl glucoside (EMG) in a 60-40 ratio (HPC:EMG) in DI water (20% vol).--
- f. Claim 21 has been re-written as follows, (original text deleted): --The method of producing building materials according to Claim 20, in which the zeolite radiation adsorbent is selected from the group consisting of zeolite type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, chabazite, offretite, erionite, mordenite, gmelinite, mazzite, clinoptilonite and mixtures of these.--
- g. Claim 22 has been re-written as follows (original text deleted): --The method of producing building materials according to Claim 20 in which the retention aid binder is selected from the group consisting of boehmite, alumina sol are added to the slurry to bind the adsorbent particles to the glass fibers in the paper.--.

Examiner-Initiated Interview Summary	13/067,917	ROBINSON, WILLIAM L.	
Examiner-initiated interview Summary	Examiner	Art Unit	
	FRANCISCO TSCHEN	1712	
All participants (applicant, applicant's representative, PTC	personnel):		
(1) FRANCISCO TSCHEN.	(3)		
(2) <u>WILLIAM ROBINSON</u> .	(4)		
Date of Interview: <u>11 June 2012</u> .			
Type: X Telephonic Video Conference Personal [copy given to: Applicant	applicant's representative]		
Exhibit shown or demonstration conducted:	⊠ No.		
Issues Discussed 101 112 102 103 Oth (For each of the checked box(es) above, please describe below the issue and deta			
Claim(s) discussed: <u>20-22</u> .			
Identification of prior art discussed:			
Substance of Interview (For each issue discussed, provide a detailed description and indicate if agreement reference or a portion thereof, claim interpretation, proposed amendments, arguments.)		identification or clarifi	cation of a
Examiner informed to applicant that the application was an applicant to inform the Director of the office regarding filing foreign/international application is directed to the invention applicant review 35 USC 122, 37 CFR 1.181, 37CFR 1.13 contact the Office of Petitions and the Inventors Help Desk	g in a foreign or international ap n disclosed in the US applicatio 7 and MPEP 711.03(c); Examir	<u>plication where t</u> n. Examiner sug	<u>he</u> gested
Applicant recordation instructions: It is not necessary for applicant to	provide a separate record of the subst	ance of interview.	
Examiner recordation instructions : Examiners must summarize the su the substance of an interview should include the items listed in MPEP 71: general thrust of each argument or issue discussed, a general indication general results or outcome of the interview, to include an indication as to	 3.04 for complete and proper recordation of any other pertinent matters discussed 	on including the idened regarding patental	tification of the pility and the
Attachment			

Application No.

Applicant(s)

	Application No.	Applicant(s)
Notice of Abandonment	13/067,917	ROBINSON, WILLIAM L.
Notice of Abandonment	Examiner	Art Unit
	FRANCISCO TSCHEN	1712
The MAILING DATE of this communication app	pears on the cover sheet with the c	orrespondence address
This application is abandoned in view of:		
Applicant's failure to timely file a proper reply to the Office (a) A reply was received on (with a Certificate of It period for reply (including a total extension of time of (b) A proposed reply was received on, but it does (A proper reply under 37 CFR 1.113 to a final rejection.)	Mailing or Transmission dated month(s)) which expired on _ not constitute a proper reply under 3 n consists only of: (1) a timely filed ar	The state of the final rejection. The state of the final rejection. The state of t
application in condition for allowance; (2) a timely filed Continued Examination (RCE) in compliance with 37	CFR 1.114).	
(c) ☐ A reply was received on but it does not constit final rejection. See 37 CFR 1.85(a) and 1.111. (See (d) ☐ No reply has been received.		mpt at a proper reply, to the non-
2. Applicant's failure to timely pay the required issue fee an from the mailing date of the Notice of Allowance (PTOL-8		the statutory period of three months
(a) ☐ The issue fee and publication fee, if applicable, wa), which is after the expiration of the statutory p Allowance (PTOL-85).		
(b) ☐ The submitted fee of \$ is insufficient. A balance The issue fee required by 37 CFR 1.18 is \$	The publication fee, if required by 37	CFR 1.18(d), is \$
(c) ☐ The issue fee and publication fee, if applicable, has n	ot been received.	
3. Applicant's failure to timely file corrected drawings as req Allowability (PTO-37).	uired by, and within the three-month բ	period set in, the Notice of
(a) ☐ Proposed corrected drawings were received on after the expiration of the period for reply.	_ (with a Certificate of Mailing or Tran	smission dated), which is
(b) No corrected drawings have been received.		
4. The letter of express abandonment which is signed by th the applicants.	e attorney or agent of record, the ass	ignee of the entire interest, or all of
5. The letter of express abandonment which is signed by an 1.34(a)) upon the filing of a continuing application.	n attorney or agent (acting in a repres	entative capacity under 37 CFR
6. The decision by the Board of Patent Appeals and Interference of the decision has expired and there are no allowed claim		se the period for seeking court review
7. 🛮 The reason(s) below:		
See Continuation Sheet		
/Michael Cleveland/ Supervisory Patent Examiner, Art Unit 1712	/FRANCISCO TSCHEN/ Examiner, Art Unit 1712	
Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdr minimize any negative effects on patent term.	aw the holding of abandonment under 37	CFR 1.181, should be promptly filed to
U.S. Patent and Trademark Office	of Abandonment	Part of Paper No. 20120605
110000		

Item 7 - Other reasons for holding abandonment: Applicant requested non-publication of the application under 35 USC 122 but failed to notify the Director of filing of a foreign application directed to the invention disclosed in the application within the statutory period of 45 days as required.

Attachments:

Interview 1 related to allowance of case prior to finding out that the application directed to the invention was filed in a foreign application; Interview 2 to discuss abandonment of the application to the applicant after finding out about the foreign application..

2012 3	n Act of 1995, no persons are required to	U.S. Patent and Trademark	PTO/SB/64 d for use through 07/31/2012. OMB 06 c Office; U.S. DEPARTMENT OF COM- unless it displays a valid OMB control
ANDONED FOR FA	VIVAL OF AN APPLICAT ILURE TO NOTIFY THE C NATIONAL FILING (37 CF	FFICE OFA FOREIGN	Docket Number (Optional)
First named inventor: William	m L. Robinson, Jr.		
Application No.:	13/067,917	Art Unit:	1700
July 7, 2011		Examiner: Fr	ancisco Tschen
Attention: Office of Petition	ns ·		
Mail Stop Petition			
Mail Stop Petition Commissioner for Patents			
Mail Stop Petition Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-145			
Mail Stop Petition Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-145 FAX (571) 273-8300 NOTE: If infor		ed in completing this form,	please contact Petitions
Mail Stop Petition Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-145 FAX (571) 273-8300 NOTE: If infor Information The above-identified appli notify the Office of the filin requires publication of app	i0 mation or assistance is need	ursuant to 35 U.S.C. 12 2 n country or under a multi er filing. The date of aban	(b)(2)(B)(iii) for failure to ting national international treaty donment is the day after the
Mail Stop Petition Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-145 FAX (571) 273-8300 NOTE: If information information in the above-identified appliance of the filin requires publication of appexpiration date of the forty	mation or assistance is needed ation at (571) 272-3282. Ication became abandoned program of an application in a foreign polications eighteen months afterive (45) day period set in 35	ursuant to 35 U.S.C. 12 20 n country or under a multiver filing. The date of abandu.S.C. 122(b)(2)(B)(iii).	(b)(2)(B)(iii) for failure to ti national international treat donment is the day after th

2. Notice of Foreign or International Filing (35 U.S.C. 122(b)(2)(B)(iii) and 37 CFR 1.213(c))

Subsequent to the filing of the above-identified application, an application was filed in another country, or under a multinational international treaty (e.g., filed under the Patent Cooperation Treaty), that requires publication of applications eighteen months after the filing. The filing date of the subsequently filed foreign or international application is November 8, 2011

[Page 1 of 2]

[Page 1 of 2]
This collection of information is required by 37 CFR 1.137. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an app lication. Confidentiality is go verned by 35 U.S.C. 122 and 37 CFR 1. 11 and 1.14. This collection is estimated to take 1.0 hour to complet e, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT: The entire delay in filing the required notice of a foreign or international filing from the due date for the required notice until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOT E: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

	June 13, 2012
Signal	ture Date
William L. Rob	inson, Jr.
Type or Printe	Registration Number, if applicable
5914 Greensprin	ng Avenue (443) 320-3123
Addres	Telephone Number
Baltimore, Maryland	1 21209-3920
Addres	s
Enclosures: Fee Payment	
✓ Additional sheets con	taining statements establishing unintentional delay
Other:	
CERTIFICATE O	F MAILING OR TRANSMISSION [37 CFR 1.8(a)]
I hereby certify that this corresponde	ence is being:
postage as first class mail Patents, P. O. Box 1450, A	States Postal Service on the date shown below with sufficient in an envelope addressed to: Mail Stop Petition, Commissioner for Alexandria. WA 22313-1450. In the date shown below to the United States Patent and Trademark Signature William L. Robinson, Jr.
	Typed or printed name of person signing certificate

STATEMENT: The entire delay in filling the required notice of a foreign or international filling from the due date for the required notice until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional, for which I apologize.

William I. Robinson, Jr.

Inventor

June 13, 20/12

Under the Paperwork Reducit	ion Act of 1995, no :	persons are required to re	U.S. Paters or			PTO/SB/01 (07-07) 0/2010. OMB 0651-0032 MENT OF COMMERCE
/			Attorney Docke	Examination unless	s it contoins a yea	ed CHMB countral unturper.
DECLARATIO		LITY OR	Number	1		
	ESIGN		First Named Inv	entor	Wm L. R	obinson, J
	APPLICATI	ON		COMPLETI	E IF KNOWN	
(37 0	CFR 1.63)		Application Num	har I		
				1	3/067,	917
Declaration Submitted OR		ration :illeci after Initiali	Filing Date		9/15/2	2011
With Initial	Filing	(aurcharge	Art Unit		1712	
Filing	(37 C	FR 1.16 (e)) red)	Examiner Name			Tari
				F	-ancisus	Tschen)
i believe the inventor(e) name which a patent to require on it. Method And Use C. Shielding Of I. Wallboard And El	Each inventor's residence, making address, and citizenship are as stated below next to their name. I believe the inventor(e) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a passed to sought on the inventor, entitled: Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete					
the appealmenton of which		(7 Mile of the				
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OR ·			·	•		
was filed on (MM/DD/)	mm		as United Stat	es Application	Number or P	CT International
			4	<u></u>		
Application Number	. 1	and was amende	YYYXIGVMM) no b	γ)		(if applicable).
I hereby state that I have revi amended by any amendment			of the above ident	ified specificat	ion, including	the claims, as
I acknowledge the duty to discontinuation-in-pert application and the national or PCT interr	ns, material inf	ionnetion which bec	ame available be	tween the filting		
I hereby claim foreign priority inventor's or plant breeder's r country other than the United application for patent, invento- before that of the application of	ights certificate States of Amer r's or plant bree	r(s), or 385(a) of an rice, listed below an oder's rights certifica y is claimed.	y PCT internations d have also identi ite(s), or any PCT	al application vised below, by	which designate checking the application has	ated at least one box, any foreign ving a filing date
Prior Foreign Application		Foreign Filing		riority		opy Attached?
Number(s)	Country	(MIN/DD/YY)	No.	Claimed	YES	NO -
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Additional foreign ap						

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 initiates to complete, including gathering, propering, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case, Any comments on the amount of time you require to complete this form which suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DNOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing the form, cell 1-800-PTO-9199 and select option 2.

		U.S. Pat	art and Tradomyrk (Office: U.S.	PTO/SB/01 (07-0 lugh 06/30/2010. OMB 0651-00 DEPARTMENT OF COMMERC
Under the Preservoix Reduction Act of 1995, no.	TION Utility or I			•	area a valid OMB control numbe
				· · · · ·	·
Direct all The address associated with Customer Nun			OI	• 6	Correspondence address below
Name William L. Robi	lnson, Jr			•	
Address 5914 Greensprin	ng Avenue		•		
Chy Baltimore		State Mar	yland		ZIP 21209
Country	Telephone		En	nail	
USA	443 320-	3123		bacto	w@aol.com
	WARN	NG:			
them to the USPTO. Petitioner/applicant publication of the application (unless a non-or issuance of a patent. Furthermore, the application is referenced in a published authorization forms PTO-2038 submitted for publicity available. I hereby declare that all statements made and belief are believed to be true; and that attements and the like so made are punishfalse statements may jeopardize the validity	publication request in record from an aban application or an iss at payment purposes terein of my own know further that these stands by line or impris	compliance doned appi ued patent are not reta wedge are stements w onment, or	with 37 CFR 1 ication may also (see 37 CFR ained in the appointment and that all ere made with both, under 18	.213(a) is to be available at 1.14). Discation is statement the knowledge.	a made in the application litable to the public if the Checks and credit can fite and therefore are no sats made on information whedge that willful false
NAME OF SOLE OR FIRST INVENTOR:	П.				
Given Name (first and middle (ifany))		etition has	been filed for the Family Name		
William L.)		Robins		
Inventor's Stanstore					Date
11/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1	U'				June 11, 201
Residence City BAlvimore Maryl	and .	Country U	SA	Citizen	ship Yes
Marking Address 5914 Greensp	ring Avenue				-
City Baltimore State Ma	ryland	Zip	21209		Country USA
Artificial inventors or a least representative are	seing named on the	aucolem	ental sheet(s) PTO/S	88/02A or 0	2LR stacked hereto.

[Page 2 of 2]

Application or Docket Number PATENT APPLICATION FEE DETERMINATION RECORD 13/067,917 Substitute for Form PTO-875 APPLICATION AS FILED - PART I OTHER THAN SMALL ENTITY OR SMALL ENTITY (Column 1) (Column 2) RATE(\$) RATE(\$) FOR NUMBER FILED NUMBER EXTRA FEE(\$) FEE(\$) BASIC FEE N/A N/A N/A N/A 190 (37 CFR 1.16(a), (b), or (c)) SEARCH FEE N/A N/A N/A 310 N/A (37 CFR 1.16(k), (i), or (m)) **EXAMINATION FEE** N/A N/A N/A 125 N/A (37 CFR 1.16(o), (p), or (q)) TOTAL CLAIMS 22 30 60 OR minus 20 = 2 (37 CFR 1.16(i)) INDEPENDENT CLAIMS 3 125 0.00 minus 3 = (37 CFR 1.16(h)) If the specification and drawings exceed 100 APPLICATION SIZE sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. FEE 0.00 (37 CFR 1.16(s)) 41(a)(1)(G) and 37 CFR 1.16(s). MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) 0.00 * If the difference in column 1 is less than zero, enter "0" in column 2. TOTAL 685 TOTAL APPLICATION AS AMENDED - PART II OTHER THAN SMALL ENTITY OR SMALL ENTITY (Column 1) (Column 2) (Column 3) CLAIMS HIGHEST REMAINING PRESENT ADDITIONAL ADDITIONAL NUMBER RATE(\$) RATE(\$) ⋖ AFTER AMENDMENT PREVIOUSLY EXTRA FEE(\$) FEE(\$) **AMENDMENT** PAID FOR Total Minus OR (37 CFR 1.16(i)) Independent (37 CFR 1.16(h)) Minus OR Application Size Fee (37 CFR 1.16(s)) FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) OR TOTAL TOTAL OR ADD'L FEE ADD'L FEE (Column 1) (Column 2) (Column 3) CLAIMS HIGHEST REMAINING NUMBER PRESENT ADDITIONAL ADDITIONAL RATE(\$) RATE(\$) Ш PREVIOUSLY **AFTER** EXTRA FEE(\$) FEE(\$) **AMENDMENT** PAID FOR **AMENDMENT** Minus Total OR (37 CFR 1.16(i)) Independent Minus OR (37 CFR 1.16(h)) Application Size Fee (37 CFR 1.16(s)) OR FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) TOTAL TOTAL OR ADD'L FEE ADD'L FEE * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20" *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3"

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



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APPLICATION	FILING or	GRP ART				
NUMBER	371(c) DATE	UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/067.917	07/07/2011	1731	662		22	3

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore, MD 21209 CONFIRMATION NO. 8019
UPDATED FILING RECEIPT



Date Mailed: 10/06/2011

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Applicant(s)

William L. Robinson JR., Baltimore, MD;

Power of Attorney: None

Domestic Priority data as claimed by applicant

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)

If Required, Foreign Filing License Granted: 08/02/2011

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/067,917**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No

** SMALL ENTITY **

Title

Method and use of organic and mineral admixtures for EMI and radioactive isotope shielding of building materials such as glass fiber wall coverings, gypsum wallboard and electrically conductive or resistive, high performance, high strength concrete

Preliminary Class

106

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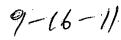
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APPLICATION NUMBER

FILING OR 371(C) DATE

FIRST NAMED APPLICANT

ATTY. DOCKET NO./TITLE

13/067,917

William L. Robinson, Jr.

5914 Greenspring Avenue Baltimore, MD 21209

07/07/2011

William L. Robinson JR.

CONFIRMATION NO. 8019

FORMALITIES LETTER

Date Mailed: 09/13/2011

NOTICE OF INCOMPLETE REPLY (NONPROVISIONAL)

Filing Date Granted

The U.S. Patent and Trademark Office has received your reply on 09/02/2011 to the Notice to File Missing Parts (Notice) mailed 08/04/2011 and it has been entered into the nonprovisional application. The reply, however, does not include the following items required in the Notice. A complete reply must be timely filed to prevent ABANDONMENT of the above-identified application. Replies should be mailed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

Applicant is given TWO MONTHS from the date of the Notice to File Missing Parts (Notice) mailed 08/04/2011 within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

Items Required to Avoid Abandonment:

The required items noted below SHOULD be filed along with any items required above. The filing date of this nonprovisional application will be the date of receipt of the items required above.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

 Replacement claim(s) commencing on a separate sheet in compliance with 37 CFR 1.75(h) and 1.121 is required. Claims must be consecutively numbered and the same claim number cannot be used for more than one claim. See 37 CFR 1.126.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

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William L. Robinson Jr. Method And Use Of Organic And July 7, 2011

Mineral Admixtures For EMI And Radioactive Isotope Shielding
Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And
Electrically Conductive Or Resistive, High Performance, High Strength Concrete

This application claims benefit of the earlier filing dates, National Filing of Patent Application in Vietnam No. 1-2008-00779 and May 9, 2011, Nonprovisional Application No. 61/457,664 in the name of the Applicant, William L. Robinson, Jr., of Baltimore, Maryland and entitled "Method and use of organic admixtures to waterproof and provide EMI/RFI shielding to paper and concrete" and "Method And Use Of Organic Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete", respectively.

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to a method of increasing the tensile, flexural and compressive strengths and the EMI/RF/Microwave and radioactive isotope shielding of concrete, cement, gypsum or other pozzolan (alumina siliceous) such as fly ash using electroplated nickel oxide or copper coated stainless steel fibers, hydroxypropyl cellulose, ethoxylated methylglucoside, petroleum coke powder or graphite and silica fume and non-radioactive alkali metals such as holmium and natural zeolites such as Clinoptilolite as radioactive trapping agents.

General Background

Electric utilities in the United States generate over 100 million tons of petroleum coke ash and coal fly ash as a by-product each year. Fly ash in particular is typically disposed of in landfills. Course fly ash ground to approximately 3.8 µm can produce high strength concrete and 25% cement replacement gave the highest compressive strength (100.3 MPa). A replacement of 25% cement will result in a 27% reduction in greenhouse gases produced from production of cement (680 Kg/ton of cement).

1 The cement industry is responsible for producing 5% of global CO₂ 2 emissions; 60% due to decarbonization of non-renewable materials such as 3 limestone and 40% due to heating cement kilns to 1500 °C using non-renewable fossil fuels. 4 Adding .90 vol.% stainless steel fibers (by weight) to cement improves 5 6 strength by 23% equal to 2-3 times that of non-reinforced concrete. The dominant 7 mechanisms of EM/RF/Microwave shielding for micron size (>100 nm) steel 8 fibers is absorption. Nickel filaments of diameter 0.4 µm, as made by 9 electroplating 0.1 µm diameter carbon filaments with nickel, have been shown to 10 be particularly effective. They are known as nickel filaments because they are 11 mostly nickel rather than carbon. A shielding effectiveness of 87 dB at 1 GHz has 12 been attained in a polymer-matrix composite containing just 7 vol.% nickel 13 filaments. Nickel is more attractive than copper, partly due to its superior 14 oxidation resistance. 15 Shielding of 40dB or more in the magnetic field ranging from 150 kHz to 16 16 MHz is needed for a 99 % EMI block. This degree of shielding effectiveness is 17 sufficient to for the construction of electromagnetic interference structures. 18 Binding Properties of Calcium Hydroxide or Hydrated Lime (CaCO₃) with 19 HPC. 20 Calcium hydroxide or hydrated lime is the product of the hydration of lime 21 $Ca(OH)_2 < \longrightarrow CaO + H_2O$ and water: 22 Lime is a soft, white amorphous powder with alkaline or slightly bitter taste. It 23 has been shown that lime is solubilised in the presence of sugars and it has been 24. observed in set Portland cements as hexagonal plate crystals (Lea, 1970). Lime 25 reacts with carbon dioxide (CO₂) to form calcium carbonate (CaCO₃). This 26 reaction which takes place in the presence of moisture is the cause of hardening of 27 high calcium lime mortars.

1 Binding Properties of HPC with Steel Fiber and Cement 2 HPC and Ethoxylated methyl glucoside (moisture barrier) binds together 3 at the 1-3' C-Terminal Domain. How does HPC bind to calcium in concrete? In 4 the presence of water calcium located at the N-Terminal Cellulose Binding 5 Domain in HPC will bind to calcium bonds at the 1-4' \beta calcium bonding sites in 6 cement. 7 The use of hydroxypropyl cellulose or methylcellulose (0.4% to 0.8% by 8 weight of cement) as an admixture in cement paste or concrete was found to 9 increase the shear bond strength with steel reinforcing bar and steel fiber. The 10 bond strength increased with increasing hydroxypropyl cellulose or 11 methylcellulose amounts. The contact electrical resistivity between cement and 12 fiber or between concrete and reinforcing bar was not changed by addition of 13 hydroxypropyl cellulose or methylcellulose. Trapping of Radioactive Fission Products (Isotopes) Using Non-Radioactive 14 15 **Stable Metallic Elements** 16 **Holmium** (houlmiam/ HOHL-mee-am) is a chemical element with the 17 symbol Ho and atomic number 67. Part of the lanthanide series, holmium is a 18 relatively soft and malleable silvery-white metallic element, which is stable in dry 19 air at room temperature. A rare earth metal, it is found in the minerals monazite 20 and gadolinite. Holmium has the highest magnetic strength of any element and 21 therefore is used for the polepieces of the strongest static magnets. Because 22 holmium strongly absorbs nuclear fission-bred neutrons, it is also used in nuclear

Zeolite chemistry is the distribution of silicon and aluminium atoms among the T sites. According to *Lowensteins' rule*, Al-O-Al linkages in zeolitic frameworks are forbidden. As a result, all aluminate tetrahedra must be linked to four silicate tetrahedra, and in general this is proved to be the case, but recent investigations into zeolites synthsised at high temperatures have shown non-

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control rods.

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Lowenstein distributions in sodalite materials. Aluminum ions are formed by losing 3 electrons making it neutrally charged. The combination of negatively charged silica and aluminum produces negatively charged ions that will absorb electromagnetic waves. Negative ions are a type of antioxidant present in nature that is reported to react with and break down toxins in the bloodstream. The range of Si/Al ratios varies between zeolites. ZSM-5 is a high silicate zeolite, whereas zeolite X/Y can be prepared in high silicate forms, or high aluminate forms, but is usually produced with a Si/Al ratio close to unity with a fully ordered Si-Al distribution over the tetrahedral sites, in accordance with Lowenstein's rule. 10 The inclusion of aluminium into the zeolite structure has two major 11 12 effects: an increase in the net negative charge - which are netralised from protons 13 hydrogen bonded to the lone pairs of the bridging oxygens. These acidic sites play 14 a significant role in the zeolite catalytic activity. The materials become 15 hydrophilic. 16 Zeolites are not only influenced by pH but also they are capable of affecting 17 the solution pH. It was found out that clinoptilolite tends to neutralize the solution by acting as H+ acceptor or H+ donor (Rivera et al., 2000; Ersoy and Celik, 2002). The 18 19 pH of solution can also affect removal efficiency by affecting the integrity of zeolite. 20 Clinoptilolite is known to partially degrade and lose its ion exchange capacity in 21 Alkaline media (Mier et al., 2001). Also, clinoptilolite structure breaks down in 22 highly acidic solutions (Tsitsishvili, 1992). On the other hand, as the solution pH 23 increases, the number of negatively charged sites increases (Benhammou et al., 24 2005), Clinoptilolite-deionized water suspensions at neutral, acidic and basic pH 25 values exhibited a buffer pH around 9±1. This was also observed by Trgo and Peric 26 (2003) and at all initial pH's examined (2-11) in deionized water-clinoptilolite 27 suspensions pH became stable between 8 and 9.

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Active adsorbent materials such as zeolites, carbon molecular sieve (CMS), alumina and other porous adsorbent materials and lanthanides such as holmium can be coated onto glass fiber paper. In order to bind adsorbent particles with glass fibers and to have uniform distribution of adsorbent particles, many ingredients and additives such as retention binders may also be added into the coating solution. The final non-woven-fabric sheet (paper) will be comprised of the retention aid, the active adsorbent materials and the organic polymer. A retention aid is any material that enhances the retention of the glass fibers in the wall liner and adsorbents. The retention aid binders such as Alcoa HiQ-40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the glass fibers in the paper. Through this process, adsorbent particles tend also to be encapsulated by the boehmite binder material. Absorbent materials such as zeolites adsorbent material which includes but is not limited to zeolite type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these. Other adsorbents such as activated alumina sol, silica gel, carbon molecular sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide metals such as holmium and erbium can also be used. Discussion of the Related Art Cement is a widely used building material, but it lacks the ability to shield electromagnetic radiation. As the environment is increasingly sensitive to electronic pollution, the ability of a building to shield electromagnetic radiation is of increasing importance.

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There has been a strong demand of late for high-quality and lightweight radioactive isotope shielded building materials such as wall coverings and wall board. Stainless steel fibers reinforced concrete (SSRC), a well dispersed mixture of either short or chopped continuous or non-continuous fiber in cement in the range of .90 vol.% has been known since the 1970s. SSRC has many outstanding mechanical characteristics which are unsurpassed by conventional reinforced concretes particularly, chemical stability towards strong alkaline environment and long term durability of mechanical strength are a few essential features in the development of SSRC. Fly ash or zeolites can be substituted for cement in concrete mixes for global construction of infrastructures saving energy, disposing of waste products, protecting the environment against global warming emissions, improving the quality of concrete and reducing cost. Ultra fine fly ash can be added to silica fume to enhance the strength of concrete. Statement of Need There is a need for protecting reinforcing steel adding to the longevity of concrete structures by preventing the penetration of waterborne contaminants and chloride-laden liquids that cause the corrosion of reinforcing steel. There is a need for increased bonding strength and contact resistivity between cement and structural steel or steel fibers. Because of the developments in electronics technology, there is a need for EMI/RF/Microwave Interference shielding of building materials e.g. gypsum wallboard and concrete particularly in underground vaults containing power transformers and other electronics that are relevant to electric power and telecommunications and for deterring electromagnetic forms of spying.

There is a need for an environmentally friendly way to recycle ashes produced from the industrial combustion of coal and petroleum and the minerals and metals contained therein e.g. selenium, vanadium, nickel and holmium.

There is definitely a need for a way to trap radioactive nuclear fission products (isotopes) e.g. ¹³⁷Cs and ⁹⁰Sr accidentally or intentionally released into the environment.

SUMMARY OF THE INVENTION

Objects of the Invention

The present invention generally relates to a method of producing reinforced blended cement (e.g clinker, synthetic gypsum and petroleum coke powder), plus stainless steel fiber, fly ash and HPC to make high performance concrete for building materials that has increased density, bonding, tensile, flexural and compressive strength.

The present invention also relates to a new application, namely the use of petroleum coke powder and steel fibers as an electrically conductive filler in concrete for electromagnetic interference (EMI) shielding. EMI shielding is in critical demand due to the interference of wireless (particularly radio frequency) devices with digital devices and the increasing sensitivity of electronic devices. Shielding is particularly needed for underground vaults containing transformers and other electronics that are relevant to electric power and telecommunication. It is also needed for deterring electromagnetic forms of spying.

The high shielding effectiveness of cement paste containing steel fibers is consistent with its low electrical resistivity. Stainless steel fibers (8 mm diameter) 0.36 vol.% has very low resistivity. The resistivity is 40 Ω cm at 0.78 vol.% steel fibers (8 mm diameter). Hence, steel fibers are effective for passing current. Steel is also much more conductive than carbon. The high conductivity makes steel

fibers outstanding for shielding. In spite of the large diameter compared to other shielding materials. In fact, steel fibers (8 mm diameter) at .90 vol% reached 71 dB (1.5 GHz).

The highest two values of EMI consisted of shielding effectiveness previously reported in cement-matrix composites are 40 dB, as attained in cement paste containing 1.5 vol.% carbon filaments and 70 dB, attained in cement paste containing 0.72 vol.% stainless steel fibers of diameter 8 mm and length 6 mm.

The present invention also relates to a new application, namely the use of alkali paramagnetic materials such as Holmium or zeolites (natural or synthetic) dissolved in de-ionized water then coated onto a glass fiber substrates (paper) along with an organic washcoated polymer and used to cover building materials such as wall board and ceiling tiles and panels or as wall liner (covering) for absorption of nuclear fission products such as radioactive isotopes of cesium and strontium.

Principles in Accordance with the Present Invention

In achievement of the above objects it is suggested that concrete will be reinforced with steel fibers and coal fly ash and the addition of an organic (polysaccharide) admixture e.g. methylcellulose of the invention.

It is also suggested that EMI/RF/Microwave shielding of concrete can be achieved by cross linking or combining cellulose fibers with reflective or absorptive materials such as fly ash containing silica fume (< 6 vol.%), coke powder (1.02 vol.%), nickel plated carbon filaments (7 vol.%) or copper coated stainless steel fibers (.78 vol. %).

It is specifically suggested that EMI/RF/Microwave shielded structural and non-structural building materials can be used for lateral and distress guidance systems in automated highways, bridge pavements and levees.

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It is also specifically suggested that a stable trapping agent containing a non-radioactive isotope of the fission product may be Holmium (Ho₂O₃) or negatively charged zeolites such as Clinoptilolite and chabazite, resulting from the replacement of silicon by aluminum in the tetrahedra, interfere positively on the mechanisms of ionic exchanges. The foregoing discussion discloses and describes merely exemplary embodiments of the present invention. One skilled in the art will readily recognize from such discussion and claims that various changes, modifications and variations can be made therein without departing from the spirit and scope of the 10 invention as defined in the following claims. 11

What is claimed is:

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- 2 1. A method of using organic additives such as Hydroxypropylcellulose
- 3 (HPC) or methylcellulose and ethoxylated methylglucoside (EMG) and
- 4 petroleum coke powder (petcoke), micron size copper coated stainless steel fibers
- 5 or electroplated nickel oxide and ultra fine coal fly ash and radio stable alkali
- 6 metals or zeolites (as a radioactive trapping agent) for strength reinforcement,
- 7 waterproofing and electromagnetic, radio frequency and microwave interference
- 8 and radioisotope shielding of building materials such as concrete comprising;
- a) adding metal fibers (0.78 vol.% by weight) to cementitious material containing
- petcoke powder (1.02 vol.%) which is blended with organic mineral additives
- such as HPC or methylcellulose and ethoxylated methylglucoside (0.4 vol.%) and
- 12 ultra fine fly ash (15 vol.%) or zeolites (containing Rubidium) (5-10 vol. %) and
- silica fume (6 vol. %) and water to form a cementitious paste which is,
- b) mixed for four (4) to five (5) minutes.
- 15 2. The method of Claim 1, wherein the cementitious paste is predominantly
- 16 (>75%) composed of Portland cement or other pozzolan materials.
- 17 3. The method of Claim 1, wherein the blended cementitious paste has Class
- 18 F fly ash or natural or synthetic zeolites ground to approximately 3.8 µm
- combined with silica fume. The total content is less than 25% (by weight).
- 20 4. The method of Claim 1, wherein less than 1% of HPC (by weight) is used
- as a fiber dispersant and as a bonding agent between stainless steel fibers or
- 22 filaments, carbon and the cement matrix for enhanced magnetic permeability of
- 23 the structural steel or rebar components of buildings, roads, bridge pavements and
- 24 levees.
- 25 5. The method of Claim 1, wherein less than 1% of Methylcellulose (by
- weight) is used as a fiber dispersant and as a bonding agent between stainless steel
- 27 fibers or filaments, carbon and the cement matrix for enhanced magnetic
- permeability of the structural steel or rebar components of buildings, roads, bridge
- 29 pavements and levees.

- 1 6. The method of Claim 1, wherein less than 1% of ethoxylated
- 2 methylglucoside (by weight) is used as a waterproof bonding agent between
- 3 stainless steel fibers or filaments, carbon and the cement matrix.
- The method of Claim 1, wherein 5% stainless steel fibers (by weight) are
- 5 added to cement to improve its strength by 23% equal to 2-3 times that of non-
- 6 reinforced concrete.
- 7 8. The method of Claim 1, wherein .78% stainless steel fibers (by weight) are
- 8 added to concrete to enhance EMI/RF shielding.
- 9 9. The method of Claim 1, wherein 1.02% petroleum coke powder (by
- weight) is added to cement to enhance EMI/RF shielding.
- 10. The method of Claim 1, wherein 6% silica fume (by weight) is added to
- concrete to increase its compressive strength, reduce concrete permeability,
- improve resistance to corrosion and increase electrical resistance.
- 14 11. The method of Claim 1, wherein a metal such as 7% electroplated nickel
- oxide (by weight) is added to Portland cement blended with fly ash to enhance
- 16 EMI/RF shielding.
- 17 12. The method of Claim 1, wherein 1.02% petroleum coke powder is added
- to Portland cement to enhance EMI/RF shielding of concrete.
- 19 13. The method of Claim 1, wherein 1-3% (by weight) petroleum coke
- 20 powder is added to Portland cement and coated 5 mm thick onto pre-cast
- 21 plasterboard to enhance EMI/RF shielding.
- 22 14. The method of Claim 1, wherein 25% industrial fly ash ground to
- 23 approximately 3 µm is added to conventional Portland cement to increase its
- compressive strength and electrical resistivity.
- 25 15. A radioactivity trapping agent contained in a fissionable product absorbing
- oxide, comprising an oxygenated compound stable at high temperatures,
- including, in combination, at least one metallic or paramagnetic oxide and at least
- one oxide of a non-radioactive isotope of a radioactive fission product whose

- 1 radioactivity is to be trapped and binder retention aids.
- 2 16. A trapping agent according to Claim 15, wherein in the stable oxygenated
- 3 compound the metallic oxides are selected from the group consisting of Al₂O₃,
- 4 CeO₂, Nb₂O₅, SiO₂, TiO₂, UO₂, V₂O₃, Y₂O₃, ZrO₂, Na₂O•Al₂O₃•xSiO₂•yH₂O
- 5 and Ho_2O_3 .
- 6 17. A trapping agent according to Claim 15, wherein the metallic oxide is a
- 7 silico-aluminate, silico-zirconate, silico-niobate or silico-cerate or holmium oxide.
- 8 18. A trapping agent according to Claim 15, wherein characterized in that the
- 9 stable oxygenated compound additionally contains a stable defined compound of
- an alkali metal and/or alkaline earth metal other than the fission product to be
- 11 trapped.
- 12 19. A trapping agent according to Claim 15, wherein said stable oxygenated
- compound comprises Rb, Na or K for Cs or Ca, Ba, Mg or Be for Sr or Ho or
- 14 Clinoptilolite for all of them.
- 15 20. A Method of producing building materials such as gypsum wallboard,
- mineral fiber acoustic ceiling tiles and panels, PVC laminated gypsum ceiling
- tiles, fiberglass ceiling and acoustic panels and ceiling tiles and wall liners
- 18 containing absorbent materials such as Clinoptilolite (Zeolite) as a trapping agent
- dissolved in de-ionized water along with a retention aid coated (.001"-.002") onto
- woven or nonwoven glass fiber paper comprising:
- 21 a) the step of mixing radiation absorbing materials $\sim 60 80\%$ clinoptilolite
- 22 (Zeolite) and correspondingly 40 20% (boehmite) binder in de-ionized water
- 23 (5:1 ratio) at pH 8-9, specifically 8.5-8.9 at 28-30 °C, specifically 28.8 °C, for two
- 24 (2) minutes, then
- b) the step of applying (spraying or dipping) or coating the absorbing material
- onto a [glass fiber paper] substrate,
- and then,

- 1 c) the step of applying (coating) an organic polymer over the radiation absorbing
- 2 coated material (glass fiber paper) containing: Hydroxypropylcellulose (HPC) +
- 3 Methyl Gluceth -20 (EMG) ~ 60%:40% (ratio) in de-ionized water (20 % vol.wt)
- 4 to adjuvant EMI attenuation.
- 5 21. Absorbent materials according to Claim 20, such as zeolite adsorbent
- 6 materials includes but are not limited to zeolite type X, zeolite type A, zeolite
- 7 type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L,
- 8 chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these.
- 9 Other adsorbents such as activated alumina sol, silica gel, carbon molecular
- sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide
- metals such as holmium and erbium can also be used.
- 12 22. The retention aid binders according to Claim 20, such as BASF (Alcoa) HiQ-
- 40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles
- to the glass fibers in the paper. Through this process, adsorbent particles tend also
- to be encapsulated by the boehmite binder material.

References:

1

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13

ABSTRACT 1 2 A method is disclosed for the use of an organic admixture composed of a 3 polysaccharide such as Hydroxypropylcellulose and a monosaccharide such as ethoxylated methylglucoside and de-ionized water and metal and mineral 4 5 additives e.g. electroplated nickel oxide or copper coated stainless steel fibers, 6 ultra fine coal fly ash, silica fume and carbon based materials such as graphite and 7 petroleum coke powder and radio stable alkali paramagnetic metals such as 8 Holmium or zeolites for electromagnetic; radio and microwave frequency and 9 radioisotope shielding of building materials such as wall liners, gypsum wallboard 10 and high performance, high strength concrete.

Application or Docket Number PATENT APPLICATION FEE DETERMINATION RECORD 13/067,917 Substitute for Form PTO-875 APPLICATION AS FILED - PART I OTHER THAN SMALL ENTITY OR SMALL ENTITY (Column 1) (Column 2) RATE(\$) RATE(\$) FOR NUMBER FILED NUMBER EXTRA FEE(\$) FEE(\$) BASIC FEE N/A N/A 165 N/A N/A (37 CFR 1.16(a), (b), or (c)) SEARCH FEE N/A N/A N/A 270 N/A (37 CFR 1.16(k), (i), or (m)) **EXAMINATION FEE** N/A N/A N/A 110 N/A (37 CFR 1.16(o), (p), or (q)) TOTAL CLAIMS 22 26 52 OR minus 20 = 2 (37 CFR 1.16(i)) INDEPENDENT CLAIMS 3 110 0.00 minus 3 = (37 CFR 1.16(h)) If the specification and drawings exceed 100 APPLICATION SIZE sheets of paper, the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. FEE 0.00 (37 CFR 1.16(s)) 41(a)(1)(G) and 37 CFR 1.16(s). MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) 0.00 * If the difference in column 1 is less than zero, enter "0" in column 2. TOTAL 597 TOTAL APPLICATION AS AMENDED - PART II OTHER THAN SMALL ENTITY OR SMALL ENTITY (Column 1) (Column 2) (Column 3) CLAIMS HIGHEST REMAINING PRESENT ADDITIONAL ADDITIONAL NUMBER RATE(\$) RATE(\$) ⋖ AFTER AMENDMENT PREVIOUSLY EXTRA FEE(\$) FEE(\$) **AMENDMENT** PAID FOR Total Minus OR (37 CFR 1.16(i)) Independent (37 CFR 1.16(h)) Minus OR Application Size Fee (37 CFR 1.16(s)) FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) OR TOTAL TOTAL OR ADD'L FEE ADD'L FEE (Column 1) (Column 2) (Column 3) CLAIMS HIGHEST REMAINING NUMBER PRESENT ADDITIONAL ADDITIONAL RATE(\$) RATE(\$) Ш PREVIOUSLY **AFTER** EXTRA FEE(\$) FEE(\$) **AMENDMENT** PAID FOR **AMENDMENT** Minus Total OR (37 CFR 1.16(i)) Independent Minus OR (37 CFR 1.16(h)) Application Size Fee (37 CFR 1.16(s)) OR FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) TOTAL TOTAL OR ADD'L FEE ADD'L FEE * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20" *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3"

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APPLICATION NUMBER

FILING OR 371(C) DATE

FIRST NAMED APPLICANT

ATTY. DOCKET NO./TITLE

13/067,917

William L. Robinson, Jr. 5914 Greenspring Avenue

Baltimore, MD 21209

07/07/2011

William L. Robinson JR.

CONFIRMATION NO. 8019 FORMALITIES LETTER



Date Mailed: 09/13/2011

NOTICE OF INCOMPLETE REPLY (NONPROVISIONAL)

Filing Date Granted

The U.S. Patent and Trademark Office has received your reply on 09/02/2011 to the Notice to File Missing Parts (Notice) mailed 08/04/2011 and it has been entered into the nonprovisional application. The reply, however, does not include the following items required in the Notice. A complete reply must be timely filed to prevent ABANDONMENT of the above-identified application. Replies should be mailed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

Applicant is given TWO MONTHS from the date of the Notice to File Missing Parts (Notice) mailed 08/04/2011 within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

Items Required to Avoid Abandonment:

The required items noted below SHOULD be filed along with any items required above. The filing date of this nonprovisional application will be the date of receipt of the items required above.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

 Replacement claim(s) commencing on a separate sheet in compliance with 37 CFR 1.75(h) and 1.121 is required. Claims must be consecutively numbered and the same claim number cannot be used for more than one claim. See 37 CFR 1.126.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies should be mailed to:

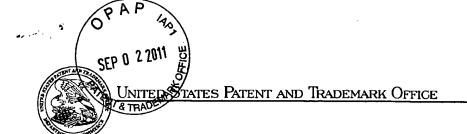
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13/067,917

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FORMALITIES LETTER

Date Mailed: 08/30/2011

NOTICE OF INCOMPLETE REPLY (NONPROVISIONAL)

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The U.S. Patent and Trademark Office has received your reply on 08/12/2011 to the Notice to File Missing Parts (Notice) mailed 08/04/2011 and it has been entered into the nonprovisional application. The reply, however, does not include the following items required in the Notice. A complete reply must be timely filed to prevent ABANDONMENT of the above-identified application. Replies should be mailed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

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Additional claim fees of \$26 as a small entity, including any required multiple dependent claim fee, are
required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are
due.

SUMMARY OF FEES DUE:

09/06/2011 JADDO1 000

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MONTHS from the date of the Notice is \$2 feed small entity

06 FC:2622

- Total additional claim fee(s) for this application is \$26
 - \$26 for 2 total claims over 20.

(A previous payment of \$24 will be applied to the additional fees indicated above.)

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Application or Docket Number PATENT APPLICATION FEE DETERMINATION RECORD 13/067,917 Substitute for Form PTO-875 APPLICATION AS FILED - PART I OTHER THAN SMALL ENTITY OR SMALL ENTITY (Column 1) (Column 2) RATE(\$) RATE(\$) FOR NUMBER FILED NUMBER EXTRA FEE(\$) FEE(\$) BASIC FEE N/A N/A 165 N/A N/A (37 CFR 1.16(a), (b), or (c)) SEARCH FEE N/A N/A N/A 270 N/A (37 CFR 1.16(k), (i), or (m)) **EXAMINATION FEE** N/A N/A N/A 110 N/A (37 CFR 1.16(o), (p), or (q)) TOTAL CLAIMS 22 26 52 OR minus 20 = 2 (37 CFR 1.16(i)) INDEPENDENT CLAIMS 3 110 0.00 minus 3 = (37 CFR 1.16(h)) If the specification and drawings exceed 100 APPLICATION SIZE sheets of paper, the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. FEE 0.00 (37 CFR 1.16(s)) 41(a)(1)(G) and 37 CFR 1.16(s). MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) 0.00 * If the difference in column 1 is less than zero, enter "0" in column 2. TOTAL 597 TOTAL APPLICATION AS AMENDED - PART II OTHER THAN SMALL ENTITY OR SMALL ENTITY (Column 1) (Column 2) (Column 3) CLAIMS HIGHEST REMAINING PRESENT ADDITIONAL ADDITIONAL NUMBER RATE(\$) RATE(\$) ⋖ AFTER AMENDMENT PREVIOUSLY EXTRA FEE(\$) FEE(\$) **AMENDMENT** PAID FOR Total Minus OR (37 CFR 1.16(i)) Independent (37 CFR 1.16(h)) Minus OR Application Size Fee (37 CFR 1.16(s)) FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) OR TOTAL TOTAL OR ADD'L FEE ADD'L FEE (Column 1) (Column 2) (Column 3) CLAIMS HIGHEST REMAINING NUMBER PRESENT ADDITIONAL ADDITIONAL RATE(\$) RATE(\$) Ш PREVIOUSLY **AFTER** EXTRA FEE(\$) FEE(\$) **AMENDMENT** PAID FOR **AMENDMENT** Minus Total OR (37 CFR 1.16(i)) Independent Minus OR (37 CFR 1.16(h)) Application Size Fee (37 CFR 1.16(s)) OR FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) TOTAL TOTAL OR ADD'L FEE ADD'L FEE * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20" *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3"

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ATTY. DOCKET NO./TITLE

APPLICATION NUMBER FILING OR 371(C) DATE FIRST NAMED APPLICANT 07/07/2011

William L. Robinson JR.

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore, MD 21209

13/067,917

CONFIRMATION NO. 8019 FORMALITIES LETTER



Date Mailed: 08/30/2011

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Items Required to Avoid Abandonment:

The required items noted below SHOULD be filed along with any items required above. The filing date of this nonprovisional application will be the date of receipt of the items required above.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

 Replacement claim(s) commencing on a separate sheet in compliance with 37 CFR 1.75(h) and 1.121 is required. Claims must be consecutively numbered and the same claim number cannot be used for more than one claim. See 37 CFR 1.126.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

• Additional claim fees of \$26 as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.

SUMMARY OF FEES DUE:

Total fee(s) required within TWO MONTHS from the date of the Notice is \$2 for a small entity

- Total additional claim fee(s) for this application is \$26
 - \$26 for 2 total claims over 20.

(A previous payment of \$24 will be applied to the additional fees indicated above.)

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8-15-11

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APPLICATION NUMBER

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ATTY. DOCKET NO./TITLE

13/067,917

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore, MD 21209

07/07/2011

William L. Robinson JR.

CONFIRMATION NO. 8019

FORMALITIES LETTER

Date Mailed: 08/04/2011

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

 The statutory basic filing fee is insufficient. Applicant must submit \$55 to complete the basic filing fee for a small entity.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required. The substitute specification must be submitted with markings and be accompanied by a clean version (without markings) as set forth in 37 CFR 1.125(c) and a statement that the substitute specification contains no new matter (see 37 CFR 1.125(b)). The specification, claims, and/or abstract page(s) submitted is not acceptable and cannot be scanned or properly stored because:
 - The line spacing on the specification, claims, and/or abstract is not 1½ or double spaced (see 37 CFR 1.52(b)).
- Replacement claim(s) commencing on a separate sheet in compliance with 37 CFR 1.75(h) and 1.121 is required. Claims must be consecutively numbered and the same claim number cannot be used for more than one claim. See 37 CFR 1.126.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

02 FC:2111 270.08 OP 03 FC:2311 110.00 OP 84 FC:2651 65.00 OP 85 FC:2282 26.00 OP 86 FC:2622 24566 OF of 2

68/16/2011 EFLURES 00000025 13067917





- Additional claim fees of \$52 as a small entity, including any required multiple dependent claim fee, are
 required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are
 due.
- A surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted.

SUMMARY OF FEES DUE:

Total fee(s) required within TWO MONTHS from the date of this Notice is \$552 for a small entity

- \$55 Statutory basic filing fee.
- •\$65 Surcharge.
- The application search fee has not been paid. Applicant must submit \$270 to complete the search fee.
- The application examination fee has not been paid. Applicant must submit \$110 to complete the examination fee for a small entity in compliance with 37 CFR 1.27.
- Total additional claim fee(s) for this application is \$52
 - \$52 for 2 total claims over 20.

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Document Code: IMIS

Notice of Fee Due

Date:	081611		
Application Number:	13067917		
Application Number.			
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*If the fee due is for surcharge. If author filing fees as well.	any of the filing fees, c ization is present, cha	heck for authorizati rge the surcharge fo	on to charge the r late payment of the
Insufficient pa	yment by check or mon	ey order.	
☐ Insufficient fu	nds in deposit account _	at	: (time).
☐ Insufficient pa	yment by credit card.		
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Total remaining due f	rom applicant:		\$ 2.00
RAM Operator			



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RE: Application #13/067,917

Attached is a check for the required fees of five hundred fifty dollars (\$550) for the missing parts of the above referenced nonprovisional application (see copy of the "Notice"). This substitute specification is being submitted pursuant to 37 CFR 1.52, 1.121 (b)(3), and 1.125. The statement that this *Specification Contains No New Matter* is required per 37 CFR 1.125(b).

1////////

Thank you.

William L Robinson, Jr Inventor – Applicant

1914 Greenspring Avenue

Baltimore, Maryland 21209-3920

(443) 320-3123 – Phone

 $\sqrt{(410)}$ 504-5258 – Ph/Fax

PTO/SB/17 (10-07) Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

AUG 1 2 2811 persons are required to respond to a collection of information unless it displays a valid OMB control number Under the Paperworld Reduction Act of 1995 Complete if Known Effective on 12/08/2004 Fees pursuant to the consplicated Approach ons Act, 2005 (H.R. 4818). 13/067,917 Application Number RANSMIT 7.7.2011 Filing Date JR. Robinson, William L First Named Inventor For FY 2008 Examiner Name Applicant claims small entity status. See 37 CFR 1.27 1731 Art Unit Attorney Docket No. TOTAL AMOUNT OF PAYMENT METHOD OF PAYMENT (check all that apply) Other (please identify): Money Order None Check Credit Card Deposit Account Name: Deposit Account Deposit Account Number. For the above-identified deposit account, the Director is hereby authorized to: (check all that apply) Charge fee(s) indicated below, except for the filing fee Charge fee(s) indicated below Charge any additional fee(s) or underpayments of fee(s) Credit any overpayments WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. FEE CALCULATION BASIC FILING, SEARCH, AND EXAMINATION FEES **EXAMINATION FEES** SEARCH FEES **FILING FEES** Small Entity Small Entity Small Entity Fees Paid (\$) Fee (\$) Fee (\$) Fee (\$) Fee (\$) Fee (\$) Application Type Fee (\$) 550 105 210 255 510 310 155 Utility 130 65 100 50 105 210 Design 160 80 155 310 210 105 Plant 310 620 510 255 310 155 Reissue 0 O 0 O 210 105 Provisional **Small Entity** 2. EXCESS CLAIM FEES Fee (\$) Fee (S) Fee Description 50 Each claim over 20 (including Reissues) 210 105 Each independent claim over 3 (including Reissues) 370 185 Multiple dependent claims Multiple Dependent Claims Fee Paid (\$) Fee (\$) Total Claims Extra Claims Fee Paid (\$) Fee (\$) 25 50 22_ - 20 or HP = HP = highest number of total claims paid for, if greater than 20. Fee Paid (\$) Extra Claims Fee (\$) - 3 or HP = HP = highest number of independent claims paid for, if greater than 3. 3. APPLICATION SIZE FEE If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$260 (\$130 for small entity) for each additional 50 Fee Paid (\$) Total Sheets (round up to a whole number) x 150 =Fees Paid (\$) 4. OTHER FEE(S) Non-English Specification, \$130 fee (no small entity discount) Other (e.g., late filing surcharge)

SUBMITTED BY Registration No. Telephone 4433203123 Signature (Attorney/Agent) August 15, Jr. Kab Mnson, William Name (Print/Type)

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 mirrutes to complete, unspection of process, an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 mirrutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this forward/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office. U.S. Department of Commence P.O. Box 1450. Alexandria, VA 27313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/05 (07-07)

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UTILITY
PATENT APPLICATION
TRANSMITTAL

AUG 1 2 2011 No

Attorney Docket No.	
First Inventor	Wm L. Robinson, Jr.
Title	Inventor
_	

(Only fo	r new nonprovisional applications under 37 CFR 1.53(b))	Express Mail Label No.			
See MPEI	APPLICATION ELEMENTS chapter 600 concerning utility patent application contents.	ADDRESS TO:	Commissioner for Patents P.O. Box 1450 Alexandria VA 22313-1450		
1. Fee Transmittal Form (e.g., PTO/SB/17)		ACCOMPANYING APPLICATION PARTS			
2. L Appli	nit an original and a œuplicate for fee processing) cant claims small entity status. 37 CFR 1.27.			heet & document(s))	
3. 7 Spec	iffication [Total Pages] the claims and abstract must start on a new page	Name of Assignee			
(For in	formation on the preferred arrangement, see MPEP 608.01(a)) ring(s) (35 U.S.C. 113) [Total Sheets]				
5. Oath or D		10. 37 CFR 3.73(b)	10.		
b. 🔲 A	ewly executed (original or copy) copy from a prior application (37 CFR 1.63(d))	(when there is	an assignee)	Attorney	
i. 🗀	or continuation/divisional with Box 18 completed) DELETION OF INVENTOR(S)	11. English Transla		, ,,	
	Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).		closure State of citations atta	ment (PTO/SB/08 or PTO-1449) ached	
6.	cation Data Sheet. See 37 CFR 1.76	13. Preliminary Am	endment		
Çony	OM or CD-R in duplicate, large table or puter Program (<i>Appendix)</i> Landscape Table on CD	14. Return Receipt Postcard (MPEP 503) (Should be specifically itemized)			
	e and/or Amino Acid Sequence Submission	15. Certified Copy of Priority Document(s) (if foreign priority is claimed)			
(if applicable, items a c. are required) a. Computer Readable Form (CRF) b. Specification Sequence Listing on:		16. Nonpublication Request under 35 U.S.C. 122(b)(2)(B)(i).			
	CD-ROM or CD-R (2 copies); or	Applicant must attach form PTO/SB/35 or equivalent.			
ii. (Paper	17. U Other:			
с. 🗆	Statements verifying identity of above copies				
	NUING APPLICATION, check appropriate box, and supp flowing the title, or in an Application Data Sheet under 37		elow and in th	he first sentence of the	
Conti	nuation Divisional Continuati	n-in-part (CIP) of prior application No.:			
Prior application	information: Examiner	Art Unit:			
	19. CORRESPOND	ENCE ADDRESS		,,,,	
The address associated with Customer Number:					
Name William L. Robinson, Jr.					
5914 Greenspring Avenue					
City	Baltimore, State	Maryland	Zip Code	21209-3920	
Country	Telephone	443 320-3123	Email	bactow@aol.com	
Signature	1/4////////////////////////////////////	Date	Augu		
Name (Print/Type)	William L. Robinson, Jr		Registration (Attorney/Ag		
	22/05/05/05/05/05/05/05/05/05/05/05/05/05/		<u> </u>		

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTO/SB/01 (07-07) Approved for use through 06/30/2010, OMB 0651-0032 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE rwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number. **Attomey Docket** ARATION FOR UTILITY OR Number First Named Inventor DESIGN Wm L. Robinson, PATENT APPLICATION COMPLETE IF KNOWN (37 CFR 1.63) **Application Number** 13/067,917 Filing Date Declaration Declaration 7.7.2011 Submitted Submitted after Initial With Initial Filing (surcharge **Art Unit** 1731 Filing (37 CFR 1.16 (e)) Examiner Name required) I hereby declare that: Each inventor's residence, mailing address, and citizenship are as stated below next to their name. I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled: Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete (Title of the Invention): the specification of which is attached hereto OR was filed on (MM/DD/YYYY) as United States Application Number or PCT International Application Number and was amended on (MM/DD/YYYY) (if applicable). I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application. I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed. Prior Foreign Application Foreign Filing Date Priority **Certified Copy Attached?** Country (MM/DD/YYYY) Number(s) **Not Claimed** YES 1-2008-00779 MM03/28/2008

Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450, DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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DECLARATION — Utility or Design Patent Application

					, ,	
Direct all correspondence to:	The address associated with Customer Numbe	er:		OR		Correspondence address below
Name Willia	m L. Robin	son, Jr				
Address 5914 G	reenspring	Avenue				
City Baltim	ore		State Maryland		· · ·	21209
Country USA		Telephone 443 320-3	3123	Emai ba		w@aol.com
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publication of the application or issuance of a patent. For application is referenced in authorization forms PTO-20 publicly available. I hereby declare that all state and belief are believed to statements and the like so malse statements may jeopare.	ioner/applicant is an (unless a non-puburthermore, the reconstruction a published applicable applicable and submitted for particles and further and are punishable dize the validity of the control of th	in of my own knowler that these state by fine or imprisor that these state by fine or imprisor that these application or an imprisor that these states by fine or imprisor that these states by fine or imprisor that these states are by fine or imprisor that these states are that these states are that these states are that these states are that these states are that these states are that these states are that these states are the states are that these states are the sta	cord of a patent apprompliance with 37 Coned application maked patent (see 37 re not retained in the edge are true and the ements were made nament, or both, under patent issued there	e application from 1.21 y also be CFR 1.21 application at all structure with the er 18 U.S.	is avai 3(a) is be avail 14). C ation fil atemen a know S.C. 10	lable to the public after made in the application) able to the public if the checks and credit card e and therefore are not at made on information dedge that willful false on and that such willful
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PTO/SB/35 (10-07)
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NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)

First Nam	ned Inventor	William L. Robinson,	JR.
Title		Inventor	
Attorney	Docket Number		

I hereby certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

I hereby request that the atrached application not be published under 35 U.S.C. 122(b).

August 15, 2011

Signature

Date

Typed or printed name

443 320-3123

Telephone Number

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application upon filing.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant must notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).

This collection of information is required by 37 CFR 1.213(a). The Information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



IN THE UNITED STATES PATENT OFFICE

Inventor:

William L. Robinson, Jr.

Title: Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance,

High Strength Concrete.

REQUEST FOR NON-PUBLICATION

Applicant for the above identified Application for U.S. Utility Patent entitled "Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete" hereby avers that the invention described and claimed therein has not been and will not be the subject of an application filed in another country, or under international agreement, that requires eighteen month publication and hereby respectfully request nonpublication of said application.

Respectfully yours,

William L. Robinson, Jr.

August 15, 201

AUG 1 2 2011 W AUG 1 2 2011 Applicant:

IN THE UNITED STATES PATENT OFFICE

pplicant: William L. Robinson, Jr.

Title: Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete.

DECLARATION

I, William L. Robinson, Jr., citizen of the United States of America, possessing as a legal residential and mailing address 5914 Greenspring Avenue, Baltimore, Maryland 21209, hereby, declare that I am the sole inventor and believe that I am the original and first inventor of the subject matter for which a patent is sought, said subject matter being expressed in the specification contained in the Application attached hereto entitled: "Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete." I further declare that I have reviewed and understand the contents of said specification and I acknowledge the duty to disclose information which is material to the examination of the application in accordance with 37 CFR 1.56(a).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18 USC 1001, and that such willful false statements may jeopardize the validity of the Application or any Patent issued thereon.

William L. Robinson, Jr.

August 15, 2011
Date Executed

AUG 1 2 2011 PARADEMARK

IN THE UNITED STATES PATENT OFFICE

Applicant:

William L. Robinson, Jr.

Title: Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete.

Small Entity Declaration – Independent Inventor

I, William L. Robinson, Jr., sole inventor, hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under35 USC 41 (a) & (b), to the United States Patent Office with regard to my above invention described in the specification filed herewith. I further declare that I have not assigned, granted, conveyed or licensed, and am not under any obligation under any contract or law to assign, grant, convey or license, any rights in the invention to any entity which would not qualify as a small entity.

I acknowledge a duty to file, in the above identified Application for Patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity no longer appropriate (37 CFR 1.28(b)).

I hereby declare that all the statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18 USC 1001, and that such willful false statements may jeopardize the validity of the Application or any Patent Issued thereon.

William L. Røbinson, Jr.

August 15, 2011

Date Executed

PETITION UNDER MPEP 708.02 XL: INVENTIONS FOR COUNTERING TERRORISM

Statement of How the Invention Contributes To Countering Terrorism

Petitioner respectfully submits that the present invention will provide protection to electronic systems e.g. computers by providing RF/MI shielding of both electronics and radiation sources which is needed and required by governments around the world to combat cyber eavesdropping (spying).

According to the President of the United States: America has for too long failed to adequately protect the security of its computer networks, President Barack Obama said the U.S. has reached a "transformational moment" when computer networks are probed and attacked millions of times a day.

"It's now clear this cyber threat is one of the most serious economic and national security challenges we face as a nation," Obama said, adding, "We're not as prepared as we should be, as a government or as a country."

Request to Make Application Special

Petitioner respectfully submits that the present invention will materially contribute to countering terrorism for the reasons given in the above explanation and respectfully request that said application be made special by the United States Patent and Trademark Office under MPEP 807.02 XI in view of the importance of developing technologies for countering terrorism and the desirability of prompt disclosure of advances made in these fields.

Illiam L. Robinson, Jr.

PETITION UNDER MPEP 708.02, 37 CFR 1.102: GREEN TECHNOLOGY PILOT PROGRAM INVENTIONS

Statement of How the Invention Contributes To Utilization of Green Technologies

Petitioner respectfully submits that the present invention will materially contribute to: (1) The discovery or development of renewable energy resources; and (2) the more efficient utilization and conservation of energy resources. The term "renewable energy resources" for purposes of the procedure specified in this notice includes hydroelectric, solar, wind, renewable biomass, landfill gas, ocean (including tidal, wave, current, and thermal), geothermal, and municipal solid waste, as well as the transmission, distribution, or other services directly used in providing electrical energy from these sources (A-15, D15,16)

This application is a non-reissue, non-provisional utility application filed under 35 U.S.C. 111(a), and the application is classified in one of the U.S. classifications listed in section VI of the United States Patent and Trademark Office, [Docket No. PTO-P-2009-0038] Pilot Program for Green Technologies Including Greenhouse Gas Reduction.

Request to Make Application Special

Petitioner respectfully submits that the present invention will materially contribute to developing green technologies for the reasons given in the specifications and the above explanation and respectfully request that said application be made special by the United States Patent and Trademark Office under MPEP 807.02 in view of the importance of developing technologies for applications pertaining to environmental quality, energy conservation, development of renewable energy, or greenhouse gas emission reduction and may be advanced out of turn for examination without meeting all of the current requirements of the accelerated examination program (e.g., number of

William L. Robinson, Jr.

Respectfully yours

claims).

An Application for Utility Patent Filed in:

THE UNITED STATES PATENT OFFICE

On behalf of the Inventor:

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Further respectfully possessing as legal residential and postal address:

5914 Greenspring Avenue, Baltimore, Maryland 21209-3920

1	ADSTRACT
2	A method is disclosed for the use of an organic admixture composed of a
3	polysaccharide such as Hydroxypropylcellulose and a monosaccharide such as
4	ethoxylated methylglucoside and de-ionized water and metal and mineral
5	additives e.g. electroplated nickel oxide or copper coated stainless steel fibers,
6	ultra fine coal fly ash, silica fume and carbon based materials such as graphite and
7	petroleum coke powder and radio stable alkali paramagnetic metals such as
8	Holmium or zeolites for electromagnetic; radio and microwave frequency and
9	radioisotope shielding of building materials such as wall liners, gypsum wallboard
10	and high performance, high strength concrete.

Claim of Benefit of Earlier Filing Dates

This application claims benefit of the earlier filing dates, National Filing of Patent Application in Vietnam No. 1-2008-00779 and May 9, 2011, Nonprovisional Application No. 61/457,664 in the name of the Applicant, William L. Robinson, Jr., of Baltimore, Maryland and entitled "Method and use of organic admixtures to waterproof and provide EMI/RFI shielding to paper and concrete" and "Method And Use Of Organic Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete", respectively.

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to a method of increasing the tensile, flexural and compressive strengths and the EMI/RF/Microwave and radioactive isotope shielding of concrete, cement, gypsum or other pozzolan (alumina siliceous) such as fly ash using electroplated nickel oxide or copper coated stainless steel fibers, hydroxypropyl cellulose, ethoxylated methylglucoside, petroleum coke powder or graphite and silica fume and non-radioactive alkali metals such as holmium and natural zeolites such as Clinoptilolite as radioactive trapping agents.

General Background

Electric utilities in the United States generate over 100 million tons of petroleum coke ash and coal fly ash as a by-product each year. Fly ash in particular is typically disposed of in landfills. Course fly ash ground to approximately 3.8 µm can produce high strength concrete and 25% cement replacement gave the highest compressive strength (100.3 MPa). A replacement of 25% cement will result in a 27% reduction in greenhouse gases produced from production of cement (680 Kg/ton of cement).

1 The cement industry is responsible for producing 5% of global CO₂ 2 emissions; 60% due to decarbonization of non-renewable materials such as 3 limestone and 40% due to heating cement kilns to 1500 °C using non-renewable 4 fossil fuels. 5 Adding .90 vol.% stainless steel fibers (by weight) to cement improves 6 strength by 23% equal to 2-3 times that of non-reinforced concrete. The dominant 7 mechanisms of EM/RF/Microwave shielding for micron size (>100 nm) steel 8 fibers is absorption. Nickel filaments of diameter 0.4 µm, as made by 9 electroplating 0.1 µm diameter carbon filaments with nickel, have been shown to 10 be particularly effective. They are known as nickel filaments because they are 11 mostly nickel rather than carbon. A shielding effectiveness of 87 dB at 1 GHz has 12 been attained in a polymer-matrix composite containing just 7 vol.% nickel 13 filaments. Nickel is more attractive than copper, partly due to its superior 14 oxidation resistance. 15 Shielding of 40dB or more in the magnetic field ranging from 150 kHz to 16 16 MHz is needed for a 99 % EMI block. This degree of shielding effectiveness is 17 sufficient to for the construction of electromagnetic interference structures. 18 Binding Properties of Calcium Hydroxide or Hydrated Lime (CaCO₃) with 19 HPC. 20 Calcium hydroxide or hydrated lime is the product of the hydration of lime 21 and water: $Ca(OH)_2 < = = = > CaO + H_2O$ 22 Lime is a soft, white amorphous powder with alkaline or slightly bitter taste. It 23 has been shown that lime is solubilised in the presence of sugars and it has been 24 observed in set Portland cements as hexagonal plate crystals (Lea, 1970). Lime 25 reacts with carbon dioxide (CO₂) to form calcium carbonate (CaCO₃). This 26 reaction which takes place in the presence of moisture is the cause of hardening of 27 high calcium lime mortars.

1 **Binding Properties of HPC with Steel Fiber and Cement** 2 HPC and Ethoxylated methyl glucoside (moisture barrier) binds together 3 at the 1-3' C-Terminal Domain. How does HPC bind to calcium in concrete? In 4 the presence of water calcium located at the N-Terminal Cellulose Binding 5 Domain in HPC will bind to calcium bonds at the 1-4' \beta calcium bonding sites in 6 cement. 7 The use of hydroxypropyl cellulose or methylcellulose (0.4% to 0.8% by 8 weight of cement) as an admixture in cement paste or concrete was found to 9 increase the shear bond strength with steel reinforcing bar and steel fiber. The 10 bond strength increased with increasing hydroxypropyl cellulose or 11 methylcellulose amounts. The contact electrical resistivity between cement and 12 fiber or between concrete and reinforcing bar was not changed by addition of 13 hydroxypropyl cellulose or methylcellulose. 14 Trapping of Radioactive Fission Products (Isotopes) Using Non-Radioactive **Stable Metallic Elements** 15 16 Holmium (hoʊlmiəm/ HOHL-mee-əm) is a chemical element with the 17 symbol Ho and atomic number 67. Part of the lanthanide series, holmium is a relatively soft and malleable silvery-white metallic element, which is stable in dry 18 . 19 air at room temperature. A rare earth metal, it is found in the minerals monazite 20 and gadolinite. Holmium has the highest magnetic strength of any element and 21 therefore is used for the polepieces of the strongest static magnets. Because 22 holmium strongly absorbs nuclear fission-bred neutrons, it is also used in nuclear control rods. 23 24 **Zeolite** chemistry is the distribution of silicon and aluminium atoms among the T sites. According to Lowensteins' rule, Al-O-Al linkages in zeolitic 25 26 frameworks are forbidden. As a result, all aluminate tetrahedra must be linked to 27 four silicate tetrahedra, and in general this is proved to be the case, but recent 28 investigations into zeolites synthsised at high temperatures have shown non-

1 Lowenstein distributions in sodalite materials. Aluminum ions are formed by 2 losing 3 electrons making it neutrally charged. The combination of negatively 3 charged silica and aluminum produces negatively charged ions that will absorb 4 electromagnetic waves. Negative ions are a type of antioxidant present in nature 5 that is reported to react with and break down toxins in the bloodstream. 6 The range of Si/Al ratios varies between zeolites. ZSM-5 is a high silicate 7 zeolite, whereas zeolite X/Y can be prepared in high silicate forms, or high 8 aluminate forms, but is usually produced with a Si/Al ratio close to unity with a 9 fully ordered Si-Al distribution over the tetrahedral sites, in accordance with 10 Lowenstein's rule. 11 The inclusion of aluminium into the zeolite structure has two major 12 effects: an increase in the net negative charge - which are netralised from protons 13 hydrogen bonded to the lone pairs of the bridging oxygens. These acidic sites play 14 a significant role in the zeolite catalytic activity. The materials become 15 hydrophilic. 16 **Zeolites** are not only influenced by pH but also they are capable of affecting 17 the solution pH. It was found out that clinoptilolite tends to neutralize the solution by 18 acting as H+ acceptor or H+ donor (Rivera et al., 2000; Ersoy and Çelik, 2002). The pH of solution can also affect removal efficiency by affecting the integrity of zeolite. 19 20 Clinoptilolite is known to partially degrade and lose its ion exchange capacity in 21 Alkaline media (Mier et al., 2001). Also, clinoptilolite structure breaks down in 22 highly acidic solutions (Tsitsishvili, 1992). On the other hand, as the solution pH 23 increases, the number of negatively charged sites increases (Benhammou et al., 24 2005), Clinoptilolite-deionized water suspensions at neutral, acidic and basic pH 25 values exhibited a buffer pH around 9±1. This was also observed by Trgo and Peric 26 (2003) and at all initial pH's examined (2-11) in deionized water-clinoptilolite 27 suspensions pH became stable between 8 and 9.

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Active adsorbent materials such as zeolites, carbon molecular sieve (CMS), alumina and other porous adsorbent materials and lanthanides such as holmium can be coated onto glass fiber paper. In order to bind adsorbent particles with glass fibers and to have uniform distribution of adsorbent particles, many ingredients and additives such as retention binders may also be added into the coating solution. The final non-woven-fabric sheet (paper) will be comprised of the retention aid, the active adsorbent materials and the organic polymer. A retention aid is any material that enhances the retention of the glass fibers in the wall liner and adsorbents. The retention aid binders such as Alcoa HiQ-40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the glass fibers in the paper. Through this process, adsorbent particles tend also to be encapsulated by the boehmite binder material. Absorbent materials such as zeolites adsorbent material which includes but is not limited to zeolite type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these. Other adsorbents such as activated alumina sol, silica gel, carbon molecular sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide metals such as holmium and erbium can also be used. Discussion of the Related Art Cement is a widely used building material, but it lacks the ability to shield electromagnetic radiation. As the environment is increasingly sensitive to electronic pollution, the ability of a building to shield electromagnetic radiation is of increasing importance.

There has been a strong demand of late for high-quality and lightweight radioactive isotope shielded building materials such as wall coverings and wall board. Stainless steel fibers reinforced concrete (SSRC), a well dispersed mixture of either short or chopped continuous or non-continuous fiber in cement in the range of .90 vol.% has been known since the 1970s. SSRC has many outstanding mechanical characteristics which are unsurpassed by conventional reinforced concretes particularly, chemical stability towards strong alkaline environment and long term durability of mechanical strength are a few essential features in the development of SSRC.

Fly ash or zeolites can be substituted for cement in concrete mixes for global construction of infrastructures saving energy, disposing of waste products, protecting the environment against global warming emissions, improving the quality of concrete and reducing cost. Ultra fine fly ash can be added to silica fume to enhance the strength of concrete.

Statement of Need

There is a need for protecting reinforcing steel adding to the longevity of concrete structures by preventing the penetration of waterborne contaminants and chloride-laden liquids that cause the corrosion of reinforcing steel.

There is a need for increased bonding strength and contact resistivity between cement and structural steel or steel fibers.

Because of the developments in electronics technology, there is a need for EMI/RF/Microwave Interference shielding of building materials e.g. gypsum wallboard and concrete particularly in underground vaults containing power transformers and other electronics that are relevant to electric power and telecommunications and for deterring electromagnetic forms of spying.

There is a need for an environmentally friendly way to recycle ashes produced from the industrial combustion of coal and petroleum and the minerals and metals contained therein e.g. selenium, vanadium, nickel and holmium.

There is definitely a need for a way to trap radioactive nuclear fission products (isotopes) e.g. ¹³⁷Cs and ⁹⁰Sr accidentally or intentionally released into the environment.

SUMMARY OF THE INVENTION

Objects of the Invention

The present invention generally relates to a method of producing reinforced blended cement (e.g clinker, synthetic gypsum and petroleum coke powder), plus stainless steel fiber, fly ash and HPC to make high performance concrete for building materials that has increased density, bonding, tensile, flexural and compressive strength.

The present invention also relates to a new application, namely the use of petroleum coke powder and steel fibers as an electrically conductive filler in concrete for electromagnetic interference (EMI) shielding. EMI shielding is in critical demand due to the interference of wireless (particularly radio frequency) devices with digital devices and the increasing sensitivity of electronic devices. Shielding is particularly needed for underground vaults containing transformers and other electronics that are relevant to electric power and telecommunication. It is also needed for deterring electromagnetic forms of spying.

The high shielding effectiveness of cement paste containing steel fibers is consistent with its low electrical resistivity. Stainless steel fibers (8 mm diameter) 0.36 vol.% has very low resistivity. The resistivity is 40 Ω cm at 0.78 vol.% steel fibers (8 mm diameter). Hence, steel fibers are effective for passing current. Steel is also much more conductive than carbon. The high conductivity makes steel

fibers outstanding for shielding. In spite of the large diameter compared to other shielding materials. In fact, steel fibers (8 mm diameter) at .90 vol% reached 71 dB (1.5 GHz).

The highest two values of EMI consisted of shielding effectiveness previously reported in cement-matrix composites are 40 dB, as attained in cement paste containing 1.5 vol.% carbon filaments and 70 dB, attained in cement paste containing 0.72 vol.% stainless steel fibers of diameter 8 mm and length 6 mm.

The present invention also relates to a new application, namely the use of alkali paramagnetic materials such as Holmium or zeolites (natural or synthetic) dissolved in de-ionized water then coated onto a glass fiber substrates (paper) along with an organic washcoated polymer and used to cover building materials such as wall board and ceiling tiles and panels or as wall liner (covering) for absorption of nuclear fission products such as radioactive isotopes of cesium and strontium.

Principles in Accordance with the Present Invention

In achievement of the above objects it is suggested that concrete will be reinforced with steel fibers and coal fly ash and the addition of an organic (polysaccharide) admixture e.g. methylcellulose of the invention.

It is also suggested that EMI/RF/Microwave shielding of concrete can be achieved by cross linking or combining cellulose fibers with reflective or absorptive materials such as fly ash containing silica fume (< 6 vol.%), coke powder (1.02 vol.%), nickel plated carbon filaments (7 vol.%) or copper coated stainless steel fibers (.78 vol. %).

It is specifically suggested that EMI/RF/Microwave shielded structural and non-structural building materials can be used for lateral and distress guidance systems in automated highways, bridge pavements and levees.

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It is also specifically suggested that a stable trapping agent containing a non-radioactive isotope of the fission product may be Holmium (Ho₂O₃) or negatively charged zeolites such as Clinoptilolite and chabazite, resulting from the replacement of silicon by aluminum in the tetrahedra, interfere positively on the mechanisms of ionic exchanges. The foregoing discussion discloses and describes merely exemplary embodiments of the present invention. One skilled in the art will readily recognize from such discussion and claims that various changes, modifications and variations can be made therein without departing from the spirit and scope of the invention as defined in the following claims. What is claimed is: 1. A method of using organic additives such as Hydroxypropylcellulose (HPC) or methylcellulose and ethoxylated methylglucoside (EMG) and petroleum coke powder (petcoke), micron size copper coated stainless steel fibers or electroplated nickel oxide and ultra fine coal fly ash and radio stable alkali metals or zeolites (as a radioactive trapping agent) for strength reinforcement, waterproofing and electromagnetic, radio frequency and microwave interference and radioisotope shielding of building materials such as concrete comprising; a) adding metal fibers (0.78 vol.% by weight) to cementitious material containing petcoke powder (1.02 vol.%) which is blended with organic mineral additives such as HPC or methylcellulose and ethoxylated methylglucoside (0.4 vol.%) and ultra fine fly ash (15 vol.%) or zeolites (containing Rubidium) (5-10 vol. %) and silica fume (6 vol. %) and water to form a cementitious paste which is, b) mixed for four (4) to five (5) minutes. 2. The method of Claim 1, wherein the cementitious paste is predominantly (>75%) composed of Portland cement or other pozzolan materials.

- 1 3. The method of Claim 1, wherein the blended cementitious paste has Class
- 2 F fly ash or natural or synthetic zeolites ground to approximately 3.8 µm
- 3 combined with silica fume. The total content is less than 25% (by weight).
- 4. The method of Claim 1, wherein less than 1% of HPC (by weight) is used
- as a fiber dispersant and as a bonding agent between stainless steel fibers or
- 6 filaments, carbon and the cement matrix for enhanced magnetic permeability of
- 7 the structural steel or rebar components of buildings, roads, bridge pavements and
- 8 levees.
- 5. The method of Claim 1, wherein less than 1% of Methylcellulose (by
- weight) is used as a fiber dispersant and as a bonding agent between stainless steel
- fibers or filaments, carbon and the cement matrix for enhanced magnetic
- permeability of the structural steel or rebar components of buildings, roads, bridge
- pavements and levees.
- 14 6. The method of Claim 1, wherein less than 1% of ethoxylated
- methylglucoside (by weight) is used as a waterproof bonding agent between
- stainless steel fibers or filaments, carbon and the cement matrix.
- 7. The method of Claim 1, wherein 5% stainless steel fibers (by weight) are
- added to cement to improve its strength by 23% equal to 2-3 times that of non-
- 19 reinforced concrete.
- 20 8. The method of Claim 1, wherein .78% stainless steel fibers (by weight) are
- added to concrete to enhance EMI/RF shielding.
- 22 9. The method of Claim 1, wherein 1.02% petroleum coke powder (by
- weight) is added to cement to enhance EMI/RF shielding.
- 10. The method of Claim 1, wherein 6% silica fume (by weight) is added to
- concrete to increase its compressive strength, reduce concrete permeability,
- improve resistance to corrosion and increase electrical resistance.
- 27 11. The method of Claim 1, wherein a metal such as 7% electroplated nickel
- oxide (by weight) is added to Portland cement blended with fly ash to enhance
- 28 EMI/RF shielding.

- 1 12. The method of Claim 1, wherein 1.02% petroleum coke powder is added
- 2 to Portland cement to enhance EMI/RF shielding of concrete.
- 3 13. The method of Claim 1, wherein 1-3% (by weight) petroleum coke
- 4 powder is added to Portland cement and coated 5 mm thick onto pre-cast
- 5 plasterboard to enhance EMI/RF shielding.
- 6 14. The method of Claim 1, wherein 25% industrial fly ash ground to
- 7 approximately 3 µm is added to conventional Portland cement to increase its
- 8 compressive strength and electrical resistivity.
- 9 15. A radioactivity trapping agent contained in a fissionable product absorbing
- oxide, comprising an oxygenated compound stable at high temperatures,
- including, in combination, at least one metallic or paramagnetic oxide and at least
- one oxide of a non-radioactive isotope of a radioactive fission product whose
- radioactivity is to be trapped and binder retention aids.
- 14 16. A trapping agent according to Claim 15, wherein in the stable oxygenated
- compound the metallic oxides are selected from the group consisting of Al₂O₃,
- 16 CeO₂, Nb₂O₅, SiO₂, TiO₂, UO₂, V₂O₃, Y₂O₃, ZrO₂, Na₂O•Al₂O₃•xSiO₂•yH₂O
- 17 and Ho_2O_3 .
- 18 17. A trapping agent according to Claim 15, wherein the metallic oxide is a
- silico-aluminate, silico-zirconate, silico-niobate or silico-cerate or holmium oxide.
- 20 18. A trapping agent according to Claim 15, wherein characterized in that the
- 21 stable oxygenated compound additionally contains a stable defined compound of
- an alkali metal and/or alkaline earth metal other than the fission product to be
- 23 trapped.
- 24 19. A trapping agent according to Claim 15, wherein said stable oxygenated
- compound comprises Rb, Na or K for Cs or Ca, Ba, Mg or Be for Sr or Ho or
- 26 Clinoptilolite for all of them.
- 27 20. A Method of producing building materials such as gypsum wallboard,

- 1 mineral fiber acoustic ceiling tiles and panels, PVC laminated gypsum ceiling
- 2 tiles, fiberglass ceiling and acoustic panels and ceiling tiles and wall liners
- 3 containing absorbent materials such as Clinoptilolite (Zeolite) as a trapping agent
- 4 dissolved in de-ionized water along with a retention aid coated (.001"-.002") onto
- 5 woven or nonwoven glass fiber paper comprising:
- 6 a) the step of mixing radiation absorbing materials $\sim 60 80\%$ clinoptilolite
- 7 (Zeolite) and correspondingly 40 20% (boehmite) binder in de-ionized water
- 8 (5:1 ratio) at pH 8-9, specifically 8.5-8.9 at 28-30 °C, specifically 28.8 °C, for two
- 9 (2) minutes, then
- b) the step of applying (spraying or dipping) or coating the absorbing material
- onto a [glass fiber paper] substrate,
- 12 and then,
- c) the step of applying (coating) an organic polymer over the radiation absorbing
- 14 coated material (glass fiber paper) containing: Hydroxypropylcellulose (HPC) +
- 15 Methyl Gluceth -20 (EMG) ~ 60%:40% (ratio) in de-ionized water (20 % vol.wt)
- to adjuvant EMI attenuation.
- 17 **21**. Absorbent materials according to Claim 20, such as zeolite adsorbent
- materials includes but are not limited to zeolite type X, zeolite type A, zeolite
- 19 type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L,
- 20 chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these.
- 21 Other adsorbents such as activated alumina sol, silica gel, carbon molecular
- sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide
- 23 metals such as holmium and erbium can also be used.
- 24 22. The retention aid binders according to Claim 20, such as BASF (Alcoa) HiQ-
- 40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles
- 26 to the glass fibers in the paper. Through this process, adsorbent particles tend also
- to be encapsulated by the boehmite binder material.

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On behalf of the Inventor:

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l	ABSTRACT
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5	additives e.g. electroplated nickel oxide or copper coated stainless steel fibers,
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Electric utilities in the United States generate over 100 million tons of petroleum coke ash and coal fly ash as a by-product each year. Fly ash in particular is typically disposed of in landfills. Course fly ash ground to approximately 3.8 µm can produce high strength concrete and 25% cement replacement gave the highest compressive strength (100.3 MPa). A replacement of 25% cement will result in a 27% reduction in greenhouse gases produced from production of cement (680 Kg/ton of cement).

1 The cement industry is responsible for producing 5% of global CO2 2 emissions; 60% due to decarbonization of non-renewable materials such as 3 limestone and 40% due to heating cement kilns to 1500 °C using non-renewable 4 fossil fuels. 5 Adding .90 vol.% stainless steel fibers (by weight) to cement improves 6 strength by 23% equal to 2-3 times that of non-reinforced concrete. The dominant 7 mechanisms of EM/RF/Microwave shielding for micron size (>100 nm) steel 8 fibers is absorption. Nickel filaments of diameter 0.4 µm, as made by 9 electroplating 0.1 µm diameter carbon filaments with nickel, have been shown to 10 be particularly effective. They are known as nickel filaments because they are 11 mostly nickel rather than carbon. A shielding effectiveness of 87 dB at 1 GHz has 12 been attained in a polymer-matrix composite containing just 7 vol.% nickel 13 filaments. Nickel is more attractive than copper, partly due to its superior 14 oxidation resistance. Shielding of 40dB or more in the magnetic field ranging from 150 kHz to 15 16 16 MHz is needed for a 99 % EMI block. This degree of shielding effectiveness is 17 sufficient to for the construction of electromagnetic interference structures. 18 Binding Properties of Calcium Hydroxide or Hydrated Lime (CaCO₃) with HPC. 19 20 Calcium hydroxide or hydrated lime is the product of the hydration of lime $Ca(OH)_2 < = = = > CaO + H_2O$ 21 and water: 22 Lime is a soft, white amorphous powder with alkaline or slightly bitter taste. It 23 has been shown that lime is solubilised in the presence of sugars and it has been observed in set Portland cements as hexagonal plate crystals (Lea, 1970). Lime 24 25 reacts with carbon dioxide (CO₂) to form calcium carbonate (CaCO₃). This 26 reaction which takes place in the presence of moisture is the cause of hardening of 27 high calcium lime mortars.

1 Binding Properties of HPC with Steel Fiber and Cement 2 HPC and Ethoxylated methyl glucoside (moisture barrier) binds together 3 at the 1-3' C-Terminal Domain. How does HPC bind to calcium in concrete? In 4 the presence of water calcium located at the N-Terminal Cellulose Binding 5 Domain in HPC will bind to calcium bonds at the 1-4' β calcium bonding sites in 6 cement. 7 The use of hydroxypropyl cellulose or methylcellulose (0.4% to 0.8% by 8 weight of cement) as an admixture in cement paste or concrete was found to 9 increase the shear bond strength with steel reinforcing bar and steel fiber. The 10 bond strength increased with increasing hydroxypropyl cellulose or 11 methylcellulose amounts. The contact electrical resistivity between cement and 12 fiber or between concrete and reinforcing bar was not changed by addition of 13 hydroxypropyl cellulose or methylcellulose. 14 Trapping of Radioactive Fission Products (Isotopes) Using Non-Radioactive 15 **Stable Metallic Elements** 16 Holmium (hoʊlmiəm/ HOHL-mee-əm) is a chemical element with the 17 symbol Ho and atomic number 67. Part of the lanthanide series, holmium is a 18 relatively soft and malleable silvery-white metallic element, which is stable in dry 19 air at room temperature. A rare earth metal, it is found in the minerals monazite 20 and gadolinite. Holmium has the highest magnetic strength of any element and 21 therefore is used for the polepieces of the strongest static magnets. Because 22 holmium strongly absorbs nuclear fission-bred neutrons, it is also used in nuclear 23 control rods. 24 **Zeolite** chemistry is the distribution of silicon and aluminium atoms 25 among the T sites. According to Lowensteins' rule, Al-O-Al linkages in zeolitic 26 frameworks are forbidden. As a result, all aluminate tetrahedra must be linked to 27 four silicate tetrahedra, and in general this is proved to be the case, but recent 28 investigations into zeolites synthsised at high temperatures have shown non-

1 Lowenstein distributions in sodalite materials. Aluminum ions are formed by 2 losing 3 electrons making it neutrally charged. The combination of negatively 3 charged silica and aluminum produces negatively charged ions that will absorb 4 electromagnetic waves. Negative ions are a type of antioxidant present in nature 5 that is reported to react with and break down toxins in the bloodstream. 6 The range of Si/Al ratios varies between zeolites. ZSM-5 is a high silicate 7 zeolite, whereas zeolite X/Y can be prepared in high silicate forms, or high 8 aluminate forms, but is usually produced with a Si/Al ratio close to unity with a 9 fully ordered Si-Al distribution over the tetrahedral sites, in accordance with 10 Lowenstein's rule. 11 The inclusion of aluminium into the zeolite structure has two major 12 effects: an increase in the net negative charge - which are netralised from protons 13 hydrogen bonded to the lone pairs of the bridging oxygens. These acidic sites play 14 a significant role in the zeolite catalytic activity. The materials become 15 hydrophilic. 16 Zeolites are not only influenced by pH but also they are capable of affecting 17 the solution pH. It was found out that clinoptilolite tends to neutralize the solution by acting as H+ acceptor or H+ donor (Rivera et al., 2000; Ersoy and Celik, 2002). The 18 19 pH of solution can also affect removal efficiency by affecting the integrity of zeolite. 20 Clinoptilolite is known to partially degrade and lose its ion exchange capacity in 21 Alkaline media (Mier et al., 2001). Also, clinoptilolite structure breaks down in 22 highly acidic solutions (Tsitsishvili, 1992). On the other hand, as the solution pH 23 increases, the number of negatively charged sites increases (Benhammou et al., 24 2005), Clinoptilolite-deionized water suspensions at neutral, acidic and basic pH 25 values exhibited a buffer pH around 9±1. This was also observed by Trgo and Peric 26 (2003) and at all initial pH's examined (2-11) in deionized water-clinoptilolite 27 suspensions pH became stable between 8 and 9.

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Active adsorbent materials such as zeolites, carbon molecular sieve (CMS), alumina and other porous adsorbent materials and lanthanides such as holmium can be coated onto glass fiber paper. In order to bind adsorbent particles with glass fibers and to have uniform distribution of adsorbent particles, many ingredients and additives such as retention binders may also be added into the coating solution. The final non-woven-fabric sheet (paper) will be comprised of the retention aid, the active adsorbent materials and the organic polymer. A retention aid is any material that enhances the retention of the glass fibers in the wall liner and adsorbents. The retention aid binders such as Alcoa HiQ-40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the glass fibers in the paper. Through this process, adsorbent particles tend also to be encapsulated by the boehmite binder material. Absorbent materials such as zeolites adsorbent material which includes but is not limited to zeolite type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these. Other adsorbents such as activated alumina sol, silica gel, carbon molecular sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide metals such as holmium and erbium can also be used. Discussion of the Related Art Cement is a widely used building material, but it lacks the ability to shield electromagnetic radiation. As the environment is increasingly sensitive to electronic pollution, the ability of a building to shield electromagnetic radiation is of increasing importance.

There has been a strong demand of late for high-quality and lightweight radioactive isotope shielded building materials such as wall coverings and wall board. Stainless steel fibers reinforced concrete (SSRC), a well dispersed mixture of either short or chopped continuous or non-continuous fiber in cement in the range of .90 vol.% has been known since the 1970s. SSRC has many outstanding mechanical characteristics which are unsurpassed by conventional reinforced concretes particularly, chemical stability towards strong alkaline environment and long term durability of mechanical strength are a few essential features in the development of SSRC.

Fly ash or zeolites can be substituted for cement in concrete mixes for global construction of infrastructures saving energy, disposing of waste products, protecting the environment against global warming emissions, improving the

Statement of Need

fume to enhance the strength of concrete.

There is a need for protecting reinforcing steel adding to the longevity of concrete structures by preventing the penetration of waterborne contaminants and chloride-laden liquids that cause the corrosion of reinforcing steel.

quality of concrete and reducing cost. Ultra fine fly ash can be added to silica

There is a need for increased bonding strength and contact resistivity between cement and structural steel or steel fibers.

Because of the developments in electronics technology, there is a need for EMI/RF/Microwave Interference shielding of building materials e.g. gypsum wallboard and concrete particularly in underground vaults containing power transformers and other electronics that are relevant to electric power and telecommunications and for deterring electromagnetic forms of spying.

There is a need for an environmentally friendly way to recycle ashes produced from the industrial combustion of coal and petroleum and the minerals and metals contained therein e.g. selenium, vanadium, nickel and holmium.

There is definitely a need for a way to trap radioactive nuclear fission products (isotopes) e.g. ¹³⁷Cs and ⁹⁰Sr accidentally or intentionally released into the environment.

SUMMARY OF THE INVENTION

Objects of the Invention

The present invention generally relates to a method of producing reinforced blended cement (e.g clinker, synthetic gypsum and petroleum coke powder), plus stainless steel fiber, fly ash and HPC to make high performance concrete for building materials that has increased density, bonding, tensile, flexural and compressive strength.

The present invention also relates to a new application, namely the use of petroleum coke powder and steel fibers as an electrically conductive filler in concrete for electromagnetic interference (EMI) shielding. EMI shielding is in critical demand due to the interference of wireless (particularly radio frequency) devices with digital devices and the increasing sensitivity of electronic devices. Shielding is particularly needed for underground vaults containing transformers and other electronics that are relevant to electric power and telecommunication. It is also needed for deterring electromagnetic forms of spying.

The high shielding effectiveness of cement paste containing steel fibers is consistent with its low electrical resistivity. Stainless steel fibers (8 mm diameter) 0.36 vol.% has very low resistivity. The resistivity is 40 Ω cm at 0.78 vol.% steel fibers (8 mm diameter). Hence, steel fibers are effective for passing current. Steel is also much more conductive than carbon. The high conductivity makes steel

fibers outstanding for shielding. In spite of the large diameter compared to other shielding materials. In fact, steel fibers (8 mm diameter) at .90 vol% reached 71 dB (1.5 GHz).

The highest two values of EMI consisted of shielding effectiveness previously reported in cement–matrix composites are 40 dB, as attained in cement paste containing 1.5 vol.% carbon filaments and 70 dB, attained in cement paste containing 0.72 vol.% stainless steel fibers of diameter 8 mm and length 6 mm.

The present invention also relates to a new application, namely the use of alkali paramagnetic materials such as Holmium or zeolites (natural or synthetic) dissolved in de-ionized water then coated onto a glass fiber substrates (paper) along with an organic washcoated polymer and used to cover building materials such as wall board and ceiling tiles and panels or as wall liner (covering) for absorption of nuclear fission products such as radioactive isotopes of cesium and strontium.

Principles in Accordance with the Present Invention

In achievement of the above objects it is suggested that concrete will be reinforced with steel fibers and coal fly ash and the addition of an organic (polysaccharide) admixture e.g. methylcellulose of the invention.

It is also suggested that EMI/RF/Microwave shielding of concrete can be achieved by cross linking or combining cellulose fibers with reflective or absorptive materials such as fly ash containing silica fume (< 6 vol.%), coke powder (1.02 vol.%), nickel plated carbon filaments (7 vol.%) or copper coated stainless steel fibers (.78 vol. %).

It is specifically suggested that EMI/RF/Microwave shielded structural and non-structural building materials can be used for lateral and distress guidance systems in automated highways, bridge pavements and levees.

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It is also specifically suggested that a stable trapping agent containing a non-radioactive isotope of the fission product may be Holmium (Ho₂O₃) or negatively charged zeolites such as Clinoptilolite and chabazite, resulting from the replacement of silicon by aluminum in the tetrahedra, interfere positively on the mechanisms of ionic exchanges. The foregoing discussion discloses and describes merely exemplary embodiments of the present invention. One skilled in the art will readily recognize from such discussion and claims that various changes, modifications and variations can be made therein without departing from the spirit and scope of the invention as defined in the following claims. What is claimed is: 1. A method of using organic additives such as Hydroxypropylcellulose (HPC) or methylcellulose and ethoxylated methylglucoside (EMG) and petroleum coke powder (petcoke), micron size copper coated stainless steel fibers or electroplated nickel oxide and ultra fine coal fly ash and radio stable alkali metals or zeolites (as a radioactive trapping agent) for strength reinforcement, waterproofing and electromagnetic, radio frequency and microwave interference and radioisotope shielding of building materials such as concrete comprising; a) adding metal fibers (0.78 vol.% by weight) to cementitious material containing petcoke powder (1.02 vol.%) which is blended with organic mineral additives such as HPC or methylcellulose and ethoxylated methylglucoside (0.4 vol.%) and ultra fine fly ash (15 vol.%) or zeolites (containing Rubidium) (5-10 vol. %) and silica fume (6 vol. %) and water to form a cementitious paste which is, b) mixed for four (4) to five (5) minutes. 2. The method of Claim 1, wherein the cementitious paste is predominantly (>75%) composed of Portland cement or other pozzolan materials.

- 1 3. The method of Claim 1, wherein the blended cementitious paste has Class
- F fly ash or natural or synthetic zeolites ground to approximately 3.8 µm
- 3 combined with silica fume. The total content is less than 25% (by weight).
- 4. The method of Claim 1, wherein less than 1% of HPC (by weight) is used
- 5 as a fiber dispersant and as a bonding agent between stainless steel fibers or
- filaments, carbon and the cement matrix for enhanced magnetic permeability of
- 7 the structural steel or rebar components of buildings, roads, bridge pavements and
- 8 levees.
- 5. The method of Claim 1, wherein less than 1% of Methylcellulose (by
- weight) is used as a fiber dispersant and as a bonding agent between stainless steel
- fibers or filaments, carbon and the cement matrix for enhanced magnetic
- permeability of the structural steel or rebar components of buildings, roads, bridge
- pavements and levees.
- 14 6. The method of Claim 1, wherein less than 1% of ethoxylated
- methylglucoside (by weight) is used as a waterproof bonding agent between
- stainless steel fibers or filaments, carbon and the cement matrix.
- 7. The method of Claim 1, wherein 5% stainless steel fibers (by weight) are
- added to cement to improve its strength by 23% equal to 2-3 times that of non-
- 19 reinforced concrete.
- 20 8. The method of Claim 1, wherein .78% stainless steel fibers (by weight) are
- added to concrete to enhance EMI/RF shielding.
- 22 9. The method of Claim 1, wherein 1.02% petroleum coke powder (by
- weight) is added to cement to enhance EMI/RF shielding.
- 10. The method of Claim 1, wherein 6% silica fume (by weight) is added to
- concrete to increase its compressive strength, reduce concrete permeability,
- improve resistance to corrosion and increase electrical resistance.
 - 27 11. The method of Claim 1, wherein a metal such as 7% electroplated nickel
 - oxide (by weight) is added to Portland cement blended with fly ash to enhance
 - 28 EMI/RF shielding.

- 1 12. The method of Claim 1, wherein 1.02% petroleum coke powder is added
- 2 to Portland cement to enhance EMI/RF shielding of concrete.
- 3 13. The method of Claim 1, wherein 1-3% (by weight) petroleum coke
- 4 powder is added to Portland cement and coated 5 mm thick onto pre-cast
- 5 plasterboard to enhance EMI/RF shielding.
- 6 14. The method of Claim 1, wherein 25% industrial fly ash ground to
- 7 approximately 3 µm is added to conventional Portland cement to increase its
- 8 compressive strength and electrical resistivity.
- 9 15. A radioactivity trapping agent contained in a fissionable product absorbing
- oxide, comprising an oxygenated compound stable at high temperatures,
- including, in combination, at least one metallic or paramagnetic oxide and at least
- one oxide of a non-radioactive isotope of a radioactive fission product whose
- radioactivity is to be trapped and binder retention aids.
- 14 16. A trapping agent according to Claim 15, wherein in the stable oxygenated
- compound the metallic oxides are selected from the group consisting of Al₂O₃,
- 16 CeO₂, Nb₂O₅, SiO₂, TiO₂, UO₂, V₂O₃, Y₂O₃, ZrO₂, Na₂O•Al₂O₃•xSiO₂•yH₂O
- 17 and Ho₂O₃.
- 18 17. A trapping agent according to Claim 15, wherein the metallic oxide is a
- silico-aluminate, silico-zirconate, silico-niobate or silico-cerate or holmium oxide.
- 20 18. A trapping agent according to Claim 15, wherein characterized in that the
- 21 stable oxygenated compound additionally contains a stable defined compound of
- an alkali metal and/or alkaline earth metal other than the fission product to be
- 23 trapped.
- 24 19. A trapping agent according to Claim 15, wherein said stable oxygenated
- compound comprises Rb, Na or K for Cs or Ca, Ba, Mg or Be for Sr or Ho or
- 26 Clinoptilolite for all of them.
- 27 20. A Method of producing building materials such as gypsum wallboard,

- 1 mineral fiber acoustic ceiling tiles and panels, PVC laminated gypsum ceiling
- tiles, fiberglass ceiling and acoustic panels and ceiling tiles and wall liners
- 3 containing absorbent materials such as Clinoptilolite (Zeolite) as a trapping agent
- 4 dissolved in de-ionized water along with a retention aid coated (.001"-.002") onto
- 5 woven or nonwoven glass fiber paper comprising:
- 6 a) the step of mixing radiation absorbing materials $\sim 60 80\%$ clinoptilolite
- 7 (Zeolite) and correspondingly 40 20% (boehmite) binder in de-ionized water
- 8 (5:1 ratio) at pH 8-9, specifically 8.5-8.9 at 28-30 °C, specifically 28.8 °C, for two
- 9 (2) minutes, then
- b) the step of applying (spraying or dipping) or coating the absorbing material
- onto a [glass fiber paper] substrate,
- 12 and then,
- c) the step of applying (coating) an organic polymer over the radiation absorbing
- 14 coated material (glass fiber paper) containing: Hydroxypropylcellulose (HPC) +
- 15 Methyl Gluceth -20 (EMG) ~ 60%:40% (ratio) in de-ionized water (20 % vol.wt)
- 16 to adjuvant EMI attenuation.
- 17 **21**. Absorbent materials according to Claim 20, such as zeolite adsorbent
- materials includes but are not limited to zeolite type X, zeolite type A, zeolite
- 19 type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L,
- 20 chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these.
- 21 Other adsorbents such as activated alumina sol, silica gel, carbon molecular
- sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide
- 23 metals such as holmium and erbium can also be used.
- 24 22. The retention aid binders according to Claim 20, such as BASF (Alcoa) HiO-
- 25 40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles
- to the glass fibers in the paper. Through this process, adsorbent particles tend also
- to be encapsulated by the boehmite binder material.

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13



RECEIPT OF DELIVERY

IN THE UNITED STATES PATENT OFFICE

The date stamped hereupon signifies receipt Office of Initial Patent Examination of the United States Patent Office on that date shown below materials for filing in full, Non-Provisional Application for U.S. Utility Patent entitled "Method And Use Of Organic Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete" in the name of William L. Robinson, Jr. 5914 Greenspring Avenue, Baltimore, MD 21209-3920.

A. Check in the amount of \$550 payable to: 'Director of the U.S. Patent and Trademark Office' in payment of the basic filing fee – utility, utility search fee, utility examination fee for a small entity and Petition Filing Fee; 37 CFR 1.16(a)(1),(k),(o), & (h), respectively, for a small entity;

	2. 3.	Letter of Transmittal on: Request for Non-Publication on: Title Page on: Notice of Missing Parts	2 1	sheets, sheet, sheet; Sheets;
C.	1.	Specification as prescribed by the first paragraph of 35 U.S.C. 112	:	
	2.	Background of the invention on:	6	sheets,
	3.	Summary of the Invention on:	3	sheets,
	4.	Principle in accoradaque with the Invention on:	1	sheet,
	5.	Claims, 3 independent, 22 total on:	4	sheets;
D.	1.	Declaration (of Inventorship) on:	1	sheet,
	2.	Declaration of Small Entity Status on:	1	sheet,
	3.	Abstract on:	1	sheet;
E.		Petition Under MPEP 708.02 XIII, Counter Terrorism, on:	1	sheet;
F.		Petition Under MPEP 708.02(a), & 37 CFR 1.102, Green		
		Technology Pilot Program, on:	1	sheet;

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William L. Robinson, Jr.

August 15, 2011



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APPLICATION	FILING or	GRP ART				
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13/067 917	07/07/2011	1731	110		22.	3

CONFIRMATION NO. 8019

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OC00000049099092

Date Mailed: 08/04/2011

William L. Robinson, Jr. 5914 Greenspring Avenue Baltimore, MD 21209

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Applicant(s)

William L. Robinson JR., Baltimore, MD;

Power of Attorney: None

Domestic Priority data as claimed by applicant

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/067,917**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No

** SMALL ENTITY **

Title

Method and use of organic and mineral admixtures for EMI and radioactive isotope shielding of building materials such as glass fiber wall coverings, gypsum wallboard and electrically conductive or resistive, high performance, high strength concrete

Preliminary Class

106

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APPLICATION NUMBER FILING OR 371(C) DATE

FIRST NAMED APPLICANT

ATTY. DOCKET NO./TITLE

13/067,917

William L. Robinson, Jr. 5914 Greenspring Avenue

Baltimore, MD 21209

07/07/2011

William L. Robinson JR.

CONFIRMATION NO. 8019 FORMALITIES LETTER



Date Mailed: 08/04/2011

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

• The statutory basic filing fee is insufficient.

Applicant must submit \$55 to complete the basic filing fee for a small entity.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required. The substitute specification must be submitted with markings and be accompanied by a clean version (without markings) as set forth in 37 CFR 1.125(c) and a statement that the substitute specification contains no new matter (see 37 CFR 1.125(b)). The specification, claims, and/or abstract page(s) submitted is not acceptable and cannot be scanned or properly stored because:
 - The line spacing on the specification, claims, and/or abstract is not 1½ or double spaced (see 37 CFR 1.52(b)).
- Replacement claim(s) commencing on a separate sheet in compliance with 37 CFR 1.75(h) and 1.121 is required. Claims must be consecutively numbered and the same claim number cannot be used for more than one claim. See 37 CFR 1.126.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of \$52 as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- A surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted.

SUMMARY OF FEES DUE:

Total fee(s) required within TWO MONTHS from the date of this Notice is \$552 for a small entity

- \$55 Statutory basic filing fee.
- \$65 Surcharge.
- The application search fee has not been paid. Applicant must submit \$270 to complete the search fee.
- The application examination fee has not been paid. Applicant must submit \$110 to complete the examination fee for a small entity in compliance with 37 CFR 1.27.
- Total additional claim fee(s) for this application is \$52
 - \$52 for 2 total claims over 20.

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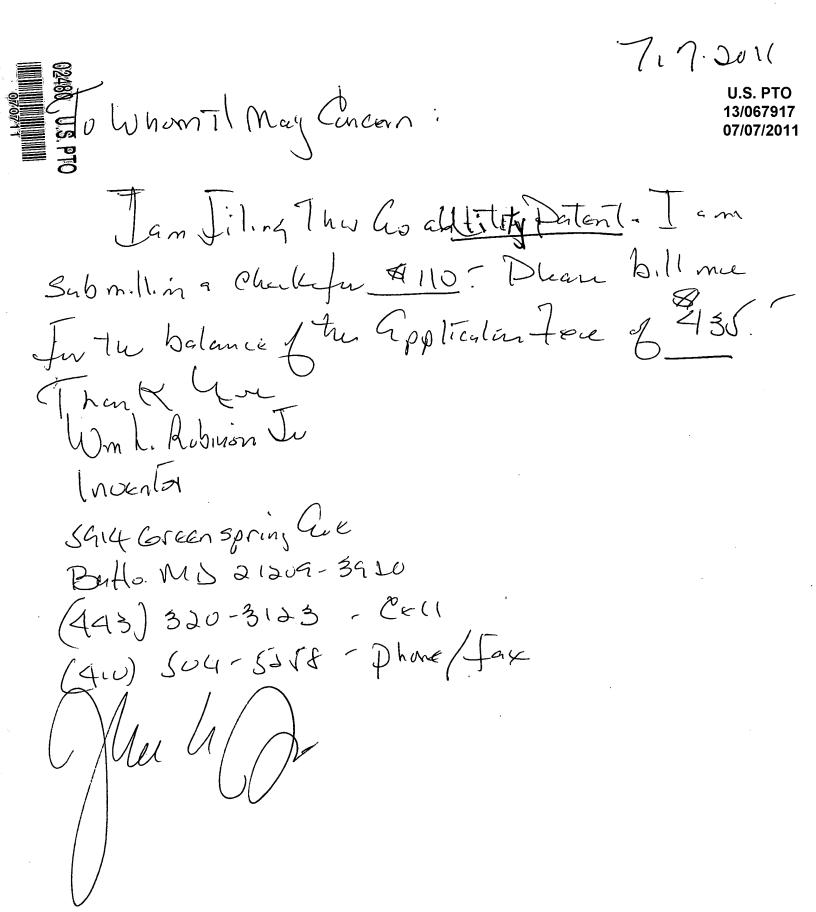
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Application or Docket Number PATENT APPLICATION FEE DETERMINATION RECORD 13/067,917 Substitute for Form PTO-875 APPLICATION AS FILED - PART I OTHER THAN SMALL ENTITY OR SMALL ENTITY (Column 1) (Column 2) RATE(\$) RATE(\$) FOR NUMBER FILED NUMBER EXTRA FEE(\$) FEE(\$) BASIC FEE N/A N/A 165 N/A N/A (37 CFR 1.16(a), (b), or (c)) SEARCH FEE N/A N/A N/A 270 N/A (37 CFR 1.16(k), (i), or (m)) **EXAMINATION FEE** N/A N/A N/A 110 N/A (37 CFR 1.16(o), (p), or (q)) TOTAL CLAIMS 22 26 52 OR minus 20 = 2 (37 CFR 1.16(i)) INDEPENDENT CLAIMS 3 110 0.00 minus 3 = (37 CFR 1.16(h)) If the specification and drawings exceed 100 APPLICATION SIZE sheets of paper, the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. FEE 0.00 (37 CFR 1.16(s)) 41(a)(1)(G) and 37 CFR 1.16(s). MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) 0.00 * If the difference in column 1 is less than zero, enter "0" in column 2. TOTAL 597 TOTAL APPLICATION AS AMENDED - PART II OTHER THAN SMALL ENTITY OR SMALL ENTITY (Column 1) (Column 2) (Column 3) CLAIMS HIGHEST REMAINING PRESENT ADDITIONAL ADDITIONAL NUMBER RATE(\$) RATE(\$) ⋖ AFTER AMENDMENT PREVIOUSLY EXTRA FEE(\$) FEE(\$) **AMENDMENT** PAID FOR Total Minus OR (37 CFR 1.16(i)) Independent (37 CFR 1.16(h)) Minus OR Application Size Fee (37 CFR 1.16(s)) FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) OR TOTAL TOTAL OR ADD'L FEE ADD'L FEE (Column 1) (Column 2) (Column 3) CLAIMS HIGHEST REMAINING NUMBER PRESENT ADDITIONAL ADDITIONAL RATE(\$) RATE(\$) Ш PREVIOUSLY **AFTER** EXTRA FEE(\$) FEE(\$) **AMENDMENT** PAID FOR **AMENDMENT** Minus Total OR (37 CFR 1.16(i)) Independent Minus OR (37 CFR 1.16(h)) Application Size Fee (37 CFR 1.16(s)) OR FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) TOTAL TOTAL OR ADD'L FEE ADD'L FEE * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20" *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3"

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a method of increasing the tensile, flexural and compressive strengths and the EMI/RF/Microwave and radioactive isotope shielding of concrete, cement, gypsum or other pozzolan (alumina siliceous) such as fly ash using electroplated nickel oxide or copper coated stainless steel fibers, hydroxypropyl cellulose, ethoxylated methylglucoside, petroleum coke powder or graphite and silica fume and non-radioactive alkali metals such as holmium and natural zeolites such as Clinoptilolite as radioactive trapping agents.

2. Discussion of the Related Art

Cement is a widely used building material, but it lacks the ability to shield electromagnetic radiation. As the environment is increasingly sensitive to electronic pollution, the ability of a building to shield electromagnetic radiation is of increasing importance.

There has been a strong demand of late for high-quality and lightweight radioactive isotope shielded building materials such as wall coverings and wall board.

Stainless steel fibers reinforced concrete (SSRC), a well dispersed mixture of either short or chopped continuous or non-continuous fiber in cement in the range of .90 vol.% has been known since the 1970s. SSRC has many outstanding mechanical characteristics which are unsurpassed by conventional reinforced concretes particularly, chemical stability towards strong alkaline environment and long term durability of mechanical strength are a few essential features in the development of SSRC.

Fly ash or zeolites can be substituted for cement in concrete mixes for global construction of infrastructures saving energy, disposing of waste products, protecting the environment against global warming emissions, improving the quality of concrete and reducing cost. Ultra fine fly ash can be added to silica fume to enhance the strength of concrete

3. Statement of Need

There is a need for protecting reinforcing steel adding to the longevity of concrete structures by preventing the penetration of waterborne contaminants and chloride-laden liquids that cause the corrosion of reinforcing steel.

There is a need for increased bonding strength and contact resistivity between cement and structural steel or steel fibers.

Because of the developments in electronics technology, there is a need for EMI/RF/Microwave Interference shielding of building materials e.g. gypsum wallboard and concrete particularly in underground vaults containing power transformers and other electronics that are relevant to electric power and telecommunications and for deterring electromagnetic forms of spying.

There is a need for an environmentally friendly way to recycle ashes produced from the industrial combustion of coal and petroleum and the minerals and metals contained therein e.g. selenium, vanadium, nickel and holmium

There is definitely a need for a way to trap radioactive nuclear fission products (isotopes) e.g. ¹³⁷Cs and ⁹⁰Sr accidentally or intentionally released into the environment.

General Background

Electric utilities in the United States generate over 100 million tons of petroleum coke ash and coal fly ash as a by-product each year. Fly ash in particular is typically disposed of in landfills. Course fly ash ground to approximately 3.8 µm can produce high strength concrete and 25% cement replacement gave the highest compressive strength (100.3 MPa). A replacement of 25% cement will result in a 27% reduction in greenhouse gases produced from production of cement (680 Kg/ton of cement).

The cement industry is responsible for producing 5% of global CO₂ emissions; 60% due to decarbonization of non-renewable materials such as limestone and 40% due to heating cement kilns to 1500 °C using non-renewable fossil fuels.

Adding .90 vol.% stainless steel fibers (by weight) to cement improves strength by 23% equal to 2-3 times that of non-reinforced concrete. The dominant mechanisms of EM/RF/Microwave shielding for micron size (>100 nm) steel fibers is absorption. Nickel filaments of diameter 0.4 µm, as made by electroplating 0.1 µm diameter carbon filaments with nickel, have been shown to be particularly effective. They are known as nickel filaments because they are mostly nickel rather than carbon. A shielding effectiveness of 87 dB at 1 GHz has been attained in a polymer-matrix composite containing just 7 vol.% nickel filaments. Nickel is more attractive than copper, partly due to its superior oxidation resistance.

Shielding of 40dB or more in the magnetic field ranging from 150 kHz to 16 MHz is needed for a 99 % EMI block. This degree of shielding effectiveness is sufficient to for the construction of electromagnetic interference structures.

Binding Properties of Calcium Hydroxide or Hydrated Lime (CaCO₃) with HPC. Calcium hydroxide or hydrated lime is the product of the hydration of lime and water:

$$Ca(OH)_2 < \longrightarrow CaO + H_2O$$

Lime is a soft, white amorphous powder with alkaline or slightly bitter taste. It has been shown that lime is solubilised in the presence of sugars and it has been observed in set Portland cements as hexagonal plate crystals (Lea, 1970). Lime reacts with carbon dioxide (CO₂) to form calcium carbonate (CaCO₃). This reaction which takes place in the presence of moisture is the cause of hardening of high calcium lime mortars.

Binding Properties of HPC with Steel Fiber and Cement

HPC and Ethoxylated methyl glucoside (moisture barrier) binds together at the 1-3' C-Terminal Domain. How does HPC bind to calcium in concrete? In the presence of water calcium located at the N-Terminal Cellulose Binding Domain in HPC will bind to calcium bonds at the 1-4' β calcium bonding sites in cement.

The use of hydroxypropyl cellulose or methylcellulose (0.4% to 0.8% by weight of cement) as an admixture in cement paste or concrete was found to increase the shear bond strength with steel reinforcing bar and steel fiber. The bond strength increased with increasing hydroxypropyl cellulose or methylcellulose amounts. The contact electrical resistivity between cement and fiber or between concrete and reinforcing bar was not changed by addition of hydroxypropyl cellulose or methylcellulose.

Trapping of Radioactive Fission Products (Isotopes) Using Non-Radioactive Stable Metallic Elements

Holmium (hoolmiəm/ HOHL-mee-əm) is a chemical element with the symbol Ho and atomic number 67. Part of the lanthanide series, holmium is a relatively soft and malleable silvery-white metallic element, which is stable in dry air at room temperature. A rare earth metal, it is found in the minerals monazite and gadolinite. Holmium has the highest magnetic strength of any element and therefore is used for the polepieces of the strongest static magnets. Because holmium strongly absorbs nuclear fission-bred neutrons, it is also used in nuclear control rods.

Zeolites are not only influenced by pH but also they are capable of affecting the solution pH. It was found out that clinoptilolite tends to neutralize the solution by acting as H+ acceptor or H+ donor (Rivera et al., 2000; Ersoy and Çelik, 2002). The pH of solution can also affect removal efficiency by affecting the integrity of zeolite. Clinoptilolite is known to partially degrade and lose its ion exchange capacity in alkaline media (Mier et al., 2001). Also, clinoptilolite structure breaks down in highly acidic solutions (Tsitsishvili, 1992). On the other hand, as the solution pH increases, the number of negatively charged sites increases (Benhammou et al., 2005),

Clinoptilolite-deionized water suspensions at neutral, acidic and basic pH values exhibited a buffer pH around 9±1. This was also observed by Trgo and Peric (2003) and at all initial pH's examined (2-11) in deionized water-clinoptilolite suspensions pH became stable between 8 and 9.

Active adsorbent materials such as zeolites, carbon molecular sieve (CMS), alumina and other porous adsorbent materials and lanthanides such as holmium can be coated onto glass fiber paper. In order to bind adsorbent particles with glass fibers and to have uniform distribution of adsorbent particles, many ingredients and additives such as retention binders may also be added into the coating solution. The final non-woven-fabric sheet (paper) will be comprised of the retention aid, the active adsorbent materials and the organic polymer. A retention aid is any material that enhances the retention of the glass fibers in the wall liner and adsorbents.

The retention aid binders such as Alcoa HiQ-40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the glass fibers in the paper. Through this process, adsorbent particles tend also to be encapsulated by the boehmite binder material.

Absorbent materials such as zeolites adsorbent material which includes but is not limited to zeolite type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these. Other adsorbents such as activated alumina sol, silica gel, carbon molecular sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide metals such as holmium and erbium can also be used.

SUMMARY OF THE INVENTION

Objects of the Invention

The present invention generally relates to a method of producing reinforced blended cement (e.g clinker, synthetic gypsum and petroleum coke powder), plus stainless steel fiber, fly ash and HPC to make high performance concrete for building materials that has increased density, bonding, tensile, flexural and compressive strength.

The present invention also relates to a new application, namely the use of petroleum coke powder and steel fibers as an electrically conductive filler in concrete for electromagnetic interference (EMI) shielding. EMI shielding is in critical demand due to the interference of wireless (particularly radio frequency) devices with digital devices and the increasing sensitivity of electronic devices. Shielding is particularly needed for underground vaults containing transformers and other electronics that are relevant to electric power and telecommunication. It is also needed for deterring electromagnetic forms of spying.

The high shielding effectiveness of cement paste containing steel fibers is consistent with its low electrical resistivity. Stainless steel fibers (8 mm diameter) 0.36 vol.% has very low resistivity. The resistivity is 40 Ω cm at 0.78 vol.% steel fibers (8 mm diameter). Hence, steel fibers are effective for passing current. Steel is also much more conductive than carbon. The high conductivity makes steel fibers outstanding for shielding. In spite of the large diameter compared to other shielding materials. In fact, steel fibers (8 mm diameter) at .90 vol% reached 71 dB (1.5 GHz).

The highest two values of EMI consisted of shielding effectiveness previously reported in cement—matrix composites are 40 dB, as attained in cement paste containing 1.5 vol.% carbon filaments and 70 dB, attained in cement paste containing 0.72 vol.% stainless steel fibers of diameter 8 mm and length 6 mm.

The present invention also relates to a new application, namely the use of alkali paramagnetic materials such as Holmium or zeolites (natural or synthetic) dissolved in de-ionized water then coated onto a glass fiber substrates (paper) along with an organic washcoated polymer and used to cover building materials such as wall board and ceiling tiles and panels or as wall liner (covering) for absorption of nuclear fission products such as radioactive isotopes of cesium and strontium.

Principles in Accordance with the Present Invention

In achievement of the above objects it is suggested that concrete will be reinforced with steel fibers and coal fly ash and the addition of an organic (polysaccharide) admixture e.g. methylcellulose of the invention.

It is also suggested that EMI/RF/Microwave shielding of concrete can be achieved by cross linking or combining cellulose fibers with deflective or absorptive materials such as fly ash containing silica fume (< 6 vol.%), coke powder (1.02 vol.%), nickel plated carbon filaments (7 vol.%) or copper coated stainless steel fibers (.78 vol. %).

It is specifically suggested that EMI/RF/Microwave shielded structural and non-structural building materials can be used for lateral and distress guidance systems in automated highways, bridge pavements and levees.

It is also specifically suggested that a stable trapping agent containing a non-radioactive isotope of the fission product may be Holmium (Ho₂O₃) or zeolites such as Clinoptilolite and chabazite.

The foregoing discussion discloses and describes merely exemplary embodiments of the present invention. One skilled in the art will readily recognize from such discussion and claims that various changes, modifications and variations can be made therein without departing from the spirit and scope of the invention as defined in the following claims.

What is claimed is:

- 1. A method of using organic additives such as Hydroxypropylcellulose (HPC) or methylcellulose and ethoxylated methylglucoside (EMG) and petroleum coke powder (petcoke), micron size copper coated stainless steel fibers or electroplated nickel oxide and ultra fine coal fly ash and radio stable alkali metals or zeolites (as a radioactive trapping agent) for strength reinforcement, waterproofing and electromagnetic, radio frequency and microwave interference and radioisotope shielding of building materials such as concrete comprising;
 - a) adding metal fibers (0.78 vol.% by weight) to cementitious material containing petcoke powder (1.02 vol.%) which is blended with organic mineral additives such as HPC or methylcellulose and ethoxylated methylglucoside (0.4 vol.%) and ultra fine fly ash (15 vol.%) or zeolites (containing Rubidium) (5-10 vol. %) and silica fume (6 vol. %) and water to form a cementitious paste which is,
 - b) mixed for four (4) to five (5) minutes.
- 2. The method of Claim 1, wherein the cementitious paste is predominantly (>75%) composed of Portland cement or other pozzolan materials.
- 3. The method of Claim 1, wherein the blended cementitious paste has Class F fly ash or natural or synthetic zeolites ground to approximately 3.8 μm combined with silica fume. The total content is less than 25% (by weight).
- 4. The method of Claim 1, wherein less than 1% of HPC (by weight) is used as a fiber dispersant and as a bonding agent between stainless steel fibers or filaments, carbon and the cement matrix for enhanced magnetic permeability of the structural steel or rebar components of buildings, roads, bridge pavements and levees.
- 5. The method of Claim 1, wherein less than 1% of Methylcellulose (by weight) is used as a fiber dispersant and as a bonding agent between stainless steel fibers or filaments, carbon and the cement matrix for enhanced magnetic permeability of the structural steel or rebar components of buildings, roads, bridge pavements and levees.
- 6. The method of Claim 1, wherein less than 1% of ethoxylated methylglucoside (by weight) is used as a waterproof bonding agent between stainless steel fibers or filaments, carbon and the cement matrix.
- 7. The method of Claim 1, wherein 5% stainless steel fibers (by weight) are added to cement to improve its strength by 23% equal to 2-3 times that of non-reinforced concrete.

- 8. The method of Claim 1, wherein .78% stainless steel fibers (by weight) are added to concrete to enhance EMI/RF shielding.
- 9. The method of Claim 1, wherein 1.02% petroleum coke powder (by weight) is added to cement to enhance EMI/RF shielding.
- 10. The method of Claim 1, wherein 6% silica fume (by weight) is added to concrete to increase its compressive strength, reduce concrete permeability, improve resistance to corrosion and increase electrical resistance.
- 11. The method of Claim 1, wherein a metal such as 7% electroplated nickel oxide (by weight) is added to Portland cement blended with fly ash to enhance EMI/RF shielding.
- 12. The method of Claim 1, wherein 1.02% petroleum coke powder is added to Portland cement to enhance EMI/RF shielding of concrete.
- 13. The method of Claim 1, wherein 1-3% (by weight) petroleum coke powder is added to Portland cement and coated 5 mm thick onto pre-cast plasterboard to enhance EMI/RF shielding.
- 14. The method of Claim 1, wherein 25% industrial fly ash ground to approximately 3 µm is added to conventional Portland cement to increase its compressive strength and electrical resistivity.
- 15. A radioactivity trapping agent contained in a fissionable product absorbing oxide, comprising an oxygenated compound stable at high temperatures, including, in combination, at least one metallic or paramagnetic oxide and at least one oxide of a non-radioactive isotope of a radioactive fission product whose radioactivity is to be trapped and binder retention aids.
- 16. A trapping agent according to Claim 15, wherein in the stable oxygenated compound the metallic oxides are selected from the group consisting of Al₂O₃, CeO₂, Nb₂O₅, SiO₂, TiO₂, UO₂, V₂O₃, Y₂O₃ ZrO₂ Na₂O•Al₂O₃•xSiO₂•yH₂O and Ho₂O₃.
- 17. A trapping agent according to Claim 15, wherein the metallic oxide is a silico-aluminate, silico-zirconate, silico-niobate or silico-cerate or holmium oxide.
- 18. A trapping agent according to Claim 15, wherein characterized in that the stable oxygenated compound additionally contains a stable defined compound of an alkali metal and/or alkaline earth metal other than the fission product to be trapped.
- 19. A trapping agent according to Claim 15, wherein said stable oxygenated compound comprises Rb, Na or K for Cs or Ca, Ba, Mg or Be for Sr or Ho or Clinoptilolite for all of them.

- William L. Robinson Jr. Method And Use Of Organic And July 7, 2011
 Mineral Admixtures For EMI And Radioactive Isotope Shielding
 Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And
 Electrically Conductive Or Resistive, High Performance, High Strength Concrete
- 20. A Method of producing building materials such as gypsum wallboard, mineral fiber acoustic ceiling and panels, PVC laminated gypsum ceiling tiles, fiberglass ceiling and acoustic panels and ceiling tiles and wall liners containing absorbent materials such as Clinoptilolite (Zeolite) as a trapping agent dissolved in de-ionized water along with a retention aid coated (.001"-.002") onto woven glass fiber paper comprising:
 - a) the step of mixing radiation absorbing materials $\sim 60-80\%$ clinoptilolite (Zeolite) and correspondingly 40 20% (boehmite) binder in de-ionized water (5:1 ratio) at pH 8-9, specifically 8.5-8.9 at 28-30 °C, specifically 28.8 °C, for two (2) minutes, then,
 - b) the step of applying (spraying or dipping) or coating the absorbing material onto a [glass fiber paper] substrate, and then,
 - c) the step of applying (coating) an organic polymer over the radiation absorbing coated material (glass fiber paper) containing: Hydroxypropylcellulose (HPC) + Methyl Gluceth -20 (EMG) \sim 60%:40% (ratio) in de-ionized water (20 % vol.wt).
- 21. Absorbent materials according to Claim 20, such as zeolite adsorbent materials includes but are not limited to zeolite type X, zeolite type A, zeolite type Y, ZSM-3, EMT, EMC-2, ZSM-18, ZK5, ZSM-5, ZSM-11, .beta., L, chabazite, offretite, erionite, mordenite, gmelinite, mazzite, and mixtures of these. Other adsorbents such as activated alumina sol, silica gel, carbon molecular sieves, amorphous aluminosilicate, clay materials and paramagnetic lanthanide metals such as holmium and erbium can also be used.
- 22. The retention aid binders according to Claim 20, such as BASF (Alcoa) HiQ-40, Alucol or Alumina Sol are added to the slurry to bind the adsorbent particles to the glass fibers in the paper. Through this process, adsorbent particles tend also to be encapsulated by the boehmite binder material.

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ABSTRACT

A method is disclosed for the use of an organic admixture composed of a polysaccharide such as Hydroxypropylcellulose and a monosaccharide such as ethoxylated methylglucoside and de-ionized water and metal and mineral additives e.g. electroplated nickel oxide or copper coated stainless steel fibers, ultra fine coal fly ash, silica fume and carbon based materials such as graphite and petroleum coke powder and radio stable alkali paramagnetic metals such as Holmium or zeolites for electromagnetic; radio and microwave frequency and radioisotope shielding of building materials such as wall liners, gypsum wallboard and high performance, high strength concrete.

IN THE UNITED STATES PATENT OFFICE

Applicant: William L. Robinson, Jr.

Title: Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete.

DECLARATION

I, William L. Robinson, Jr., citizen of the United States of America, possessing as a legal residential and mailing address 5914 Greenspring Avenue, Baltimore, Maryland 21209, hereby, declare that I am the sole inventor and believe that I am the original and first inventor of the subject matter for which a patent is sought, said subject matter being expressed in the specification contained in the Application attached hereto entitled: "Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete." I further declare that I have reviewed and understand the contents of said specification and I acknowledge the duty to disclose information which is material to the examination of the application in accordance with 37 CFR 1.56(a).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18 USC 1001, and that such willful false statements may jeopardize the validity of the Application or any Patent issued thereon.

William L. Robinson, Jr.

July 7, 2011
Date Executed

IN THE UNITED STATES PATENT OFFICE

Applicant:

William L. Robinson, Jr.

Title: Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete.

Small Entity Declaration – Independent Inventor

I, William L. Robinson, Jr., sole inventor, hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under35 USC 41 (a) & (b), to the United States Patent Office with regard to my above invention described in the specification filed herewith. I further declare that I have not assigned, granted, conveyed or licensed, and am not under any obligation under any contract or law to assign, grant, convey or license, any rights in the invention to any entity which would not qualify as a small entity.

I acknowledge a duty to file, in the above identified Application for Patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity no longer appropriate (37 CFR 1.28(b)).

I hereby declare that all the statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18 USC 1001, and that such willful false statements may jeopardize the validity of the Application

or any Patent issued thereon.

William L. Robinson, Jr.

July 7, 2011

Date Executed

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Inventor:

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REQUEST FOR NON-PUBLICATION

Applicant for the above identified Application for U.S. Utility Patent entitled "Method And Use Of Organic And Mineral Admixtures For EMI And Radioactive Isotope Shielding Of Building Materials Such As Glass Fiber Wall Coverings, Gypsum Wallboard And Electrically Conductive Or Resistive, High Performance, High Strength Concrete" hereby avers that the invention described and claimed therein has not been and will not be the subject of an application filed in another country, or under international agreement, that requires eighteen month publication and hereby respectfully request nonpublication of said application.

lliam L. Robinson, Jr.

PATENT APPLICATION SERIAL NO.

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE FEE RECORD SHEET

07/08/2011 LNGUYEN1 00000035 13067917 01 FC:2011 110.00 OP

PTO-1556 (5/87)

Document Code: IMIS

Notice of Fee Due

Date: $07-07-$	11
Application Number: 1306791	7
A fee is due for the attached document for the application for the appropriate authorization authorization is present, please charge the appresent, notify the applicant of the fee deficient	to charge a deposit account. If an propriate fee*. If an authorization is not
*If the fee due is for any of the filing fees, of surcharge. If authorization is present, cha filing fees as well.	check for authorization to charge the arge the surcharge for late payment of the
Insufficient payment by check or mon	ney order.
☐ Insufficient funds in deposit account _	at:(time).
☐ Insufficient payment by credit card.	•
Declined credit card:	(time).
☐ No authorization to charge a deposit a	ccount.
Fee code(s) to be applied:	2011 755 2111 7270
Amount in holding fee code:	2311 2202 1506
	1622/2622 1999
Total remaining due from applicant:	487
RAM Operator Lisa Ngryey	

Rev. 12/27/07