

Abstract of Patents and Patent Application(s)

I. Articles comprising a resistor comprising core shell liquid metal encapsulates and methods of detecting an impact on an article using a resistor comprising core shell liquid metal encapsulates are disclosed. Such core shell liquid metal encapsulates enable simple but robust impact sensors as such encapsulates comprise a highly electrically resistant metal oxide shell that prevents such encapsulates from coalescing. Yet when such shell is ruptured, the highly conductive bulk liquid metal is released. Such liquid metal changes electrical properties of a sensor comprising core shell liquid metal encapsulates which in turn is evidence of the aforementioned impact.

Intellectual property:

- U.S. Patent No. 10,900,848 B2, that issued on January 26, 2021, and entitled “Articles comprising a resistor comprising core shell liquid metal encapsulates and method of detecting an impact.”

II. The present invention relates to core shell liquid metal encapsulates comprising multi-functional ligands, networks comprising such encapsulates and processes of making and using such encapsulates and networks. When subjected to strain, such network’s conductivity is enhanced, thus allowing the network to serve as a healing agent that restores at least a portion of the conductivity in an adjacent conductor.

Intellectual property:

- U.S. Patent No. 11,100,223 B2, that issued on August 24, 2021, and U.S. Patent Application Serial No. 17/376,644, that was filed on July 15, 2021. Such patent and patent application being entitled “Core shell liquid metal encapsulates comprising multi-functional ligands and networks comprising same”

III. The present invention relates to articles comprising core shell liquid metal encapsulate networks and methods of using core shell liquid metal encapsulate networks to control AC signals and power. Such method permits the skilled artisan to control the radiation, transmission, reflection and modulation of an AC signal and power. As a result, AC system properties such as operation frequency, polarization, gain, directionality, insertion loss, return loss, and impedance can be controlled under strain.

Intellectual property:

- U.S. Patent Application Serial No. 16/580,652, that was filed on September 24, 2019, and entitled “Articles comprising core shell liquid metal

encapsulate networks and method to control alternating current signals and power”.

IV. The present invention relates to substrates comprising a network comprising core shell liquid metal encapsulates comprising multi-functional ligands and processes of making and using such substrates. The core shell liquid metal particles are linked via ligands to form such network. Such networks volumetric conductivity increases under strain which maintains a substrate’s resistance under strain. The constant resistance results in consistent thermal heating via resistive heating. Thus allowing a substrate that comprises such network to serve as an effective heat provider.

Intellectual property:

- U.S. Patent No. 11,102,883 B2, that issued on August 24, 2021, and U.S. Patent Application Serial No. 17/386,807, that was filed on July 28, 2021. Such patent and patent application being entitled “Substrates comprising a network comprising core shell liquid metal encapsulates comprising multi-functional ligands”

V. The present invention relates to architected liquid metal networks and processes of making and using same. The predetermined template design technology of such architected liquid metal networks provides the desired spatial control of electrical, electromagnetic, and thermal properties as a function of strain. Thus, resulting in improved overall performance including process ability.

Intellectual property:

- U.S. Patent Application Serial No. 16/671,750, that was filed on November 1, 2019, and entitled “Architected liquid metal networks and processes of making and using same”.

Tommy W. Lee,

Air Force Federal Register Liaison Officer.

[FR Doc. 2021–25905 Filed 11–26–21; 8:45 am]

BILLING CODE 5001–10–P

ELECTION ASSISTANCE COMMISSION

Agency Information Collection Activities; Proposals, Submissions, and Approvals; 2022 Election Administration and Voting Survey (EAVS)

AGENCY: U.S. Election Assistance Commission (EAC).

ACTION: Notice.

SUMMARY: In compliance with the *Paperwork Reduction Act* of 1995, the EAC announces an information collection and seeks public comment on

the provisions thereof. The EAC intends to submit this proposed information collection (2022 Election

Administration and Voting Survey, or EAVS) to the Director of the Office of Management and Budget for approval. The 2022 EAVS asks election officials questions concerning voting and election administration, including the following topics: Voter registration; overseas and military voting; voting by mail; early in-person voting; polling operations; provisional voting; voter participation; election technology; election policy; and other related issues.

DATES: Written comments must be submitted on or before January 28, 2022.

Comments: Public comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency’s estimate of the burden of the proposed information collection; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the information collection on respondents, including through the use of automated collection techniques or other forms of information technology.

Comments on the proposed information collection should be submitted electronically via <https://www.regulations.gov> (docket ID: EAC–2021–0002). Written comments on the proposed information collection can also be sent to the U.S. Election Assistance Commission, 633 3rd Street NW, Suite 200, Washington, DC 20001, *Attn:* EAVS.

Obtaining a Copy of the Survey: To obtain a free copy of the draft survey instrument: (1) Download a copy at <https://www.regulations.gov> (docket ID: EAC–2021–0002); or (2) write to the EAC (including your address and phone number) at U.S. Election Assistance Commission, 633 3rd Street NW, Suite 200, Washington, DC 20001, *Attn:* EAVS.

FOR FURTHER INFORMATION CONTACT: Dr. Nichelle Williams at 301–563–3919, or email research@eac.gov; U.S. Election Assistance Commission, 633 3rd Street NW, Suite 200, Washington, DC 20001.

SUPPLEMENTARY INFORMATION:

Title and OMB Number: 2022 Election Administration and Voting Survey; OMB Number Pending.

Needs and Uses

The EAC issues the EAVS to meet its obligations under the Help America Vote Act of 2002 (HAVA) to serve as a national clearinghouse and resource for

the compilation of information with respect to the administration of Federal elections; to fulfill both the EAC and the Department of Defense Federal Voting Assistance Program's (FVAP) data collection requirements under the Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA); and meet its National Voter Registration Act (NVRA) mandate to collect information from states concerning the impact of that statute on the administration of Federal elections. In addition, under the NVRA, the EAC is responsible for collecting information and reporting, biennially, to Congress on the impact of that statute. The information the states are required to submit to the EAC for purposes of the NVRA report are found under Title 11 of the Code of Federal Regulations. States that respond to questions in this survey concerning voter registration-related matters will meet their NVRA reporting requirements under 52 U.S.C. 20508 and EAC regulations. Finally, UOCAVA mandates that FVAP work with the EAC and chief state election officials to develop standards for reporting UOCAVA voting information (52 U.S.C. 20302) and that FVAP will store the reported data and present the findings within the congressionally-mandated report to the President and Congress. Additionally, UOCAVA requires that "not later than 90 days after the date of each regularly scheduled general election for Federal office, each state and unit of local government which administered the election shall (through the state, in the case of a unit of local government) submit a report to the EAC on the combined number of absentee ballots transmitted to absent uniformed services voters and overseas voters for the election and the combined number of such ballots which were returned by such voters and cast in the election, and shall make such a report available to the general public." States that complete and timely submit the UOCAVA section of the survey to the EAC will fulfill their UOCAVA reporting requirement under 52 U.S.C. 20302. In order to fulfill the above requirements, the EAC is seeking information relating to the period from the Federal general election day 2020 +1 through the November 2022 Federal general election. The EAC will provide the data regarding UOCAVA voting to FVAP after data collection is completed. This data sharing reduces burden on local election offices because FVAP does not have to conduct its own data collection to meet its reporting requirements.

Affected Public (Respondents): State or local governments, the District of

Columbia, American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands.

Affected Public: State or local government.

Number of Respondents: 56.

Responses per Respondent: 1.

Estimated Burden per Response: 235 hours per collection, 117.5 hours annualized.

Estimated Total Annual Burden Hours: 13,160 hours per collection, 6,580 hours annualized.

Frequency: Biennially.

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Nichelle Williams,

Director of Research, U.S. Election Assistance Commission.

[FR Doc. 2021-26004 Filed 11-26-21; 8:45 am]

BILLING CODE 6820-KF-P

DEPARTMENT OF ENERGY

Notice of Request for Information (RFI) on Energy Sector Supply Chain Review

AGENCY: Undersecretary for Science and Energy and Office of Policy (OP); Department of Energy (DOE).

ACTION: Request for information.

SUMMARY: The U.S. Department of Energy (DOE) Undersecretary for Science and Energy and Office of Policy (OP) request information on energy sector supply chains. This request for information (RFI) seeks input from all stakeholders involved directly and indirectly in the supply chains of energy, energy systems and technologies, and energy efficiency technologies from raw materials, processed materials, subcomponents, final products, to end-of-life material recovery and recycling—including but not limited to U.S. industry, researchers, academia, local governments, and civil society. This stakeholder input will inform the Department's efforts in building an energy sector industrial base that is diverse, resilient, and competitive while meeting economic, national security, and climate objectives.

DATES: Responses will be reviewed and considered on a rolling basis but are due no later than 5 p.m. (ET) on January 15, 2022.

ADDRESSES: Interested parties are to submit comments online (Strongly Preferred): Submit all electronic public comments to www.regulations.gov/docket/DOE-HQ-2021-0020. Click on the "Comment" icon, complete the required fields, and enter or attach your comments. If you are unable to submit online, you may submit by email to

supplychain@hq.doe.gov and include "RFI: Supply Chain Review" in the subject line of the email. Email attachments can be provided as a Microsoft Word (.docx) file or an Adobe PDF (.pdf) file, prepared in accordance with the detailed instructions in the RFI. Documents submitted electronically should clearly indicate which topic areas and specific questions are being addressed and should be limited to no more than 25MB in size. The complete RFI document is located at www.energy.gov/policy. Please refer to the Disclaimer and Important Note section at the end of this RFI on how to submit business sensitive and/or confidential information.

FOR FURTHER INFORMATION CONTACT:

Questions may be addressed to Tsilile Igogo at 202-586-0048. Please direct media inquiries to Jennifer Mosley through jennifer.mosley@hq.doe.gov. Further instructions can be found in the RFI document posted at www.energy.gov/policy.

SUPPLEMENTARY INFORMATION:

Background

Executive Order 14017 "America's Supply Chains" directs the Secretary of Energy to "submit a report on supply chains for the energy sector industrial base (as determined by the Secretary of Energy)" within one year of the date of the order 86 FR 11849 (February 24, 2021). This RFI seeks public input to inform DOE on approaches and actions needed to build resilient supply chains for the energy sector. Resilient supply chains as defined by the Executive Order 14017 means "supply chains that are secure and diverse—facilitating greater domestic production, a range of supply, built-in redundancies, adequate stockpiles, safe and secure digital networks, and a world-class American manufacturing base and workforce."

DOE recognizes that meeting U.S. jobs, economic, and emissions goals (which include a 50–52% reduction in emissions by 2030 from a 2005 baseline and net zero greenhouse gas emissions economy-wide by no later than 2050), will require a significant number of clean energy (and clean energy enabling) technologies to be deployed at a dramatically increasing scale at a time when other countries are expanding their clean energy sectors. DOE has identified technologies and crosscutting topics for analysis in the timeframe set by the Executive Order. The list of the selected technology sectors includes solar photovoltaic (PV); wind; electric grid, including transformers and high-voltage direct current (HVDC); energy storage; hydropower, including pumped