IN THIS ISSUE

Meme of the Month!

https://allisonhorst.github.io/palmerpenguins/

LATEST NEWS

Spring 2023 Meeting

We cordially invite you to attend our Spring MDS-Rely Center Meeting on **April 17-18** in-person on the University of Pittsburgh Campus. Attend faculty project pitches, a poster session, and network with PItt and Case faculty and graduate students and other industrial and government lab members. Find more information about the Spring 2023 meeting here.

Register Here!

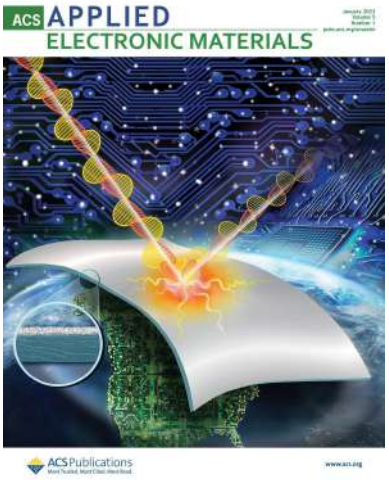
REMADE PV Recycling Project

Congratulations to Dr. Paul Leu, who is leading a $2m REMADE Institute project on solar panel recycling. The project involves Alfred University, UC Irvine, National Renewable Energy Laboratory, First Solar, Sunnking, the Aluminum Association, and Electronic Recyclers International. Read more about the project here.

CENTER PUBLICATIONS

EMI Shielding Project Cover Art

Congratulations to Mingxuan, whose work on EMI shielding was featured on the January cover of ACS Applied Electronic Materials! If you are interested in reading more about this project, check out our newsletter article and associated publications.



UPCOMING EVENTS

Monthly Technical Seminar

“The Materials Genome Initiative, Artificial Intelligence, and the next 10 years”

James Warren **|** ***Director of the Materials Genome Program | Material Measurement Laboratory of the National Institute of Standards and Technology (NIST***

Date: Tuesday, February 21 4-5 PM (note the different time)
Location: *virtual (zoom)
Zoom Meeting Link Here

Abstract: The US Materials Genome Initiative has recently embarked its second decade. With a goal of accelerating the discovery, design, development, and deployment of new materials into manufactured products, the MGI is focused on the creation of a materials innovation infrastructure. My institution, the National Institute of Standards and Technology (NIST), has framed its support for the MGI around the need for a data infrastructure that enables the rapid discovery of existing data and models, the tools to assess and improve the quality of those data, and finally the development of new methods and metrologies based on that data. In partnership with agencies across the government, academia, and industry, these approaches are now yielding significant advances. Of particular note is the potential for machine learning and artificial intelligence applications upon these troves of data, which is now being borne out, and the vast consequent opportunities for new discoveries. Additionally, and in light of the many changes in how materials R&D is done, the MGI is has just released a new strategic plan, charting a plan for for next 10 years of an evolving materials innovation infrastructure, which I will review in this lecture.

Bio: Dr. James A. Warren is the Director of the Materials Genome Program in the Material Measurement Laboratory of the National Institute of Standards and Technology (NIST). After receiving his Ph.D. in Theoretical Physics at the University of California, Santa Barbara, in 1992 he took a position as a National Research Council post-doc in the Metallurgy Division at NIST. In 1995, with three other junior NIST staff members, he co-founded the NIST Center for Theoretical and Computational Materials Science, which he has directed since 2001. From 2005-2013 he was the Leader of the Thermodynamics and Kinetics Group. His research has been broadly concerned with developing both models of materials phenomena, and the tools to enable the solution of these models. Specific foci over the years has included solidification, pattern formation, grain structures, creep, diffusion, wetting, and spreading in metals. In

2010-11, Dr. Warren was part of the ad hoc committee within the Office of Science and Technology Policy's National Science and Technology Council (NSTC) that crafted the founding whitepaper on the Administration's Materials Genome Initiative (MGI). Since 2012, Dr. Warren has served as the Executive Secretary of the NSTC MGI Subcommittee, coordinating inter-agency efforts to achieve the goals laid out in the MGI. He is a Fellow of the American Physical Society, ASM International, and The Minerals Metals and Materials Society.

Biweekly Project Meetings Available To All Members

If you are interested in attending any biweekly project meeting, please visit our Members portal, which can be accessed via the link at the top right of our Center website. You can also go to a specific project and raise a request to get access to the Zoom links to attend any of these meetings. You can also access prior recordings and presentations of any biweekly meetings.

1. netSEM Modeling for Service Life Prediction of Polymers
Prof. Laura Bruckman
February 21, March 7... Tuesdays 1 - 1:30 PM

2. Achieving Reliable Laser Powder Bed Fusion based Additive Manufacturing via Machine Learning of in-situ Optical Profilometry Monitoring Data
Prof. Xiayun Zhao
February 24, March 10... Fridays 4:15 - 4:45 PM

3. Image Machine Learning of Printed Metal Films for EMI Shielding
Profs. Leu, French, Iyengar
March 1, 15...Wednesdays 1:30 - 2 PM

4. Comparative analysis of Machine Learning techniques in predicting structure property relationships for composite dielectric materials
Profs. Sehirlioglu, Martin
February 27, March 13 ...Mondays 10:30 - 11 AM

5. Effects of Aerosol Jet Printing Parameters on the Lifetime Performance of Additively-Manufactured Flexible Circuits
Prof. Janut Gbur
March 3, 17…Fridays 1:00-1:30PM

Check out our calendar with upcoming events here!

JOB OPENINGS AND OPPORTUNITIES

Research Experiences for Undergraduates

If you are an undergraduate interested in a research experience because you are interested in graduate school, going beyond classwork, and working with a faculty and graduate student mentors, please email David Ruvolo (david.ruvolo@pitt.edu) about which of our projects you might be interested in.

NNL Fellowship Opportunities

The Admiral Hyman Rickover Graduate Fellowship Program

Description: This program in Nuclear Engineering prepares graduate students for roles in the Naval Nuclear Propulsion Program as it supports the broader objective of advancing fission energy development through the research efforts of Fellows.

Department of Energy Computational Science Graduate Fellowship Program

Description: Computational Science Graduate Fellows are given opportunities to develop improved algorithms for parallel computer architectures, advanced visualization, advanced data management, etc, etc. You could be involved in new developments within several broad categories, including but not limited to reactor physics, materials science (including semiconductor applications), two-phase flow, and radiation shielding.

Learn more about both opportunities here. Feel free to contact the Fellowship Coordinator Dr. Jake Ballard (jake.ballard@unnpp.gov) with any questions.

Naval Nuclear Laboratory: Materials Engineer

Job Description: “The Naval Nuclear Laboratory is seeking an enthusiastic materials engineer to join our team to develop the next generation of materials for nuclear propulsion systems, support projects currently being designed & built, and provide technical support for the US Navy's operating nuclear power plants. Join a team of experienced engineers with a long history of solving challenging problems. Work may include: Design, coordination, & documentation of material test programs; Integration with suppliers and vendors responsible for fabrication and manufacturing of parts; and / or consults on emergent issues. Areas of interest are manufacturing, mechanical properties, processing, forging, metal working, and specifications of plant components & systems. Test efforts often study heat treatment effects, embrittlement, fracture mechanics, welding fatigue, and aqueous corrosion. The ability to communicate, coordinate, and integrate with many stakeholders is necessary. If you want to put your talents to work in a mission-driven environment, apply now!” Apply here.

Assistant Professor of Industrial Engineering, Tenure Stream

The Department of Industrial Engineering at the University of Pittsburgh invites applications for an open tenure-track faculty position at the assistant professor rank with an expected start date of Fall 2023.

“We are seeking candidates in all areas of industrial engineering with priority given to data science, simulation, AI/ML, and operations research applied to address challenges in health systems, manufacturing, materials, robotics, and quality/reliability. Applicants must hold a PhD in Industrial Engineering or a closely related field. Applicants should also have a strong methodological background and an ability to conduct impactful, cutting-edge, interdisciplinary research. Our primary search criterion is the potential to build and sustain a successful research program. Candidates should have evidence of, or potential for, teaching excellence.” For more information on how to apply, click here.

Member Summer Internship Opportunities

If you are a Center member interested in offering summer internship opportunities to our graduate or undergraduate students, please contact David Ruvolo (david.ruvolo@pitt.edu) and we will be sure to feature the opportunity in our next newsletter and distribute information to students.

Submit News

Fill out a news form here!

Submit Job Openings

*For MDS-Rely members only

Fill out a job opening form here!

Interested in partnering with Case Western or Pitt Professors?

Please contact Dr. Roger French or Dr. Paul Leu for more information!

CONNECT WITH US!

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