



Spring 2023 Newsletter, Volume 41

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ASEE 2023 Annual Conference

Baltimore Convention Center, MD. | June 25th-28th, 2023

ECCNED 2023 Sessions [View Online](#)

Website: <https://sites.asee.org/eccd/>

MESSAGE FROM THE DIVISION CHAIR

Dear ECCNED Members,



It is once again the time of year for all of us engineering educators in the energy area to meet and share our various ideas, innovations, and projects. I hope that you will enjoy the program that our

Program Chair, Dr. Sandip Das, has worked tirelessly put together for us. It will cover a wide range of topics in our broad field. Energy Conversion, Conservation, and Nuclear Engineering Division issues have never been more relevant than today. I invite you to

attend the division's technical sessions, panels, etc. You are also invited to attend the business meeting on Tuesday, June 27, from 3:15 to 4:45 pm. During the business meeting, we will honor the awardees for the best papers. Please join us in congratulating them. Looking forward to seeing you in Baltimore!

Sincerely,
Bob Kerestes, PhD
ECCNED Chair



2022 – 2023 DIVISION OFFICERS

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DIVISION ANNOUNCEMENTS

The ECCNED conference schedule for the 2023 ASEE Annual Conference and Exposition is now available. For more information, please visit the 2023 ASEE Conference webpage, [available here](#).

Please join the ECCNED LinkedIn group for all the latest information! The URL for this group is: <https://www.linkedin.com/groups/12134751>

Come join us at the ECCNED annual division social event on Tuesday, June 27, from 7:00 to 9:00 pm. The location is still being finalized but will be updated on the conference website and announced at the business meeting.

Access to the ECCNED Newsletters Archive is here: <https://sites.asee.org/ECCNED/about/newsletters/>

The annual ECCNED Business Meeting will be held during the 2023 ASEE annual conference. The meeting will take place on Tuesday, June 27, from 3:15 to 4:45 pm in the Tubman room at the Hilton Baltimore Inner Harbor Hotel.



HIGHLIGHTS FROM THE 2022 CONFERENCE

At the 2022 ASEE Annual Conference in Minneapolis, Minnesota, the Energy Conversion, Conservation and Nuclear Engineering Division had 17 papers presented in 4 technical sessions, held 2 discussion panels with 9 guest speakers, one

poster session, one distinguished lecture, and one business event (Energy Conversion, Conservation and Nuclear Engineering Division Business Meeting).

ECCNED 2023 CONFERENCE SESSIONS

M316 · Technical Session 1: Academia-Industry Connections

Mon. June 26, 11:00 am to 12:30 pm in Room 345, Baltimore Convention Center
Moderators: Prof. Saquib Ahmed and Dr. Seyed Mousavinezhad

- 1. What makes a solar engineer?** [[view paper](#)]
Joseph Ranalli (Pennsylvania State University Hazleton) and Mesude Bayrakci Boz (Pennsylvania State University Hazleton)
- 2. Identifying the Needs of Electric Power Industry through Online Job Ads: A Mixed-Methods Approach** [[view paper](#)]
Huiye Yu (UNSW Sydney), Hua Chai (University of New South Wales), and Jayashri Ravishankar (University of New South Wales)
- 3. Adapting Capstone Design for the Solar District Cup Competition** [[view paper](#)]
Joseph Ranalli (Pennsylvania State University Hazleton)
- 4. Efficiency Analysis of a Hybrid Solar System Design** [[view paper](#)]
Ryan Thomas Flynn, Caleb Holdridge, Alexandra Murphy, Jacquelyn Autumn Carter, Sarah Schollenberger, and Tooran Emami (United States Coast Guard Academy)
- 5. A Novel Approach to Teaching Power Systems Analysis and Design Using Software Development** [[view paper](#)]
Paulo Radatz (Electric Power Research Institute) and Robert J Kerestes (University of Pittsburgh)

T416 · Technical Session 2: Broadening Participation in Engineering and Engineering Technology and Pre-College

Tue. June 27, 1:30 pm to 3:00 pm in Room 345, Baltimore Convention Center
Moderators: Dr. Tony Kerzmann and Dr. Sandip Das

- 1. 3D-Printed Piezoelectric Acoustic Energy Harvester** [[view paper](#)]
Michael A. Palmateer, Jacob Plesums, Ryan Santiago, Austin Miller, and Reza Rashidi (SUNY University at Buffalo)
- 2. Motor Augment for Automotive Applications** [[view paper](#)]
Bala Maheswaran (Northeastern University), Wendao Li, Adam Ma (Northeastern University), and Kalsang Tsering
- 3. Power Generation Using the Bayous** [[view paper](#)]
Mahmud Hasan (University of Houston-Downtown) and Julio Enrique Aleman (University of Houston-Downtown)



4. **Strategic Outreach for Nuclear Workforce Pipeline Development and Maintenance at a Historically Black College University** [[view paper](#)]

Antony Kinyua (Morgan State University), Ezana Negusse, Richard Damoah, Maajida Murdock, Oludare Adegbola Owolabi (Morgan State

University), and Jonathan Wilson (Morgan State University)

5. **SeaVolt: The Hydro-Powered Underwater Turbine** [[view paper](#)]

Bala Maheswaran (Northeastern University), Dylan Brady Wolter (Northeastern University), Julia Ariano, and Gabriella Marie Green

T216 · Technical Session 3: Academic-Industry Connections and Broadening Participation in Engineering and Engineering Technology

Tue. June 27, 9:15 am to 10:45 am in Room 345, Baltimore Convention Center

Moderators: Dr. Ira Harkness and Dr. Robert Kerestes

1. **Curriculum Development in Renewable Energy and Sustainability** [[view paper](#)]

Ali Zilouchian (Florida Atlantic University), Amir Abtahi (Florida Atlantic University), and Nancy Romance (Florida Atlantic University)

2. **Design of a Massively Open Online Course on Electrical Microgrids with Real Datasets** [[view paper](#)]

Roxana Maria Melendez-Norona (Florida Atlantic University), Maria M. Larrondo-Petrie (Florida Atlantic University), and Eduardo David Sagredo Asesor (Ministerio Energia y Minas Dom. Rep.)

3. **Enhancing job-readiness through short courses: A case study in power engineering** [[view paper](#)]

Hua Chai (University of New South Wales), Huiye Yu (University of New South Wales), Kuthsav Thattai (University of New South Wales), and Jayashri Ravishankar (University of New South Wales)

4. **Enhancing participation, engagement, and retention in undergraduate and graduate curriculum through applied energy conversion course** [[view paper](#)]

Anveeksh Koneru (University of Texas of the Permian Basin)

M416 · Technical Session 4: Broadening Participation in Engineering and Engineering Technology

Mon. June 26, 1:30 pm to 3:00 pm in Room 345, Baltimore Convention Center

Moderators: Dr. Matt Aldeman and Dr. Madhumi Mitra

1. **New Method for Testing Induction Machines in a Teaching Laboratory** [[view paper](#)]

Herbert Hess (University of Idaho), Emily M Conroe, and Daniel Taylor

2. **Online Labs and DEI in Introduction to Thermodynamics Course** [[view paper](#)]

Teodora Rutar Shuman (Seattle University)

3. **Making Electric Machinery Labs Easier to Grade** [[view paper](#)]

Glenn T Wrate (Northern Michigan University)

4. **Implementation and Assessment of an Integrated Extended Reality Renewable Energy Laboratory for Enhanced Learning** [[view paper](#)]

Irina Nicoleta Ciobanescu Husanu (Drexel University), Richard Chiou (Drexel University), and Md Fashiar Rahman (The University of Texas at El Paso)

5. **The technical and educational requirements in establishing a Li-ion coin-cell assembly and testing research facility laboratory in a university environment** [[view paper](#)]

Robert W Fletcher (Lawrence Technological University), Rebecca Almandoz, Maria Lomas, and Zainab Al Salihi



M516 · Panel 1: Teaching Engineering with Energy – Making Energy Literacy Sustainable

Mon. June 26, 3:15 pm to 4:45 pm in Room 345, Baltimore Convention Center

Speakers:

1. Dr. Hector Medina (Liberty University)

W316 · Panel 2: Sustainability in Energy and Environmental Education

Wed. June 28, 11:00 am to 12:30 pm in Room 311, Baltimore Convention Center

Speakers:

1. Dr. Bala Maheswaran (Northeastern University)
2. Dr. Veera Ganeswar Gude (Mississippi State University)
3. Dr. Tooran Emami (United States Coast Guard Academy)
4. Dr. Ramanitharan Kandiah (Central State University)

W144A · Topical Plenary (co-sponsored with Ocean and Marine Division): Maritime Workforce Development with Industry

Wed. June 28, 8:00 am to 9:00 am in Room 322, Baltimore Convention Center

Guest Speaker: Captain David Obermeir, Commanding Officer of the U.S. Coast Guard Yard

This plenary will discuss workforce development at the intersection of engineering and the maritime trades.

M216 · Poster Session

Mon. June 26, 9:15 am to 10:45 am in Exhibit Hall ABCD, Baltimore Convention Center

1. **Board 90: Core Feature Extraction with Computer Vision** [[view paper](#)]
Salvador A. Vargas (California State University, Bakersfield), Daniel Torres (California State University, Bakersfield), and Alberto Cureg Cruz (California State University, Bakersfield)
2. **Board 91: Work-in-Progress: A Systematic Gap Analysis of the Australian Power Engineering Curriculum** [[view paper](#)]
Nisaka Munasinghe (University of New South Wales), Hua Chai (University of New South Wales), and Jayashri Ravishankar (UNSW Sydney)

ENERGY CONVERSION AND CONSERVATION DIVISION

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