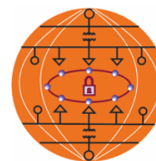




COLLEGE OF ENGINEERING  
BRADLEY DEPARTMENT OF ELECTRICAL  
AND COMPUTER ENGINEERING  
VIRGINIA TECH.



**PEC**  
Power and Energy Center

## PEC Quarterly Newsletter • 2025 Quarter 1

[power.ece.vt.edu](http://power.ece.vt.edu)

### Director's Message

**W**ELCOME to the second edition of PEC Quarterly Newsletter, where we continue to provide a short update about what has kept faculty and students at PEC busy over the last few months and how we have engaged with the IAB. We continued to revamp our website and in addition to several visual enhancements, the website now includes a new section listing courses offered by PEC faculty. As I shared in the previous newsletter, we are growing! Virginia Tech ECE ran two faculty searches over the last few months: One for an assistant or associate professor in power systems and another for a collegiate professor in power systems and electronics. From all of us at PEC, we look forward to seeing you at the **PEC Board Meeting** (April 16, 4pm-5:30pm), **Prof. Chen-Ching Liu's Retirement Tribue** (April 16, 6:00pm-9:00pm), and **PEC Annual Conference** (April 17, 8:00am-6:00pm).

*Ali Mehrizi-Sani  
Professor and Director*

### PEC-IAB Engagement

- **Dominion Energy, AEP, and MEPPI** serve on the advisory board of a DOE-funded project entitled HVDC-Learn. This project aims to create workforce training modules for HVDC technologies, with a focus on offshore wind. The VT PI is **Prof. Ali Mehrizi-Sani**, and the prime is Iowa State University.
- **Dominion Energy** is engaged in a course project in grid-forming STATCOMs. The course is ECE 5344 GFM Inverters for HVDC, FACTS, and Renewables.

### Faculty Highlights

- In their March meeting, the Virginia Tech Board of Visitors (BOV) has conferred **Emeritus** status on **Prof. Chen-Ching Liu**. This prestigious recognition honors his outstanding leadership, vision, and exemplary contributions to the university.
- **Prof. Chen-Ching Liu** moderated and organized a panel on "Energy Education in the Commonwealth," Energy Summit, Virginia Academy of Science, Engineering, and Medicine (VASEM), Glen Allen, VA, Oct 29, 2024. He was also a featured Speaker at "AI and Cybersecurity of the Future Smart Grid," Forum on Smart Grid, AI, and Cybersecurity, National Cheng-Kung University, Taiwan, Dec. 16, 2024.
- **Prof. Chen-Ching Liu** was awarded the title of Honorary Chair Professor, Kun Shan University, Taiwan, Dec. 17, 2024, and was invited to serve as External Examiner for PhD candidate, Delft University of Technology, The Netherlands, Feb 5, 2025.
- **Prof. Saifur Rahman** (the 2023 IEEE president) represented the organization in several sessions at the U.N. Climate Change Conference (COP29), held in November 2024. Representatives from

more than 200 countries attended the event, held in Baku, Azerbaijan. He discussed IEEE's efforts in several areas, such as highlighting technologies that help mitigate climate change, providing training on sustainable technologies to young engineers in developing countries, and publishing unbiased technical information. He made the comment that "As engineers and technologists, we are uniquely placed to provide technical solutions and offer a neutral space for discussion and action." Saifur Rahman was a featured speaker at the Green Digital Action program organized by the International Telecommunication Union at COP29 in Azerbaijan. In his presentations to the World Federation of Engineering Organizations (WFEO), The ITU Green Digital Action Panel, IEEE's Young Professionals Climate and Sustainability Task Force, and the Intergenerational Dialog for Shaping Future Climate Landscapes, **Rahman** highlighted several IEEE programs aimed at combating and mitigating the effects of climate change. They include the Climate Change website, which houses all the organization's resources.

- **Prof. Saifur Rahman's** co-edited book, "Smart Cyber-Physical Power Systems: Fundamental Concepts, Challenges, and Solutions," was published in February 2025.
- **Prof. Ali Mehrizi-Sani** received the 2025 VT College of Engineering Dean's Excellence in Research Award.

## Current Research Sponsors



## New Projects Starting in This and Last Quarters

Faculty	Project Title	Sponsor	Start	Budget
Ali Mehrizi-Sani	Virginia International Research on Technology and Unified Cybersecurity in Electric Systems (VIRTUE)	CCI	1/1/2025	\$10,000
Ali Mehrizi-Sani and Chen-Ching Liu	IRES: U.S.-Australia Program for Research In grid-forMing bAttery inVERters for grid Applications (PRIMAVERA)	NSF	1/1/2025	\$450,000
Lamine Mili	Macro-Resiliency of the North American Power Grid	DOE (via ANL)	12/5/2024	\$255,000
Lamine Mili	EMW propagation modeling in power system dynamics	UChicago Argonne LLC	12/3/2024	\$255,000
Ali Mehrizi-Sani and Jeff Reed	Secure Telecommunications ARchitecture for Trusted and Resilient Electric Communications (STAR TREC)	DOE (via EPRI)	10/7/2024	\$680,000