



Special Webinar
Christina DiMarino
CPES Assistant Professor

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***Empowering Sustainability:
Advanced Packaging and Integration of
Wide-Bandgap Power Semiconductors***

December 4th, 2024

10:00am and 8:00pm ET (US)

ABSTRACT:

Power electronics play a crucial role in the transition toward net-zero climate goals by enabling efficient integration of renewable energy sources, electrification of land, air, and sea vehicles, and enhancing the energy efficiency of data centers and other critical technologies and infrastructure. Wide-bandgap (WBG) power semiconductors, such as silicon carbide (SiC) and gallium nitride (GaN), enable power electronics systems that meet these demands due to their faster switching, lower losses, and higher voltage ratings than conventional silicon power devices. However, new approaches to the packaging and integration of WBG devices are essential to unleashing their full potential. This talk delves into the evolving landscape of WBG power semiconductor packaging and integration, and the unique multidisciplinary packaging challenges posed by these devices. Dr. DiMarino will discuss CPES' state-of-the-art packaging laboratories and instrumentation, innovative packaging solutions from select projects, and future research directions.

BIOGRAPHY:

Dr. Christina DiMarino is an assistant professor at Virginia Tech in the Center for Power Electronics Systems (CPES). She received her M.S. and Ph.D. degrees in electrical engineering from Virginia Tech in 2014 and 2018, respectively. Her research interests include power electronics packaging and high-density integration of wide- and ultra-wide bandgap power semiconductors and medium-voltage power modules. Dr. DiMarino serves as a Member-at-Large for the IEEE Power Electronics Society (PELS), Chair of the PELS Technical Committee on Power Components, Integration, and Power ICs (TC2), Associate Editor for the IEEE Transactions on Power Electronics, and is a member of the PCIM Europe Advisory Board and the IEEE PELS Women in Engineering committee. She has received five best paper and presentation awards at international conferences, the Outstanding New Assistant Professor Award at Virginia Tech in 2022, and the IEEE PELS Richard M. Bass Outstanding Young Power Electronics Engineer Award in 2024.

