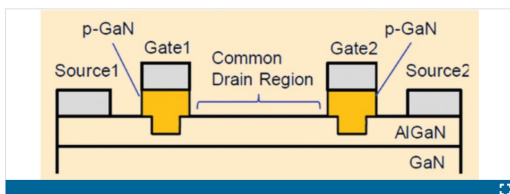


IEEE Power Electronics Magazine



With advances in wide bandgap (WBG) power devices, numerous mass volume power applications have emerged with the ability to control the flow of bidirectional power using SiC and GaN based bidirectional power switches. In the “**Expert View**” column of the March 2023 issue of *IEEE Power Electronics Magazine*, Victor Veliadis, Executive

Director and the CTO of PowerAmerica, discusses how advances in monolithic bidirectional WBG switches can rekindle power electronics technology. The author argues that the development of monolithic SiC and GaN based bidirectional power switches is enabling these applications with their compelling advantages of high efficiency, high blocking voltage capability, and low system weight and volume.

Coming Soon: The June 2023 issue of *IEEE Power Electronics Magazine* with a focus on eGrid and Storage.

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IEEE Transactions on Power Electronics (TPEL)

The **July 2023 issue** of TPEL is now available online. Be sure to check out these highlighted articles selected by TPEL editors.

“**Research on Symmetrical Integrated Matrix Transformer Applied to Full-Bridge LLC Resonant Converter for CM Noise Cancellation**” by Chuang Zhou, Fanghua Zhang, and Ce Xu. This paper explores common-mode (CM) noise issues in planar transformers used in dc-dc power converters, with a focus on the benefits of symmetrical forward integrated matrix transformers (FIMT) over reverse integrated matrix transformers (RIMT) in full-bridge LLC resonant converters.

“**Stability, Reliability, and Robustness of GaN Power Devices: A Review**” by Joseph Peter Kozak, Ruizhe Zhang, Matthew Porter, Qihao Song, Jingcun Liu, Bixuan Wang, Rudy Wang, Wataru Saito, and Yuhao Zhang. This paper offers a comprehensive review of the distinct stability, reliability, and robustness issues of Gallium Nitride (GaN) power devices, aimed at providing insights to engineers for effective deployment in various applications, while also identifying knowledge gaps and research opportunities in the field.

IEEE Power Electronics Letters

In the **June 2023 issue**, we take great pleasure in presenting the inaugural TPEL Letters Special Section, “*Patent-Related Short Articles*.” This section features 15 short articles that delve into novel ideas and concepts within the field of power electronics, all of which have been patented in recent years. The letters from this special section aim to improve the visibility of recently patented ideas to a wide range of audiences. The specific topics of the Special Section include power semiconductor devices, power converter topologies, modulation, and grid-forming control, as well as some advanced and practical applications in power electronics, etc.

Besides the Special Section, we also have 13 regular Letters published in this issue. Two interesting Letters from the issue are highlighted below.

“A Review of Select Patented Technologies for Cooling of High Heat Flux Power Semiconductor Devices,” by Shailesh N. Joshi, Feng Zhou, Yanghe Liu, Danny J. Lohan, Hiroshi Ukegawa, Jae Lee, and Ercan M. Dede. This work presents an excellent review of patented technologies on liquid cooling solutions for power semiconductor devices, with a particular focus on SiC MOSFET devices.

“Coded Power Transfer” by Sudip Kumar Mazumder. This work presents two patented technologies on utilizing the hybrid modulation of data and power in power electronics systems. One patent demonstrates the efficiency enhancement with the hybrid modulation, and the other presents the efficacy of power and data transfer.

IEEE Open Journal of Power Electronics (OJPEL)

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IEEE Transactions on Transportation Electrification (TTE)

The editorial team of *IEEE Transactions on Transportation Electrification (TTE)* is pleased to announce a new **Call for Papers: Special Issue on Electrified Ship Technologies**. The full paper submission deadline is January 31, 2024. The expected publication date is September 2024. All manuscripts must be submitted through **Manuscript Central**.

IEEE Journal of Emerging and Selected Topics in Power Electronics (JESTPE)

Are you ready for the upcoming issue of **JESTPE**? Stay on the lookout for these invited papers that are a part of the upcoming Special Issue on Future of Power Electronics: Components, Circuits, and Systems.

“Silicon Carbide Power Devices: Progress and Future Outlook” by B. Jayant Baliga. Silicon Carbide (SiC) power devices have become commercialized and are being adopted for many applications after 40 years of effort to produce large diameter wafers and high performance device structures. This paper provides a historical perspective of the key breakthroughs that were needed to make progress towards this goal.

“Wireless Power Transfer: A Paradigm Shift for the Next Generation” by Shu-Yuen Ron Hui, Yun Yang, and Cheng Zhang. Without compromising compatibility, the authors share in this paper their views on the need for a paradigm shift from compatibility to optimal performance in terms of maximum energy efficiency for the entire charging process and minimum charging time. This paradigm change is imminent and important in view of the increasing power of WPT applications. Several enabling technologies essential to the paradigm shift will be addressed.

“Data Center Power Supply Systems: From Grid Edge to Point of Load” by Yen-an Chen, Keyan Shi, Min Chen, and Dehong Xu. This paper presents an overview of the data center power supply system covering the power delivery path from the grid edge to onboard Point-of-Load conversion.



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