



## Electromagnetic Modeling in Power Electronics

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### Message from the Guest Editors

EM effects can play a major role in the operation of PE devices and systems. They can either be the main underlying operational mechanism, or may need to be mitigated in order to allow operation free from EM interference and noise. In either case, there is a substantial benefit in having accurate and efficient EM methods and techniques to model these effects. This allows the performance of devices and systems to be predicted, evaluated, and optimized by simulations in an early design stage prior to prototyping, thereby reducing cost and minimizing subsequent redesigns.

- Numerical techniques for EM modeling of PE components and systems (PEEC, FEM, MoM);
- Behavioral modeling and EM characterization of PE components and systems (vector fitting, neural networks, reduced order models, SPICE equivalent circuits);
- EM modeling of wireless power transfer (WPT);
- Electro-hydrodynamic (EHD) modeling;
- EMI/EMC modeling and characterization of PE converters and drives;
- Passive and active EMI filters for PE converters;
- Radiated and conducted noise emissions of PE systems;
- EMI modeling for smart grids.





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