

EMC Professional Talk



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Temperature-Dependent Analytical Modelling on the dV/dt and dI/dt of FS IGBT

Field-stop insulated gate bipolar transistors (FS IGBTs) are widely used for medium and high-voltage power converters. With the FS layer utilized, the fast switching of the FS IGBT generates high dV/dt and dI/dt at the switching transient. The high dV/dt and dI/dt generate a high level of EMI noise, which can induce electromagnetic compatibility (EMC) problems for the power converter. To tackle the problem, fast and accurate modeling of dV/dt and dI/dt is mandatory. In this webinar, a temperature-dependent analytical model on the switching behavior of FS IGBTs is presented. Complete analytical expressions of dV/dt and dI/dt in each of the phases are presented. The pivotal temperature-dependent device parameters are identified. The temperature-dependent models of the parameters are also included in the model.

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[Registration](#)

About the speaker:

Peng Xue received the M.S., and Ph.D. degrees from Beijing University, Beijing, China in 2013 and 2017, respectively.

From 2017 to 2019, he worked as a Postdoctoral Research Fellow with the Department of Electrical Engineering and Information Technologies, University of Naples Federico II. From March to May 2004, he was a visiting scholar with Fraunhofer Institut for Reliability and Microintegration IZM, Germany. He is currently a Postdoctoral researcher at the Department of Energy, Aalborg University, Aalborg, Denmark. His research interests include characterization and modeling of power semiconductor devices, EMI control and modeling, and advanced gate control for power electronics.

Organization:

Associate Prof. Pooya Davari, AAU Energy, Aalborg University
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