

Séminaire

Le mardi 19 mars 2019, 14h45
Des rafraîchissements seront servis dès 14h15
Complexe de recherche avancée, pièce 233
Université d'Ottawa, 25, rue Templeton
Le séminaire se déroulera en anglais.

Seminar

Tuesday, March 19, 2019, 2:45 p.m.
Refreshments to be served starting at 2:15 p.m.
Advanced Research Complex, room 233
University of Ottawa, 25 Templeton Street

IXC2-based bridgeless totem-pole power factor correction

Tanya Kirilova Gachovska, Solantro Semiconductor Corp.

Abstract: The “80 Plus Titanium” standard for power supplies requires an efficiency level greater than 96%. The Totem-Pole Power Factor Correction (PFC) topology has attracted designers’ attention due to its lower number of switches, higher efficiency, higher power density and better EMI/RFI. Two control modes for Totem-Pole PFC topologies are generally used: Continuous-Conduction Mode (CCM) and Transition Mode (TM). The Advanced Digital Power Controller IXC2 is the ideal device for easy implementation of both control modes. The IXC2 enhances the performance of a Bridgeless Totem-Pole PFC by allowing a seamless transition between variable frequency, soft switching TM and variable frequency, partial soft switching CCM, resulting in high efficiency, lower stress on switching FETs, lower stress on the inductor and reduced EMI/EMC with less stringent filtering requirements. Design considerations and characterization results of Solantro IXC2-based Bridgeless Totem-Pole PFC will be presented and discussed.



Bio: Tanya Kirilova Gachovska received her M.Eng., and Ph.D. Degrees, all in Electrical Engineering, from the University of Ruse, Bulgaria, in 1995 and 2003. She earned her second Ph.D. Degree in Electrical Engineering (Power Electronics), at the University of Nebraska-Lincoln (UNL), Lincoln, USA in 2012. Her Ph.D. thesis was “Modeling of Power Semiconductor Devices”. She worked as an Assistant Professor at the University of Ruse from 1999 to 2003. She conducted research from 2004 to 2006 and taught for a semester in 2006 at McGill University in Montréal. She worked as a Postdoctoral Research Scientist in the area of Pulsed Electric Fields at UNL from 2012 to 2013. During her Ph.D. studies at UNL, she taught various courses and labs, and continued a collaboration in Pulsed Electric Fields research with McGill University, University of Ruse, University of Djiali Liabes, Sidi Bel Abbes, Algeria and École Nationale Supérieure Agronomique, El Harrach, Algeria. She joined Solantro Semiconductor, Corp., Ottawa in 2013. Dr. Gachovska authored or co-authored more than 30 technical papers and conference presentations, two books, and two book chapters and holds a world patent in Pulsed Electric Fields. She is a vice chair of IEEE-IAS Power Electronics Devices and Components Committee and Co-chair of PELS Ottawa. She is also a senior IEEE member.

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