



SEMINAIRE EXCEPTIONNEL

de 16 h à 17 h, salle 2-55, Bât. INP, MINATEC,
ouvert aux chercheurs des autres laboratoires

Mercredi 18 juin 2008

“Superjunction devices - a radical step change in high voltage electronics”

par Florin UDREA

Abstract: Superjunction has arguably been the most creative and important concept in power device field since the introduction of the bipolar-MOS transistor in 1980s. It is the only concept known today that has challenged and ultimately proved wrong the well-known theoretical study on the limit of silicon in high voltage devices. What makes superjunction devices unique and makes them first choice in some market places? What can we expect from superjunction device concepts in terms of moving the boundaries in power electronics? The tutorial will answer these questions and give an overview on the major aspects of superjunction devices and technologies. The device concept will be compared to other methods of enhancing the conductivity of power devices to derive the characteristic set of benefits and limitations of superjunction devices.

Dr. Florin Udrea is a reader in Engineering Department at Cambridge University working in the field of power electronics. Dr. Udrea has published over 240 papers in journals and international conferences and holds over 30 patents in power semiconductor devices and sensors. Currently Dr. Udrea is leading a research group in power semiconductor devices and solid-state sensors. In August 2000 Dr Udrea co-founded with Prof. Gehan Amaratunga, Cambridge Semiconductor (Camsemi), a start-up company in the field of power integrated circuits. Dr. Udrea is a member of the committees of ISPSD (the major conference in power devices), IEDM and CAS.

*Institut de Microélectronique, Electromagnétisme et Photonique
MINATEC, INPG, 3 Parvis Louis Neel, BP 257, 38016 GRENOBLE CEDEX 1, France
Tél. +33 (0) 456.529.503 - Fax. +33 (0) 456.529.501
UMR 5130 CNRS INPG UJF
Institut National Polytechnique de GRENOBLE*