University of Macau
State Key Laboratory of Analog and Mixed-Signal VLSI
2-Day Workshop on Integrated Power and Energy in Semiconductor

Date & Time:	17 Dec – 18 Dec 2014 10:00am – 1:00pm on 17 Dec 2014 10:00am – 1:00pm on 18 Dec 2014
Venue:	Library Auditorium, G/F of UM Wu Yee Sun Library (E2)
Language:	English
Target Audience:	All are welcome

Abstract:
The megatrends of our modern society such as energy efficiency, E-Mobility and Renewable Energy Technologies are asking for Green Power Electronic Solutions. Power semiconductor devices are an enabling technology to meet these requirements. The major electrical improvement of the new generation of power devices is coming from the overall silicon utilization and high level of system integration. The reliability and ruggedness of these new power semiconductors is driven by an advanced chip interfacing and packaging technology. For ultra high efficiency and ultra high power density solutions WB-devices are being developed. However it has to be considered that the application engineer is faced with new challenges of how to manage all the parasitic; thermal management and circuit set up. In the presentation the development trend of Power Semiconductor Devices , SMART Power devices and system integration will be shown and the challenges in the application will be discussed. New devices structures will be highlighted and their impact on the electrical and thermal performance outlined.

Biography:
Prof. LEO LORENZ received the M.Eng. degree from Univ. of Berlin Germany in 1976 and the PhD. degree (first class Hons.) from University of Munich in 1984 (Germany).
He is currently Technology Advisor for New Power Semiconductor Devices at Infineon Technologies Munich. From 1988 to 1998 he was Senior Director at Siemens responsible for Power Semiconductor Devices in Automotive & Industrial Application. From 1998 to 2012 he served as Senior Principle in Application and Concept Engineering for all power semiconductor Technologies in Munich/Singapore/Shanghai. In this field he has published more than 400 Journal/conference papers with a high citation rate and is the owner of more than 40 patents. He gave more than 50 key note presentations at high level Summits and Conferences.

Beside his work in Industry he is a Honorable/Adjunct Professor at several Universities in Germany and Worldwide. In this function he provides courses on power semiconductor technologies and supervised more than 20 PhD Students.
Dr. Lorenz is Founder of ECPE (European Center of Power Electronics) and since the foundation in 2003 President of this organization. He is Founder/Co-founder of several conferences such as CIPS (Conference on Integrated Power Systems), EPE (European Power Electronic Conference), PCIM Asia, ISPSD, etc. He served as General Chair of several Conferences e.g. CIPS since 2005, EPE 2005, ISPSD 1997, PCIM since 2001 and is in the Advisory Board of all of these Conferences. Dr. Lorenz received several times the best paper Award at IEEE Conferences. In 1996, 98 and 99 he received the Siemens Innovation Award and from the German Industry Society the Innovation Award in 2002.

Beside these he received several high level IEEE Awards e.g. IEEE-ISPSD Outstanding Contributory Award in 2010 (Japan), the IEEE- Gerald Kliman Innovator Award in 2011 (USA) and the IEEE- William E. Newell Power Electronics Award in 2012 (USA).

He is a distinguished lecturer at several Universities since 2003. He owns an IEEE- Fellowship since 2006 and is a Member of German Academy of Science since 2005. Dr. Lorenz is in the Advisory Board of several Research Institutions e.g. Fraunhofer Institute, Robert Bosch Center, CORPE Denmark etc. and a Technology Advisor/Reviewer of Governmental Organizations and Funding Programs.

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模擬與混合信號超大規模集成電路國家重點實驗室

SSCS Chapter

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IEEE POWER ELECTRONICS SOCIETY Macau Chapter