



University of Pavia
Ph.D. School in Microelectronics

SEMINAR

Analog Testing and Modeling

Prof. Alkis A. Hatzopoulos
University of Thessaloniki

21st September 2016 / 15:00

Aula Seminari Ex. Dipartimento Elettronica - Piano D

The presentation will include three parts:

- a) Wavelet-based Mixed-Signal Testing Using Supply Current Measurements. A microcontroller-based testing system aiming to be implemented in the production line of emergency luminaire devices is described. Also, some ideas for classification based testing using a machine learning approach will be discussed
- b) 3D integrated circuits modeling and testing. The derivation of closed-form expressions for the coupling capacitance and inductance between Through-Silicon VIA (TSV) arrays will be analysed. Also, modeling and analysis of cracked and void hole defected TSV Interconnections will be presented.
- c) Substrate and interconnection modeling for frequencies from DC up to 100 GHz. A model for calculating capacitive and resistive coupling on lightly and heavily doped CMOS processes will be described. The model is based on the general geometrical shapes of the current flow as they emerge from a current flow extraction software. Also, a study of the performance of metal interconnections on lightly doped bulk and epi layers for frequencies up to 100 GHz will be presented.

Bio: Prof. Alkis A. Hatzopoulos was born in Thessaloniki, Greece. He received his Degree in Physics (with honours), his Master Degree in Electronics and his Ph.D. Degree in Electrical Engineering from the Aristotle University of Thessaloniki, Greece, in 1980, 1983 and 1989, respectively. He was a research associate in the Department of Electrical and Computer Engineering at the Aristotle University of Thessaloniki for seven years and in 1989 he was elected as a Lecturer. Currently he has been elected as a Full Professor in the same Department. Since 2002 he is also the Director of the Electronics Laboratory.

Prof. Hatzopoulos is a Senior Member of IEEE and has been elected as IEEE Greece CASS-SSCS joint Chapter Chair. He has served as session Chairman in many IEEE conferences. He has been a visiting Professor at Michigan State University, MI, USA, (Feb. - July 1995), a visiting Professor at the Katholieke Universiteit Leuven, Belgium (Feb. - July 2004) and also a visiting Professor at University of Texas at Dallas, TX, USA (Jan. - July 2016). He is actively involved in educational and research projects and he is the author or co-author of more than 150 scientific papers in international journals and conference proceedings.

His research interests include: design and fault diagnosis of integrated circuits and systems (analog, mixed-signal, RF), electronic communication circuits, instrumentation electronics.

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