



University of Pavia  
Ph.D. School in Microelectronics

## Seminars

***Prof. Juan Manuel Carrillo***

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***Circuit Techniques for CMOS Low-Voltage Analog Design***

**29/05/2017 - h. 14:30**

Aula Seminari ex-Elettronica - Piano D

In this seminar, an overview of a wide variety of low-voltage circuit design techniques is provided. First, the main limitations for operation with low and extremely low supply voltages are pointed out. Then, different solutions to design low-voltage input/output rail-to-rail operational amplifiers are detailed. Finally, three circuit techniques, i.e., bulk-driven MOST, floating-gate MOST, and quasi-floating-gate MOST, are detailed and compared by means of a design example.

***On the Use of Bulk-Driven MOS Transistors in Low-Voltage Analog Design***

**30/05/2017 - h. 14:30**

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The reduction of the total supply voltage in CMOS integrated circuits has led to the need for solutions able to operate in a wide voltage range in order to obtain an acceptable signal-to-noise ratio. A suitable solution to increase the input voltage range of an analog cell is the bulk-driven technique, so called because the input signal is applied to the bulk terminal of the input transistors. In this seminar, an overview of the technique is provided and different particular applications are illustrated.

Bio: Prof. Juan M. Carrillo obtained his BSc, MSc and PhD degrees in Physics from the University of Extremadura, in Badajoz (Spain). He has carried out research stays in Texas A&M University (Texas-USA), Fraunhofer Institute for Integrated Circuits (Erlangen-Germany), and Dept. of Electronics of the University of Pavia (Pavia-Italy). Currently, he teaches electronics and microelectronics at the Dept. of Electrical, Electronic and Automation Engineering in the School of Industrial Engineering of the University of Extremadura. His research field is related to low-voltage low-power analog and mixed signal circuit design, with special emphasis in biomedical applications, where he has published different papers in international journals and conferences.

**Organizer**

Prof. Guido Torelli

**Ph.D. Coordinator**

Prof. Guido Torelli

The seminar will be held English

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