



SINANO Device-Modelling Summer School
ARCES – University of Bologna
20th – 25th August, 2006



First Announcement

The University of Bologna Device Modelling Group and the ARCES Research Center are proud to announce the second summer school on “Semiconductor Device Simulation” to be held at the historic Bertinoro Castle (Residential Center of the University of Bologna, Italy) (www.centrocongressibertinoro.it). It is hosted by ARCES within the framework of the European SiNANO network of excellence.

This comprehensive set of classes is aimed at doctoral level researchers from both industry and academia and will be taught by world's leading device simulation experts. Via a programme consisting of lectures, tutorials, advanced discussion groups and practical laboratory sessions, students will expand and refine their knowledge of the design, optimisation, simulation and characterization of cutting edge Nano-CMOS devices.

The specific topic areas will be:

- Physical models for device and process simulation.
- Numerical issues for device simulation.
- Case studies on Device Simulation.
- Compact modeling.
- Electrical Characterization Techniques.

In addition to learning about the most advanced device modelling techniques available, students will also gain practical experience, during laboratory sessions, in using TCAD simulation tools.

There will also be a comprehensive social programme attached to the course including dinners, visit to museums and excursions.



Over the next couple of months detailed information will be made available through the summer school web site (<http://sinanoschool06.arces.unibo.it>) with details on how to register, accommodation, a full programme and list of guest lecturers.

Advanced Program

Introduction

Historical Trends and Future Perspectives of Silicon Technology Scaling – Prof. Hiroshi Iwai, University of Tokyo, Japan

Physical Models

Physical Models for PDE Based Device Simulation - Prof. Giorgio Baccarani ARCES, University of Bologna, Italy

Advanced Process Modeling - Prof. Nick Cowern University of Surrey, UK

Advanced Models for Transport - Prof. David Esseni University of Udine, Italy

Numerical Issues and TCAD

Gridding and Discretization – Dr. Bernhard Schmithuesen ETH Zurich, Switzerland

Basics of Monte Carlo Device Simulation - Prof. Pierpaolo Palestri, University of Udine, Italy

Tool Integration for Technology CAD – Prof. Hans Kosina, University of Wien, Austria

Four Case Studies on Device Simulation

Quantum Transport, Prof. Mark Lundstrom Purdue University, USA

Simulation of Novel MOSFETs – Dr. Mark Stettler, INTEL Co., Usa

Summer School Co-Directors

Prof. Enrico Sangiorgi, ARCES, University of Bologna

Prof. Asen Asenov, University of Glasgow

Non Volatile Memories - Prof. Andrea Lacaita Politecnico of Milan, Italy

Atomistic Simulation – Prof. Gerhard Klimeck Purdue University, USA

Compact Modeling

General Overview – Dr. Reinout Woltjer Philips, The Netherlands.

RF and Noise – Dr. Andries Sholten Philips, The Netherlands.

Statistical Models – Prof. Asen Asenov, Glasgow University, UK.

Analytical Models – Prof. Raphael Clerc IMEP, Grenoble, France.

Electrical Characterization

General Overview on Electrical Characterization – Prof. Luca Selmi University of Udine, Italy

Charge Pumping and Interface Characterization – Prof. Guido Groeseneken IMEC, Belgium

Noise Characterization in RF Circuits and Devices – Dr. Peter Baumgartner Infineon Technology, Germany

Local Organizing committee

Prof. Claudio Fiegna, ARCES, University of Bologna

Mrs. Rita Mambelli, ARCES, University of Bologna

