Program

DAY 1 - August 28th 2012

8:45	Opening of the summer school
Nanoelectronics at the limits of computation and communication	
9:00 – 10:30	**Prof. Hervet Fanet**, CEA LETI, “Energy efficient nanoelectronics: present and future” (CONFIRMED)
10:30 – 11:00	Break
11:00 – 12:30	**Prof. Luca Gammaitoni,** University of Perugia “Energy extraction from noise” (CONFIRMED)
12:30 – 14:00	Lunch Break
14:00 – 15:30	**Dr. Michel Brillouet** CEA LETI “More than Moore roadmaps”
15:30 – 16:45	**Prof. Victor Zhirnov,** North Carolina State University “Fundamental limits of in charge based computing” (CONFIRMED)
16:45 – 17:00	Break
17:00 – 18:15	**Prof. Marco Chiani**, University of Bologna “Fundamental limits of energy in communication” (CONFIRMED)
20:00	Dinner

DAY 2 - August 29th 2012

Nanoelectronics at the limits of sensing and energy conversion	
9:00 – 10:30	**Prof. Marco Sampietro, Polytechnic of Milan, (IT)** “Extreme impedance sensing for nanotechnology”.
10:30 – 11:00	Break
11:00 – 12:30	**Prof. Claudio Fiegna,** University of Bologna, “Ultimate limits in photon energy conversion” (CONFIRMED)
12:30 – 14:00	Lunch break
14:00 – 15:30	**Prof. Arjang Hassibi**, Univ. of Texas, Austin ”Limits of biosensing”
15:30 – 17:00	**Prof. Christofer Hierold, ETH Zurich (CH),** “Ultimate limits in sensing”
17:00 – 17:30	Break
17:30	**VISIT TO THE CASTLE - meeting point outside Revellino room**
20:00	Social Dinner – Bistrot Colonna – meeting point at 19:30 outside Revellino room

DAY 3 - August 30th 2012

Advanced device modelling	
9:00 – 10:30	**Prof. Sokrates Pantelides**, Vanderbild University “Atomistic device simulation” (CONFIRMED)

Advanced device modelling	
10:30 – 11:00	Break
11:00 – 12:30	**Prof. Giorgio Baccarani**, University of Bologna and IUNET, Italy, “Perspectives of numerical device simulation” (CONFIRMED)
12:30 – 14:00	Lunch break
14:00 – 15:30	**Dr. M.Luisier**, ETH, “Quantum transport” (CONFIRMED)
15:30 – 16:45	**Prof.Aldo Di Carlo**, University of Rome, Tor Vergata, “Multiscale multiphysics simulation of sensors”
16:45 – 17:00	Break
17:00 – 18:15	**Dr. Tibor Grasser,** “Reliability modeling for advanced CMOS devices” (ALMOST CONFIRMED)
20:00	Dinner

DAY 4 - August 31st 2012

The last day of the school will focus on steep slope switches for energy efficient electronics. Outstanding speakers from the groups participating to the EU STEEPER project (www.steeper-project.eu) on small subthreshold swing switches will describe with tutorial presentations the most recent advances and the future perspectives in this field. Lectures will overview current CMOS device and system design options to reduce power consumption and will illustrate beyond CMOS device concepts which held the promise for operation at significantly reduced supply voltages. Challenges in the accurate modeling and simulation of steep slope switches, which often rely on different physical principles than the MOSFET, will be addressed as well.

Steep slope switches for energy efficient electronics - organized in collaboration with the STEEPER Project	
9:00 – 10:00	**David Frank**, IBM USA, ”System level advantages of small slope devices” (CONFIRMED)
10:00 – 11:00	**"Speaker from the IUNET consortium"** “Tunnel FET and Energy filtering device concepts”
11:00 – 11:30	Break
11:30 – 12:30	**"Speaker from the STEEPER consortium"**, "Modeling Tunnel FETs and STEEP slope devices
12:30 - 13:00	Closing of the summer school
13:00	Lunch