



Thematic Network on Silicon on Insulator Technology, Devices and Circuits.
[IST-1-506653-CA]

EUROSIO "Who is Who" Guide

Name of the organisation

<i>Organization Legal name:</i>	ARCES, Alma Mater Studiorum, Università di Bologna
<i>Organization short name:</i>	ARCES
<i>Internet homepage:</i>	www.arces.unibo.it

Contact person

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Experience and expertise fields: (50 words)

Physics-based numerical simulation of advanced SOI MOSFETs and nanowire-channel Multi-Gate MOSFETs. Monte Carlo, Schrödinger-Poisson. Application of numerical simulation to the analysis of CMOS-SOI scaling. **Experience:** Extraction of device parameters (mobility, multiplication factors, etc..) up to very high operating temperatures; Investigation of transport modeling in emerging or alternative nanoelectronic devices such as nanotubes and nanowire-channel MOSFETs. Efficient solution of the Boltzmann Transport equation using the spherical harmonic expansion method applied to nanoscale MOSFETs; Mobility modelling in ultra thin silicon layers.

Facilities and Equipment:

10 PC-Linux for numerical simulation. PC-Linux cluster for high-performance calculation. Characterization of devices and circuits from DC to RF and characterization of MEMS. Equipment: Probe Station Cascade SUMMIT 11751 8; E5071B Agilent Technologies Network Analyzer; Semiconductor parameter analyzer HP 4156C with option 41501B; Optical profilometer Wyko NT 1100. Software: ISE simulation Tools, Crystal98 simulation tool

Three last international research projects:

SINANO Network of Excellence IST 6th FP
IST-2001-38931 EU Project "High-Tree"
IST FP6 EU Project "MAESTRO"