



[IST-1-506653-CA]

EUROSIOI "Who is Who" Guide

Name of the organisation

<i>Organization Legal name:</i>	Universita` degli Studi di Udine
<i>Organization short name:</i>	UNIUD
<i>Internet homepage:</i>	www.diegm.uniud.it

Contact person

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Other Senior Researchers

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Experience and expertise fields

Modelling of semiconductor devices with emphasis on Full band structure calculations and Full band Monte Carlo transport techniques for free and quantized electron gases.
Dc, ac, rf (20 GHz), time domain and pulsed characterization of semiconductor devices with emphasis on carrier transport, hot carrier effects, ultra-low currents.
Spectrally resolved characterization of Electro-luminescence with single photon counting techniques.

Facilities and Equipment

Commercial (ISE) and in house developed device simulators including:

- 1) general purpose self-consistent Monte Carlo transport code for free electron gas (3d in k-space, 2d in rspace, bulk and SOI MOSFET) in Si and SiO₂ featuring quantum corrections for charge displacement from interfaces, substrate current and gate current and anode hole injection calculation, photon emission calculation;
- 2) general purpose Schroedinger Poisson solver in the effective mass approximation for multi-dielectric gate stacks featuring both electron and hole quantization and tunnelling gate current calculation.
- 3) general purpose self-consistent Monte Carlo transport code for quantized electron gas (2d in kspace, 2d in r-space, bulk and SOI MOSFET).
- 4) Complete dc, ac and rf (20GHz) and time domain characterization of semiconductor devices, on wafer (8") in the -65 – 200 degree C temperature range. 77K characterization of packaged devices.



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Three last international research projects:

UE - ULIS working Group on ULtimate Integration of Silicon

UE - NESTOR project on 25nm Double Gate SOI Transistors (IST-2001-37114)

UE - SINANO Network of Excellence on Silicon Nanotechnology