EDEMOM

European Doctorate in Electronic Materials, Optoelectronics and Microsystems

25 de Enero de 2012

CONSORTIUM

- URT, Università Roma Tre, Italia
- WUT, Warsaw University of Technology, Poland
- UPM, Universidad Politécnica de Madrid, Spain
- UPDD, Université de Paris 7 - Denis Diderot, France
- UNSA, Université de Nice Sophia Antipolis, France

General Objective

- To provide doctoral training programs for European students in highly qualified European Universities and Research Centers involved in various fields of research on
  - Solid State Electronics,
  - Optoelectronics,
  - Nanoelectronics,
  - Microelectronics and
  - Microsystems.

Objectives

- To promote a highly-qualified "***European Doctorate in Electronic Materials, Optoelectronics and Microsystems***"
- To ***bring together*** the unique ***teaching*** and ***research*** features of highly qualified European Universities and Research Institutes
- To create a ***link*** between ***academic*** and ***industrial*** bodies in Europe
- To ***assist*** the ***development*** of ***less favored regions***

Doctorate themes

- Electronic Materials,
- Solid State Electronics,
- Optoelectronics,
- Device Modeling,
- Circuit Design,
- Device's Integration Technology and
- Information and Communication Technologies

Doctorate Structure and recruitment procedure

- Personal Career Development Plan
- *Hosting Institute*
- *Associate Institute*

Funding for Hosting Institutes and Associate Institute

- Hosting Institute is usually supported by the University or by National funding schemes
- Associate Institute is open to various forms of support and, in particular, to various actions of the Seventh Framework Program, such as Human Resources and Mobility (Marie Curie Actions) and Networks of Excellence in the IST Thematic Priority

Topics matrix

Fundamentals Application	Numerical Analysis and Algorithms	Stochastic Processes	Solid State Electronics	Optoelectronics	Functional Analysis	Technology	Optimization Methods	Dynamical Systems Theory
Materials for Micro- and Nanoelectronics		X	X	X		X	X	
New Device Concepts	X	X	X			X	X	
Sensors and Microsystems	X		X	X	X	X		X
Circuit Design	X		X		X	X	X	X
Mixed Mode ICs (System-on-Chip) (Integrated Optoelectronics)	X		X	X		X	X	
System Design Technology	X		X			X	X	
Communication	X	X	X	X		X		X
Pattern Recognition and Classification	X	X		X	X		X	

CONSORTIUM MEMBERS DESCRIPTION

TELECOMUNICACIÓN

Campus Sur

Università Degli Studi “Roma Tre”

- **Doctoral School EDEMOM – Section: Department of Electronic Engineering University “Roma Tre”**
- **Electronic Materials, Optoelectronics and Microsystems**
- The PhD program is focuses on science, technology and characterization of novel electronic/optoelectronic devices and systems.

Università Degli Studi “Roma Tre”

- **Principal laboratories involved in the doctoral school:**
  - **Nonlinear optics & optoElectronics Laboratoty (NooEL)**
  - **Electrical and Electronic MEAsurements Laboratory (MEALab)**
  - **Electronic for Security and Cultural**
  - **HEritage Research – LABoratory (ESCHER-LAB)**

Università Degli Studi “Roma Tre”

- Fields studied in the doctoral school
  - Nonlinear optics and applications in inorganic crystals and organic soft matter
  - Optoelectronic materials, devices and microsystems
  - Electronic Measurement systems
  - Optoelectronics for cultural heritage
  - Optoelectronics in security applications

Université Paris Diderot

- **DOCTORAL SCHOOL:**
  Condensed Matter and interfaces
- **Master Recherche:**
  Dispositifs Quantiques
  Master Program
  NanoQuaD
- Laboratoire Matériaux et Phénomènes Quantiques (MPQ)

Université Paris Diderot

- **FUNDAMENTAL AND APPLIED RESEARCH:**
  - Fluids, granular media and acoustics
  - Interfaces of physics with biology and medicine
  - Quantum physics and nanosciences
  - Nanomaterials and self-ordering
  - Electronic properties at molecular scale
  - Quantum optics

Université de Nice-Sophia Antipolis
and
MINES ParisTech

- **Doctoral School in**

  Fundamental and Applied Science

- **Scientific Specialties**
  - Mathematics
  - Physics
  - Chemistry
  - Astrophysics
  - GeoSciences
  - Environment
  - Materials
  - Engineering

Université de Nice-Sophia Antipolis and MINES ParisTech

- **Involved groups:**
  - SELF-ORGANIZATION OF NANOSTRUCTURES AND STM (STM)
  - ADVANCED ELECTRON MICROSCOPY AND NANO-STRUCTURES (ME-ANS)
  - QUASI-PARTICULES SPECTROSCOPY (SQUAP)
  - MOLECULAR SCALE ELECTRONIC TRANSPORT (TELEM)
  - TRAPPED IONS AND QUANTUM INFORMATION (IPIQ)
  - NONLINEAR OPTICAL DEVICES (DON)
  - QUANTUM PHYSICS AND DEVICES (QUAD)
  - THEORY GROUP (THEORIE)
  - INLN - SEMICONDUCTOR LASER GROUP

Warsaw University of Technology

- **Faculty of Electronics and Information Technology**

Institute of Microelectronics and Optoelectronics

- **Microelectronic and Nanoelectronic Devices**
- **VLSI Engineering and Design**
- **Electronic Material Technology and Microsystems**
- **Optoelectronics**
- **Image and Microwave Photonics**

Warsaw University of Technology

- **Divisions in IMiO**
  - **Microelectronic and Nanoelectronic Devices Division**
  - **VLSI Engineering and Design Automations Division**
  - **Electronic Material Technology and Microsystems Division**
  - **Optoelectronics Division**
  - **Image and Microwave Photonics Division**

TELECOMUNICACIÓN

Campus Sur

EDEMOM implementation

Bilateral agreements

- Università Degli Studi “Roma Tre”