



INFORMATION AND COMMUNICATION TECHNOLOGIES

COORDINATION AND SUPPORT ACTION

EUROSOI+

European Platform for Low-Power Applications on Silicon-On-Insulator Technology

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D3.9 Catalogue of training lectures available at EUROSOI training school

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Table of contents

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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

1. Introduction	3
2. Catalogue of selected training lectures	5

1. Introduction

Training activities for young researchers are fundamental since they help to retain qualified young scientists and engineers within Europe, thus guaranteeing the man-power of tomorrow. For this reason, we want to create a durable training structure on SOI technology (from materials to end-user applications), whose main goal is to manage the training of European young researchers on SOI, with the development of different initiatives:

- i) Establish a EUROSÔI Distinguished Lecturers list.
- ii) Organization of short training events;
- iii) Organization of summer schools;
- iv) Editing and compiling specific application notes, or lectures;
- v) Inventory of the training resources already available on SOI in Europe;
- vi) Creation of a durable training organization (EUROSÔI School) capable of designing under request, specific training events/courses taking into account:
 - a. Different learning styles.
 - b. Different levels of expertise.
 - c. Time and flexibility.
 - d. Location.

The courses and schools are intended for PhD students and people working in the industry. Worldwide-known specialists were invited to lecture at the courses.

Our last goal is to consolidate this structure during the running of this project, so it goes on running after the end of the project as a durable outcome of it. The idea is becoming a reference training organization for European Industry, capable of design under request specific training events. At the end of the project, a catalogue of training activities will be published (this deliverable). This will collect a selection of lectures taught during the scheduled events. The selection is made by the MB taking into account participant opinion requested through a written inquiry after every training event.

In addition to the intended training events (already scheduled in this project) we are ready to organize (under request) itinerant events: Instead of having the school held in a particular city and the participants travelling to that city, the instructors (e.g. 4 of them) could travel to several key cities that are poles of electronics activity. The SOI classes could be given in 3-5 cities (e.g. Dresden, Grenoble, Brussels). If the concept is successful it could be extended to outside Europe (US, Japan). This would be an efficient way of educating local industry on SOI technology.

EUROSÔI network has directly organized or has participated in the organization of fifteen (13) short training courses so far:

- a) EUROSÔI 2005, Granada, Spain**
- b) EUROSÔI 2006, Grenoble, France**

- c) **EUROSUI 2007, Leuven, Belgium**
- d) **EUROSUI 2008, Cork, Ireland**
- e) **SOI for analog, digital and RF SOCs and Microsystems applications. May, 2008, IMEC Belgium**
- f) **First FDSOI tutorial of the Thematic Network on SOI technology, devices and circuits. November 2008, Grenoble, France**
- g) **EUROSUI 2009, Goteborg, Sweden**
- h) **MIGAS '09 - SOI concepts: from materials to devices and applications, June 2009, Autrans, France**
- i) **EUROSUI 2010, Grenoble, France**
- j) **NANOKISS 2010, April, 2010, Daegu, Korea**
- k) **SemOI, October 2010, Kiev, Ukraine**
- l) **Tutorial: "Silicon on Insulator: Materials to Circuit Design" September 2010, Seville, Spain**
- m) **EUROSUI 2011, Granada, Spain**

Most of these tutorials or training courses were already scheduled at the starting of the project. However, others have already been organized under request (two in Europe and other in Korea). In total, almost 100 lectures with Silicon-on-Insulator as topic have been taught during these 6 years of EUROSUI network. And life goes on: next tutorial will be organized during the eighth EUROSUI workshop to be held in Montpellier (France) from January 23rd, to January 25th, 2012 (<http://montpellier2012.eurosoi.org>).

The following catalogue collects a selection of the lectures taught in the different events. The lectures have been grouped by subjects. The slides used by the lecturers can be found in EUROSUI website: <http://www.eurosoi.org/tutorials.asp>

2. Catalogue of selected training lectures

Lecture	Lecturer	Affiliation	Topic
Smart-cut enabled materials	C.Colinge	Tyndall Institute, Ireland	SOI Materials
SOI substrate for RF applications?	E. Desbonnets	SOITEC, France	SOI Materials
Smart Cut(TM) and Beyond	Laurent Clavelier	CEA-LETI, France	SOI Materials
SOI Materials and Process	C. Girard	SOITEC, France	SOI Materials
SOI Materials Zoo (from SOS and ZMR to Unibond)	Hubert Moriceau	CEA-LETI, France	SOI Materials

Lecture	Lecturer	Affiliation	Topic
Electrical Characterization of SOI Nanodevices	G. Ghibaudo	IMEP, Grenoble, France	Devices. Characterization.
Advanced Techniques for Detailed Characterization of SOI Materials and Devices	S. Cristoloveanu	IMEP, Grenoble, France	Devices. Characterization.
Wideband characterization of SOI materials and devices	J.P. Raskin	UCL, Belgium	Devices. Characterization.
Multiple Gates and Strained Films for SOI MOSFETs: from Technology to Characterization and Applications	Anne Vandooren	Freescale Semiconductors, France	Devices. Characterization.

Lecture	Lecturer	Affiliation	Topic
SOI solutions for next technological nodes	S.Mantl	FZJuliech, Germany	Devices. Fabrication technology
ETSOI Technology	B.Doris	IBM, USA	Devices. Fabrication technology
Wafer Level 3D Integration: Overview of technologies	N. Sillon	CEA-LETI, France	Devices. Fabrication technology
Advanced SOI Technologies	Jan Hoentschel	GlobalFoundries, Dresden, Germany	Devices. Fabrication technology
FDSOI: Technology and Electrical Results	F. Andrieu	CEA-LETI, France	Devices. Fabrication technology
Multigate MOSFET technology	M. Jurczak	IMEC, Belgium	Devices. Fabrication technology

Lecture	Lecturer	Affiliation	Topic
Physics of SOI devices	J.P. Colinge	Tyndall Institute, Ireland	Devices. Physics
Power Devices on SOI	Piet Wessels	NXP, The Netherlands	Devices. Physics
Mechanisms in PDSOI and FDSOI devices	Olivier Faynot	CEA-LETI, France	Devices. Physics
Physics of the Multigate MOS System	B. Majkusiak	Warsaw University, Poland	Devices. Physics
Quantum Wire Effects in Trigate SOI MOSFETs	J.P. Colinge	Tyndall Institute, Ireland	Devices. Physics
Low-frequency Noise in SOI	E. Simoen	IMEC, Belgium	Devices. Physics
Trends in SOI technologies	O. Faynot	CEA-LETI, France	Devices. Physics

Lecture	Lecturer	Affiliation	Topic
SOI MOSFET compact models	B. Iñiguez	URV, Spain	Simulation and Modelling
Advanced Simulation of Silicon-on-Insulator devices	F. Gamiz	UGR, Spain	Simulation and Modelling
Advanced modeling and ultimate scaling of SOI devices	Thomas Ernst	CEA-LETI, France	Simulation and Modelling
Compact Modeling of Undoped FDSOI MOSFET	O. Rozeau	CEA-LETI, France	Simulation and Modelling
Modeling of Ultra Thin Body SOI nano-transistors	Luca Selmi	Udine University, Italy	Simulation and Modelling

Lecture	Lecturer	Affiliation	Topic
Memories on SOI	M. Jurzack	IMEC, Belgium	Adv. device concepts
SOI Photonics	J.M. Fedelli	CEA-LETI, France	Adv. device concepts
SOI based memories	B. de Salvo	CEA-LETI, France	Adv. device concepts
SOI MEMS/NEMS	David Elata	Technion, Israel	Adv. device concepts
Nonclassical Tunneling-Based Devices for SOI Nanoelectronics	A. Zaslavsky	Brown University, USA	Adv. device concepts
Ultimately thin Carbon on Insulator: Graphene	Max C. Lemme	Harvard University, USA	Adv. device concepts
From MEMS to embedded NEMS	Julien Arcamone	CEA-LETI, France	Adv. device concepts
FDSOI Devices: Physics and Characterization	S. Cristoloveanu	IMEP, Grenoble, France	Adv. device concepts
Mobility in Multigate MOSFETs	Francisco Gámiz	UGR, Spain	Adv. device concepts

Lecture	Lecturer	Affiliation	Topic
Statistical Variability: SOI vs Bulk MOSFETs	A. Asenov	University of Glasgow, UK	Reliability and variability of SOI devices and circuits
Radiation effects and reliability issues in SOI technologies	Ron Schrimpf	Vanderbilt University, USA	Reliability and variability of SOI devices and circuits

Lecture	Lecturer	Affiliation	Topic
SOI Low-power applications	N.Sugii	LEAP, Japan	SOI circuits design
SOI design: RF applications	J.P.Raskin	UCL, Belgium	SOI circuits design
SOI design: logic circuits	P.Flatresse	STMicroelectronics, France	SOI circuits design
Digital SOI design in the nanometer era - From high-performance to ultra-low-power circuits	David Bol	UCL, Belgium	SOI circuits design
SOI circuits: Do you want Partially Depleted or Fully Depleted Devices?	J.P. Colinge	Tyndall Institute, Ireland	SOI circuits design
SOI technology: an opportunity for RF designers?	Jean-Pierre Raskin	UCL, Belgium	SOI circuits design
FDSOI Circuit Design	Alexandre Valentian	CEA-LETI, France	SOI circuits design
Multi-Gate MOSFET Circuit Design	G. Knoblinger	Infineon Technologies, Austria	SOI circuits design
Non-CMOS Applications for SOI	Neil Mitchell	Queen's University, Belfast, UK	SOI circuits design
Designing Around SOI	Bill Redman-White	University of Southampton, UK	SOI circuits design

Lecture	Lecturer	Affiliation	Topic
Analog SOI CMOS devices : figures of merit, design techniques and applications	D.Flandre	UCL, Belgium	End-user and Industrial applications
SOI CMOS Technology and Communication Circuit Applications	J.O. Plouchart	IBM, USA	End-user and Industrial applications
SOI for High temperature Electronics: from Technology to Circuit Applications	Pierre Delatte	CISSOID, Belgium	End-user and Industrial applications
Industrial SOI Technologies & Applications	Piet Wessels	Philips, The Netherlands	End-user and Industrial applications
SOI market and applications	Pierre Delatte	CISSOID, Belgium	End-user and Industrial applications
Partially Depleted SOI design for low power applications	Philippe Flatresse	STMicroelectronics, France	End-user and Industrial applications
SOI Microprocessors	Ghavam Shahidi	IBM, USA	End-user and Industrial applications