WP3 & WP4 Domain-Workshops during the SINANO Summer School 2016

2016/06/16

During the SINANO Summer School 2015 a series of NEREID Domain Workshops regarding the workpackages 3 and 4 took place on October 16-21, 2016, in Bertinoro (FC), Italy.

The topics were:
“Nanoscale FETs”, “Connectivity”,
“Smart Sensors”, “Smart Energy” and “Energy for Autonomous Systems”

Schedule:

Sunday 16 October 2016, 18:00: Reception
Monday to Friday 17-21, 2016:
Workshops from 9:00-18:00
(16:15 – 18:00 ONLY for NEREID experts and members)

Location
Bertinoro,
Forlì-Cesena (FC),
Italy

Programme

Day 0: October 16 2016, RECEPTION and WELCOME BUFFET
18:00
RECEPTION and WELCOME BUFFET

Day 1: Monday, October 17 2016,
NEREID Workshop 1 – Task 3.1 “Nanoscale FETs”

Organizer: Francis Balestra (Grenoble INP, FR), Anda Mocuta (IMEC, BE)

Chairman: Francis Balestra – Grenoble INP, FR
Stephane Monfray - IMEC (BE)
Evolution or revolution in the world of Microelectronic?
Changing times

Maaike Op de Beeck - IMEC (BE)
Medical electronics for wearable and implantable devices: system and chip requirements

Gerard Ghibaudo - IMEP-LAHC, Grenoble INP (FR)
Challenges in electrical characterization of nano devices
10:30-10:45  Coffee break

10:45-11:15  Anda Mocuta - IMEC (BE)
Transistor Architecture and materials

11:15-12:00  Francis Balestra - Grenoble INP (FR)
Tunnel FETs trends and challenges  (Slides [1])

12:00-13:30  Lunch break

13:30-14:00  Carlo Cagli - CEA-LETI (FR)
State of the art and future challenges of memory technology

14:00-14:30  Luca Selmi - IUNET-Udine (IT)
Modeling and simulation challenges for integrated nanoscale CMOS switches and CMOS compatible nanosensors

14:30-14:45  Coffee break

14:50-15:30  Claire Fenouillet-Beranger - CEA-LETI (FR)
3D Sequential integration challenges

15:30-16:10  Lars-Erik Wernersson - Lund University
III-V nanowires, for digital and RF/mm Wave applications

16:15-18:00  (ONLY for NEREID experts and members)

Day 2: Tuesday, October 18 2016,
NEREID Workshop 2 – Task 3.2 “Connectivity”

Organizer:
Jean-Baptiste David/ Didier Belot (CEA-LETI, FR),
Anda Mocuta (IMEC, BE)
Day 3: Wednesday, October 19 2016,
NEREID Workshop 3 – Task 4.2 “Energy for Autonomous Systems”

Organizer:
Gustavo Ardila (Grenoble INP, FR) / Alan Mathewson (Tyndall, IR),
David Holden (CEA LETI, FR)

Chairmen:  Gustavo Ardila - GINP France and
Alan Matewson - Tyndall Ireland

(Free attendance for SINANO/MIGAS students)

13:15 – 13:30
Badge registration

13:30 – 13:40
Opening of the Workshop (Gustavo Ardila)

13:40 – 14:30
Stephane Monfray – STMicroelectronics,
“Innovative thermal energy harvesting for future autonomous applications”
14:30 – 15:20
Anne Kaminski-Cachopo – Grenoble INP, “Solar cells for energy harvesting” (Slides)

15:20 – 15:40
Break

15:40 – 16:30
Gustavo Ardila – Grenoble INP/Grenoble Alpes University, “Mechanical energy harvesting using piezoelectric materials”

16:30 – 17:20
Aldo Romani – University of Bologna, “Energy Management” (Slides)

17:20 – 17:30
Break

17:30 – 19:00
Discussion for road-mapping (ONLY for NEREID experts and members)

20.00
Dinner

Day 4: Thursday, October 20, 2016,
NEREID Workshop 4 – Task 4.2 “Smart Energy”

Organizer: Gaudenzio Meneghesso (IUNET, IT), David Holden (CEA-LETI, FR)

08:30 – 09:00
Badge registration

09:00 – 09:10
Gaudenzio Meneghesso, University of Padova, “Opening of the Workshop” (Slides)

Plenary Session 1

Mikael Östling, KTH, Royal Institute of Technology
“SiC power switch device status and predictions” (Slides)

Peter Moens, ON Semiconductor Belgium
“Status and outlook of GaN power devices from an industry perspective” (Slides)

Giuseppe Croce, STMicroelectronics
“Smart Power Technology Roadmap and Trends” (Slides)

Thomas Detzel, Infineon, Germany
“GaN in a Silicon world: Competition or Coexistence?”

10:30 – 11:00
Break
Plenary Session 2

Joff Derluyn, EPIGAN, “GaN from the epitaxy perspective” (Slides [8])

Steve Stoffels, IMEC
“Outlook for 200mm E-mode device technology” (Slides [9])

Anton Bauer, Fraunhofer IISB
“Potential of SiC for Automotive Power Electronics” (Slides [10])

Thomas Harder, ECPE European Center for Power Electronics, “WBG System Integration” (Slides [11])

Braham Ferreira, TU Delft
“International Technology Roadmap for Wide Band-gap Power Semiconductor ITRW” (Slides [12])

12:40 – 14:00
Lunch

14:00 – 17:30
Discussion for road-mapping
ONLY for NEREID experts and members
Coffee break during the discussion

20:00
Dinner (official Speaker dinner is on Oct. 19 evening)

Day 5: Friday, October 21, 2016,
NEREID Workshop 5 – Task 4.1 “Smart Sensors”

Organizer: Montserrat Fernandez-Bolanos – EPFL Switzerland

Chairman: Adrian Ionescu – EPFL Switzerland

8:30 - 9:00
Badge registration

9:00 - 9:05
Introduction and open of the workshop

9:05 - 9:45
Cosmin Roman (ETH Zürich, CH)
“Energy-efficient sensors based on carbon”

9:45 - 10:25
Denis Flandre (UCL, BE) “High-Temperature SOI CMOS devices, sensors and mixed-signal read-out circuits: Status and Roadmap”

10:25 - 10:40
Coffee break

10:40 - 11:20
Maaike Taklo (SINTEF, NO) “IR and MEMS sensors” (Slides [13])
11:20 - 12:00  Teodor Gotszalk (University of Wroclaw, PL) “MEMS and NEMS sensors in mass change and force metrology”

12:00 - 13:00  Lunch break

13:00 - 13:40  Frans Widdershoven (NXP semiconductors, NL) CMOS Pixelated Capacitive Sensor platform for biosensing and many other applications  (Slides [14])


13:55 - 14:20  Walter De Raedt (IMEC, BE)  “Wearable and IoT sensors enabling health applications”

14:20 - 14:30  Coffee break

14:30 - 15:10  Florin Udrea (University of Cambridge, UK)  “The next generation of smart gas sensors”

15:10 - 15:30  Adrian Ionescu and Montserrat F.-Bolaños (EPFL, Switzerland)

15:30 - 16:00  Break

16:00 - 18:00  Smart Sensor Roadmapping discussion chaired by Cosmin Roman (ETH) and Montserrat F.-Bolaños (EPFL)

(17:45 – 19:00 ONLY for NEREID experts and members)

Organization & Committee

Summer School Organizers and Chairmen

- Susanna Reggiani, ARCES University of Bologna & IUNET, Italy
- Laurent Montes, GINP, Grenoble, France

Steering Committee

- Francis Balestra, IMEP – INPG, Grenoble, France
- Enrico Sangiorgi, ARCES University of Bologna & IUNET, Italy

Local Organizing Committee
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