

MINATEC Upstream Research
June 23 & 24
-Program-



nanoSCIENCES
FONDATION



Wednesday, June 23

1:30 p.m. Registration

Advances in single dopant and single electron effects in silicon nanodevices

- 2:00 p.m. **Introduction**
Marc Sanquer - CEA
- 2:05 p.m. **Single dopant transport spectroscopy in Silicon**
Pr. Sven Rogge - TU Delft, the Netherlands
- 2:45 p.m. **Single magnetic dopant in quantum dots**
Dr. Lucien Besombes – Researcher, CNRS-Institut Néel, France
- 3:25 p.m. **Single dopant modelization in nanowires**
Dr. Yann-Michel Niquet – Researcher, CEA/ INAC, France
- 4:05 p.m. Coffee break
- 4:25 p.m. **MOS-SETs**
Dr. Xavier Jehl – Researcher, CEA/INAC, France
- 5:05 p.m. **Semiconductor Structures for Quantum Information**
Dr. David Williams – Researcher, Hitachi Cambridge Lab., United Kingdom

Thursday, June 24

8:00 a.m. Registration

8:40 a.m. **Welcome**
Paul Jacquet – General Administrator, Grenoble Institute of Technology, France

Nanoelectronics 1: New materials and nanostructures

Chair: Céline Ternon, G-INP

9:00 a.m. **Engineering Nanostructures for Nanoelectronic Logic Switches and Memories**
H.-S. Philip Wong – Stanford University, United-States

9:30 a.m. **Growth and self assembly of nanostructures**
Thierry Baron – CNRS, France

9:50 a.m. **The Transmission Electron Microscope : a tool for quantification and mapping of physical properties of nanoobjets.**
Pascale Bayle-Guillemaud – CEA, France

10:10 a.m. **Epitaxial graphene, a new material for electronics**
Claire Berger – CNRS, France

10:30 a.m. Coffee break

Nanoelectronics 2: From ultimate CMOS to beyond CMOS devices

Chair: Mireille Mouis, CNRS

11:00 a.m. **European research roadmap for nanoelectronics**
Francis Balestra - CNRS, France

11:30 a.m. **Development and perspectives of nanoimprint lithographies**
Cécile Gourgon –CNRS, France

11:50 a.m. **Plasma etching processes for nanoCMOS and nanoelectronic devices**
Erwine Pargon –CNRS, France

12:10 p.m. **Quantum transport simulation in nanostructures**
Marco Pala – CNRS, France

12:30 p.m. Lunch

Spintronics

Chair: Bernard Dieny, CEA

- 2:00 p.m. **Recent breakthroughs in advanced spintronics**
Claude Chappert – CNRS, France
- 2:30 p.m. **Non-collinear spin transport in layered structures and bulk materials for spintronics**
Mairbeck Chshiev – Fondation Nanosciences, France
- 2:50 p.m. **From Molecular Electronics towards Molecular Spintronics**
Vincent Bouchiat – CNRS, France
- 3:10 p.m. **MRAM, from the lab to the fab ... to the lab**
Jean-Pierre NOZIERES – Crocus Technology, France
- 3:30 p.m. Coffee break

Nanotechnologies for biological objects

Chair: Franz Bruckert, G-INP

- 4:00 p.m. **Probing nanoscale variations of extracellular ligands during cell adhesion and migration**
Ada Cavalcanti-Adam – University of Heidelberg, Germany
- 4:30 p.m. **Layer-by-layer films with controlled mechanical and biochemical properties : perspectives in drug delivery and tissue engineering**
Catherine Picart – Grenoble Institute of Technology, France
- 4:50 p.m. **Nanobiodroplet chip for controlled assembly of lipid bilayers and detection of single-protein activity**
Benjamin Cross – UJF, France
- 5:10 p.m. **Structured biomolecular assemblies for the development of biological sensors**
Serge Cosnier – Research Director, CNRS, France
- 5:30 p.m. **Coupling chemistry and optics for non-adherent cell recognition**
Thierry Livache – Chief of SPrAM/CREAB, CEA, France
- 5:50 p.m. Closing