

Advanced functional materials

Raimu 1 room

From fabrication to applications (photonics, sensors...)

Wednesday, December 12 - 15:30 - 18:00

Coffee break 16:20 - 16:40

| | | |
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| 15:30 | Bernhard URBASZEK · LPCNO · Keynote · | <i>Optical and Spin-valley properties of atomically thin semiconductors</i> |
| 16:00 | Matthias PAULY · ICS | <i>Anisotropic optical and electronic properties of oriented self-assembled thin films of 1-D metallic nanoparticles</i> |
| 16:40 | Beniamino SCIACCA · TNO | <i>Self-assembled monocrystalline patterned nanomaterials</i> |
| 17:00 | Nathalie DESTOUCHES · LHC | <i>Increased heating of metallic nanoparticles for lower deposited light energy: measurement and explanation of a counter-intuitive behavior</i> |
| 17:20 | Laurent COOLEN · INSP | <i>Analysis of the fluorescence dipole structure for single CdSe/CdS nanoplatelets</i> |
| 17:40 | Remi DREYFUS · COMPASS | <i>Microsensing with plasmonic-based mechanochromic microparticles</i> |

Nanobiology

Raimu 2 room

Sensors

Tuesday, December 11 - 11:15 - 13:05

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|-------|--|---|
| 11:15 | Niko HILDEBRANDT · I2BC · Keynote · | <i>Nanoparticles and nanointeractions: a beautiful couple for multiplexed fret biosensing</i> |
| 11:45 | Elise Y. GAYET · Langevin Institute | <i>Colorimetric monitoring of DNA origami conformations with gold particles</i> |
| 12:05 | Mathias DOLCI · IEMN | <i>Magneto-Optical Surface Plasmon Resonance Architecture for Cardiac Troponin Detection</i> |
| 12:25 | Nina MELNYCHUK · LBP | <i>Fluorescent organic nanoantennas for ultrasensitive detection of nucleic acid cancer markers</i> |
| 12:45 | Nathalie LIDGI-GUIGUI · CSPBAT | <i>A hybrid SERS-MIP sensor for paracetamol detection</i> |

Biomaterials

Wednesday, December 12 - 15:30 - 18:00

Coffee break 16:20 - 16:40

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|-------|--|---|
| 15:30 | Fouzia BOULMEDAIS · ICS · Keynote · | <i>Polymer nano coatings: from inert to functional biomaterials</i> |
| 16:00 | Nesrine AISSAOUI · CBS | <i>Designing and Programming three-dimensional DNA nanostructures</i> |
| 16:40 | Remi MERINDOL · CRPP | <i>SEIRA detection of benzene at ppb levels mediated by resonant nanoantennas</i> |
| 17:00 | Manon DEBAYLE · LPEM | <i>Macroscopic mechanofluorescent DNA hydrogels.</i> |
| 17:20 | Christine CONTINO-PEPIN · IBMM | <i>Stable perfluorocarbon nanoformulations for theranostic applications</i> |
| 17:40 | Volodymyr MALYTSKYI · ICMR | <i>Nanohydrogels-Based Hypersensitive MRI Probes: Synthesis and Functionalization</i> |

Oral presentations

Thursday, December 13 - 9:45 - 12:00

9:45 **Julien BACHMAN · CTFM • Keynote •**

10:15 Martiane CABIE · FSCM

10:55 Olga SHAVDINA · GREMI

11:15 Marco FAUSTINI · LCMCP

11:35 Didier PRIBAT · LPICM

Coffee break 10:35 - 10:55

Atomic layer deposition: from method development to geometrically engineered nanomaterials and functional interfaces - then vice versa

Drawing optical fibers: a top-down approach to shape oxide nanoparticles

Inkjet-printed aluminum-doped zinc oxide nanostructures

Self-Assembling Cracks in Nanoparticles Films: How to Turn a Drawback into Functionalities

A novel random connection principle for wire-based solar cells: NiSix nanowires.

Biotechnology

Tuesday, December 11 - 15:45 - 18:00

15:45 **Zoher GUEROUI · P.A.S.T.E.U.R. • Keynote •**

16:15 Jong-Wook KIM · LPMC

16:35 Anne RUNSER · LBP

17:15 Thomas PONS · LPEM

17:35 Geoffrey COTIN · IPCMS

Coffee break 16:55 - 17:15

Genetically encoded nanoparticles for the spatial manipulation of biomolecules

Anisotropic nanocrystals shed light on the complex dynamics of micro-organisms and fluids

Protein-sized and Ultrabright Dye-loaded Polymer Nanoparticles for Intracellular Imaging

Time-gated fluorescence in vivo imaging and sensing using long lifetime near infrared quantum dots

Mastering active targeting, theranostic properties, alleviating unspecific cellular uptake and tailoring in vivo fate of USPIOs through a dendritic coating

Biotechnology

Thursday, December 13 - 9:45 - 12:05

9:45 Clément GOUBAULT · ISCR

10:15 Stéphane MORNET · ICMCB

10:55 Damien MERTZ · IPCMS

11:15 Mathieu CIANCONE · ISCR

11:35 Julien BOUDON · ICB

11:45 Nicolas TAULIER · LIB

Coffee break 10:35 - 10:55

Hybridosomes : Innovative Multifunctional Nanocapsules

Surface engineering of intravenously administered hybrid nanoparticles to improve tumoral accumulation by passive and active targeting

Hybrid magnetic protein nanocomposites for drug delivery and imaging

Photothermal properties of Metal-bis(dithiolene) complexes: a multipotent tool for photothermal therapy, photocontrolled drug delivery and photoacoustic imaging

Titanate nanotubes nanohybrids: radiosensitizers for cancer treatment

Fluorinated nanodroplets for therapeutic approaches using focused ultrasound

Nanoelectronics, nanomagnetism & spintronics

Puget room

Nanomagnetism & spintronics

Tuesday, December 11 - 11:15 - 13:05

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|-------|--|---|
| 11:15 | Olivier FRUCHART · SPINTEC • Keynote • | <i>Opportunities and challenges for nanomagnetism and spintronics</i> |
| 11:45 | Victor HASPOT · UMR CNRS/ Thales | <i>Towards Spin-Orbitronics integrating perovskite oxides</i> |
| 12:05 | Fouad MAROUN · LPMC | <i>Electric field effect on domain wall motion in Co ultrathin films in direct contact with an electrolyte: comparison between different substrates</i> |
| 12:25 | Marta GALBIATI · UMR CNRS/ Thales | <i>Spin valves with exfoliated 2D materials: MoS₂</i> |

Thursday, December 13 - 9:45 - 12:00

Coffee break 10:35 - 10:55

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|-------|-----------------------------------|---|
| 9:45 | Jean-François DAYEN · IPCMS | <i>Anisotropic magneto-Coulomb properties of 2D-0D nanospintronic devices.</i> |
| 10:15 | Ingrid Marie ANDERSEN · CEMES | <i>Magnetic configurations in complex magnetic nanowires studied by off axis electron holography</i> |
| 10:55 | Véronique DUPUIS · ILM | <i>Size and Interface Effects on Magnetism of chemically ordered FeRh clusters prepared by MS-LECBD</i> |
| 11:15 | Benoit QUINARD · UMR CNRS/ Thales | <i>Spin-dependent transport in aromatic self-assembled monolayers</i> |
| 11:35 | Victor ZATKO · UMR CNRS/ Thales | <i>Introducing CVD WS₂ in Magnetic Tunnel Junctions</i> |

Nanomaterials

Colbert room

Nanochemistry, synthesis & assembly

Tuesday, December 11 - 11:15 - 13:05

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|-------|---|---|
| 11:15 | Stéphane CORDIER · ISCR • Keynote • | <i>Metal atom cluster building blocks from the solid state to the design of functional surfaces and hybrids</i> |
| 11:45 | Lorraine HAIM · LCC | <i>Synthesis of zero valent FeNPs with anisotropic morphology</i> |
| 12:05 | Sophie CARENCO · LCMCP | <i>Iron, Nickel and Copper Phosphidation: Crystallization of Metal Phosphides and Phase Speciation at the Nanoscale</i> |
| 12:25 | Jason RICHARD · ICGM | <i>Mesoporous silica nanoparticles: an innovative method for controlling pore structure and particle size</i> |
| 12:45 | Jose PENEULAS · INL | <i>Hybrid core - shell nanowires grown by molecular beam epitaxy</i> |

Thursday, December 13 - 9:45 - 12:05

Coffee break 10:35 - 10:55

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|-------|------------------------------------|---|
| 9:45 | Mona TREGUER DELAPIERRE · ICMCB | <i>Engineering novel plasmonic nanostructures</i> |
| 10:05 | Annette DELICES · SYMMES | <i>Chemical Functionalization and Self-Assembly to Form Hybrid Structures of Nanoparticles</i> |
| 10:25 | Houssein Olivier NASRALLAH · ICMUB | <i>Diamondoid Scaffolds for Gold-Based Organohybrid Networks: Design and Catalytic Application</i> |
| 11:05 | Ségolène PALUSSIÈRE · LAAS | <i>Influence of CuO nanoparticles and their chemical environment into assembly of Al/CuO nanothermites</i> |
| 11:25 | Jean-Pierre SIMONATO · LITEN | <i>Silver Nanowire Networks for Transparent Film Heaters: Synthesis, Nanoscale Characterization and Integration in Functional Devices</i> |
| 11:45 | Xiaojiao YUAN · LCP | <i>Conducting polymer nanostructures for photocatalytic degradation of phenol and hydrogen generation</i> |

Oral presentations

Nanoelectronics

Tuesday, December 11 - 15:45 - 18:05

15:45 **Dominique VUILLAUME · IEMN · Keynote ·**

Coffee break 16:55 - 17:15

16:15 Jean-Manuel RAIMUNDO · CINaM

Olecular nanostructures in a nanoelectronics perspective

16:35 Vivek Pratap HITAIISHI · BIP

Ultrathin supported lipids monolayer onto P3HT with unprecedented mechanical and dielectric properties

17:15 Sébastien SANAUR · CMP

Enzymatic electrocatalysis: From functional Orientation of redox enzymes on Carbon Nanotubes to dynamic behavior on Self-Assembled-Monolayers

17:35 Fabienne MICHELINI · IM2NP

Top-down fabrication of micro & nanostructured conducting polymers: advantageous platform to interface with the Living world.

17:45 **Nicolas BERGEAL · ESPCI · Keynote ·**

Time-dependent energy dynamics in molecular circuits

Two-dimensional electron gas at LaAlO₃/SrTiO₃ interfaces

Nanophysics & nanochemistry on surfaces

Tuesday, December 11 - 15:45 - 18:00

15:45 **Laurence MASSON · CINaM · Keynote ·**

Coffee break 16:55 - 17:15

16:15 Christophe BICHARA · CINaM

Surface templated growth of nanostructures

16:35 David MARTROU · CEMES

Growth modes and chiral selectivity of Single-Walled Carbon Nanotubes

17:15 Andres LOMBANA · IM2NP

Controlling the electric charge of gold nanoplatelets on an insulator by field emission nc-AFM

17:35 Gauthier ROUBAUD · Langevin Institute

On-surface Synthesis of Molecular Nanowires

Far-field wavefront optimization of the optical near-field in nanoscale disordered plasmonic metasurfaces

Advanced characterization

Wednesday, December 12 - 15:30 - 18:00

15:30 **Thierry EPICIER · MATEIS · Keynote ·**

Coffee break 16:20 - 16:40

16:00 Laura ELLEZAM · LCMCP

Nanomaterials 'alive' under gas in the Environmental Transmission Electron Microscope (ETEM)

16:40 Xavier DEVAUX · IJL

Ruthenium based multimetallic nanoparticles : how to probe the local structure ?

17:00 Bénédicte WAROT-FONROSE · LAAS

Cationic ordering in Ga₂-xFexO : atomic scale characterisation of the polarisation walls

17:20 Maxime DUCHET · ILM

Temperature dependent transition in MnAs : EMCD and electron holography in-situ studies

17:40 Isabelle MAURIN · LPMC

Field Emission Spectroscopy of a nanodot at the Femtosecond Scale

Strain engineering of photo-induced phase transformations in Prussian blue analogue heterostructures

Nanometrology & 2D materials

Dumont D'Urville room

Thursday, December 13 - 9:45 - 12:05

Coffee break 10:35 - 10:55

| | | |
|-------|---|---|
| 09:45 | Alain PENICAUD · CRPP · Keynote • | <i>Graphene and other carbon nanoforms for a sustainable world</i> |
| 10:15 | Marc CHAIGNEAU · Horiba Scientific | <i>Nanoscale Topographical, Chemical and Electronic Mapping of Carboxyl Graphene Oxide using TERS</i> |
| 10:35 | Jerome LAGOUE · MPQ | <i>Electronic interaction between organic molecules and nitrogen doped graphene</i> |
| 11:55 | Mathieu PAILLET · L2C · Keynote • | <i>Counting graphene layers: from lab to standard</i> |
| 11:25 | Aur lie PIERRET · LPA | <i>Ultra-clean single carbon nanotubes for intergration in electronic circuits</i> |
| 11:45 | Pierre BRUS · Thales Research Technology | <i>Stabilizing 2D platforms toward discrete components</i> |

Nanophotonics

Raimu 1 room

Nano-optics, nanophotonics & plasmonics

Tuesday, December 11 - 11:15 - 13:05

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|-------|---|--|
| 11:15 | Philippe LALANNE · LP2N · Keynote • | <i>Diffraction de la lumi re par les nanor sonateurs</i> |
| 11:45 | R mi COLOM · Fresnel Institute | <i>Modal analysis of Light-scattering by Mie resonators</i> |
| 12:05 | Bruno GALLAS · INSP | <i>Circularly polarized images concealed in pseudo-chiral metasurfaces</i> |
| 12:25 | Florent BABOUX · MPQ | <i>Controlling frequency correlations and biphoton statistics in a semiconductor photonic chip</i> |
| 12:45 | Gilles RENVERSEZ · Institute Fresnel | <i>Experimental proof and modelling of plasmon-soliton coupling and propagation in a nonlinear plasmonic structure</i> |

Start up special session

Puget room

Entrepreneurial experience: discussion with Val rian GIESZ, CEO and co-founder of Quandela.

Wednesday, December 12 - 15:30 - 16:30



quandela.com

contact@quandela.com

Oral presentations

Safer by design *Dumont D'Urville room*

Environmental applications & implications, Nanotoxicology, Safer by design

Tuesday, December 11 - 15:45 - 18:00

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|-------|--|---|
| 15:45 | Laurent CHARLET · ISTERRE · Keynote · | The silver nanowire based products fast development in a Safer by Design philosophy |
| 16:15 | Oulfat AMIN ALI · LEMIRE | <i>Impact of a cocktail of nanomaterials on the operation of wastewater treatment plant and the valorization of biosolids</i> |
| 16:35 | Richard CLERGEREAUX · LAPLACE | <i>Reactor-injector of nanoparticles coupled with plasma processes: A safer method for the deposition of nanocomposite thin films</i> |
| 16:00 | Danielle SLOMBERG · CEREGE | <i>Implications for sunscreen eco-design: Fate and toxicity of nanoparticulate TiO₂ UV-filters throughout sunscreen life-cycle</i> |
| 16:20 | Vincent BARTOLOMEI · CEREGE | <i>SafeTiPaint: Toward a safer by design approach of photocatalytic paint to improve air quality</i> |
| 16:40 | Xiaomin YANG · ISMO | <i>Toxicity evaluation of platinum nanoparticles on proteins using Synchrotron Radiation Circular Dichroism</i> |

Coffee break 16:55 - 17:15

Tuesday, December 11 - 15:45 - 18:00

| | | |
|-------|--|--|
| 15:45 | Emmanuel LHUILLIER · INSP · Keynote · | <i>Infrared optoelectronics using colloidal nanocrystals</i> |
| 16:15 | Clément MILLET · C2N | <i>Deterministic assembly of an electrically-tuned spin-photon interface based on a semiconductor quantum dot</i> |
| 16:35 | Claire LI · Langevin Institute | <i>Thermal radiation of individual and coupled nanoantennas</i> |
| 17:15 | Thomas NOBLET · LCP | <i>Semiconductor quantum dots reveal dipolar coupling from exciton to ligand vibration through unconventional nonlinear optics</i> |
| 17:35 | Ali JAFFAL · INL | <i>InAs/InP quantum dot-nanowire single photon sources in the telecom band grown monolithically on silicon substrates</i> |

Coffee break 16:55 - 17:15