

SCIENTIFIC PROGRAM

DECEMBER 9, 2014

13h15 Registration

14h00 Opening session by the President of the University, **P. Mutzenhardt** and the Dean **F. Paulus****Nathalie MIGNET** (SFNano President), **Didier Rouxel** (NanoSMS Coordinator)**SYNTHESIS AND CHARACTERISATION OF NANOMATERIALS FOR HEALTH**Chairpersons: *Y. Fort, D. Rouxel*14h30 *Magnetic nanoparticles and magnetic hybrid systems for health***Christine Ménager**, UMR PHENIX, Paris, France15h00 *Dendronized magnetic iron oxide nanoparticles designed for targeting, MRI and hyperthermia***Sylvie Begin-Colin**, Institute of Physics and Chemistry of Materials, University of Strasbourg, France15h30 *Size and surface coating control the reactive oxygen species (ROS) production from ZnO quantum dots***Raphaël Schneider**, LRGP (ENSIC), Lorraine University, Nancy, France15h45 *Nanomaterials characterization for nano-enabled medicine***Jean-Sébastien Thomann & Damien Lenoble**, Gabriel Lippman Center, Belvaux, Luxembourg16h00 **Coffee break**16h30 **Sponsor presentations presented by Didier Betbeder, SFNano**Nicolas Gozalez, **Schaefer Techniques**Serge Réteaud, **Beckman Coulter**Michel Terray, **Malvern Instruments**Camille Roesch, **Izon**, *Advanced Nano and Micro particle characterisation with Tunable Resistive Pulse Sensing*Eric Michel, **Idex**Speaker to be announced, **Horiba**17h30 *Structure and dynamics of confined nanodrugs. A joint NMR and total X-ray scattering study*A. Gansmüller, El-E. Bendeif, K. Hsieh, S. Pillet, P. Durand, D. Schaniel, T. Woike17h45 *Multifunctional gold nanoshell@mesoporous silica assemblies designed for nanomedicine: synthesis and characterization*S. Soulé, J. Allouche, J-C. Dupin, W-S.Ojo, C. Nayral, F. Delpech, H. Martinez18h00 *Quantum dot – rare earth complex conjugates for biological imaging and detection***Peter Reiss**, CEA Grenoble, France19h00 **Welcoming Cocktail at the Nancy City Hall**

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MICRO AND NANOSYSTEMS FOR HEALTH

Chairpersons: C. Fournier-Wirth, F. Sarry

- 9h00 *State of the Art of Nanotechnology for Biosensors*
Nicole Jaffrezic-Renault, Institute of Analytical Sciences, Villeurbanne, France
- 9h30 *A bioelectronic sensor for electrical monitoring of diabetic patients insulin need*
Sylvie Renaud, IMS Laboratory (Integration, Material to System), Bordeaux Univ., France
- 10h00 *Study of thermal effect between Rayleigh SAW and micro droplet: Toward DNA Duplication*
Denis Beysen, Jean Lamour Institute, Lorraine University, France
- 10h15 *Microfluidic device for single-cell analysis using impedance spectroscopy*
Julien Claudel, Laboratoire d'Instrumentation Electronique de Nancy, Nancy, France
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- 10h30 **Coffee break & Poster session**
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- 11h00 *Design, properties and in vivo behaviour of superparamagnetic persistent luminescence nanohybrids*
E. Teston, Y. Lalatonne, L. Motte, F. Gazeau, D. Elgrabli, O. Clément, G. Autret, T. Maldiney, D. Scherman, C. Richard
- 11h15 *Glycopolypeptide based-nanocarriers targeting CD44 for non-small cell lung cancer therapy*
V. Jeannot, S. Mazzaferro, J. Lavaud, V. Jossierand, M. Henry, C. Schatz, S. Lecommandoux, A. Hurbin, JL Coll,
- 11h30 *Self-assembly of DNA origami into 3D shapes for structural biology*
G. Bellot
- 11h45 *Nanomedicine in France and Europe*
Patrick Boisseau, Chairman of ETPN, France
- 12h15 **General Assembly of SFNano**
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- 12h30 **POSTER SESSION & LUNCH BREAK**
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NANOTECHNOLOGIES FOR DIAGNOSIS

Chairpersons: N. Jaffrezic-Renault, S. Renaud

- 14h00 *Perspectives of nanoparticles for in vitro diagnostic*
Chantal Fournier-Wirth, Etablissement Français du Sang, Montpellier, France
- 14h30 *Reactive oxygen species sensing and MRI imaging using multifunctional rare-earth based nanoparticles*
Antigoni Alexandrou, Optic and Biosciences Laboratory, Ecole Polytechnique, Palaiseau, France
- 15h00 *Second Harmonic Generation with KTiOPO₄ nanoprobos*
Thierry Gacoin, Laboratoire de Physique de la Matière Condensée, Palaiseau, France
- 15h15 *On chip magnetic nanobead detection and manipulation for diagnosis*
François Montaigne, Jean Lamour Institute, Lorraine University, Vandoeuvre-lès-Nancy, France
- 15h30 **Industrial point of view**: Round table led by Nicole Jaffrezic and Chantal Fournier-Wirth
Ismaël Didelon, SD MEDICAL: *Microsystèmes biomédicaux*
Dr Patrice Sarfati, BIORAD- R&D Manager Infectious Disease Division- Site de Marnes la Coquette, France
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- 16h15 **Coffee Break & Poster session**
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- Chairpersons: L. Sancey, C. Richard
- 17h00 *Targeted nanotherapy of endocrine tumors using magnetic iron oxide nanoparticles and high frequency magnetic field.*
V. Gigoux
- 17h15 *Controlled USPIO size towards T1 or T2 MRI contrast agent*
Y. Lalatonne, M. Boucher, J. Bolley, S. Meriaux, N. Pinna, L. Motte
- 17h30 *Nanotechnologies : Societal impact, hopes and fears*
Didier Rouxel, Jean Lamour Institute –Lorraine University, Vandoeuvre-lès-Nancy, France
- 17h50 **Interactive** discussion led by Y. Fort
J. Alnot, S. Lacour: Human and social science, **E. Gaffet**- Responsible Development of Nanotechnology
- 19h00 **Cocktail and Villa Bergeret visits**

NANOMEDICINES AND INFLAMMATION

Chairpersons: P. Maincent, D. Betbeder

- 9h00 *Applications of nanotechnologies in inflammatory bowel diseases*
Pierre Desreumaux, University of Lille 2 – Faculty of Medicine, France
- 9h30 *Nanomedicines for targeted drug delivery to the inflamed intestinal mucosa*
Claus Michael Lehr, Biopharmaceutics and Pharmaceutical Technology, Saarbrücken, Germany
- 10h00 *Development of Nanofitin protein scaffold for the treatment of inflammatory bowel diseases*
M. Zeisser, M. Cinier, C. Rousseaux, J. Rodriguez, A. Cunha, N. Truong Tan, O. Kitten, L. Scapozza
- 10h15 **Coffee break & Poster session**
- 11h00 *PEGylation of the metal organic framework, MIL89 improves stability and displayed a selective inhibitory effect on iNOS activity*
N. Mohamed, R. Davies, P. Lickiss
- 11h15 *Cerebroprotection of S-nitrosoglutathione-loaded in situ forming microparticles against thromboembolic stroke*
M. Parent, F. Dupuis, J. Perrin, C. Vigneron, Nicolas Violle, Jean-F. Bisson, P. Leroy, I. Lartaud, A. Boudier
- 11h30 *New Vectorisation strategies based on adamantine hydramers*
J. Russier, M. Grillaud, A. Bianco
- 11h45 *Delivery of siRNA in lung metastasis with targeted histidinylated lipopolyplexes*
M.-P. Gosselin, C. Gonçalves, V. Malard, P. Baril, C. Pichon, P. Midoux
- 12h00 *Anti-tumor Activity of DNA/Pluronic P85 Vaccination in MUC4- Overexpressing Tumor Model*
C. Roques, Z. Gaymalov, M. Torres, S. Batra, A. Kabanov
- 12h15 **POSTER SESSION & LUNCH BREAK**

NANOMEDICINE AND RADIATION THERAPIES

Chairpersons: A-C Couffin, M. Barberi-Heyob

- 14h00 *Medical Applications of Photodynamic Therapy in 2014*
Serge Mordon, « Thérapies Interventionnelles Assistées par l'Imagerie et la Simulation » (ThIAIS), Loos, France
- 14h30 *Nanoparticles and radiation therapies: Main issues*
Muriel Barberi-Heyob, Nancy Research Center (CRAN), Vandœuvre-lès-Nancy, France
- 14h50 *Overview of potential use of nanoparticles in cancer radiation therapy*
Eric Deutsch, Oncology Radiotherapy, Institute of Gustave Roussy Institute, Villejuif, France
- 15h20 *AGuIX® Nanoparticles for enhanced radiation therapy: Safety evaluation and major issues*
L. Sancey, S. Kotb, F. Lux, O. Tillement
- 15h35 **Coffee Break & Poster session**
- 16h15 *Multifunctional gold nanoparticles for image-guided radiotherapy*
G. Jimenez Sanchez, G. Laurent, C. Alric, C. Bernhard, S. Dufort, R. Bazzi, F. Boschetti, P. Perriat, F. Denat, G. Le Duc, O. Tillement, S. Roux
- 16h30 *Full description of deleterious species emitted by nanoparticles when submitted to ionizing radiations*
C. Sicard-Roselli
- 16h45 *Multifunctional nanoparticles for X-ray-induced PDT*
C. Frochot, R. Chouikrat, C. Truillet, A. Bulin, P. Arnoux, F. Baros, R. Vanderesse, F. Lux, O. Tillement, C. Dujardin, M. Verelst, M. Barberi-Heyob
- 17h00 **Industrial points of view**
Laurent Levy, **Nanobiotix**
Cédric Louis, **Nano H**, *AGuIX: nanoprobes for radiotherapy*
Thierry Bastogne, **CyberNano**
Arno Wiehe, **Biolitec**, *Use of nanoparticles with photodynamic therapy*
- 18h00 **Round table** led by Muriel Barberi-Heyob and Laurent Levy
with Cédric Louis, Thierry Bastogne, Arno Wiehe, Eric Deutsch and Serge Mordon
What's the future of the nanomedicine in association with non-radiative therapies ? What's next?
- 19h00 **Gala Dinner**

DECEMBER 12, 2014

NANOMEDICINE AND THERANOSTIC COST SESSION

Chairpersons: N. Mignet, R. Muller

- 9h00 *Magnetic Nanoparticles in Theranostics*
Robert Muller, University of Mons, Belgium
- 9h30 *New formulations of cationic gas-filled liposomes for ultrasound triggered image and dual delivery of drug and nucleic acids*
Chantal Pichon, Biophysical Center, Orléans, France
- 10h00 *Polymeric micelles encapsulating photosensitizer: structure/photodynamic therapy efficiency relation*
A.-F. Mingotaud, L. Gibot, A. Lemelle, U. Till, B. Moukarzel, P. Vicendo, M-P. Rols, C. Chassenieux, M. Gaucher, F. Violleau
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- 10h15 **Coffee break & Poster session**
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- 10h45 *Multispectral Optoacoustic Tomography (MSOT) for the Evaluation of Nanomaterial Pharmacokinetics and Biodistribution*
T. Devling, S. Morscher, W. Driessen
- 11h00 *A nanohydrogel approach to boost the relaxivity of conventional MRI Gd contrast agents*
M. Callewaert, C. Cadiou, C. Portefaix, M-C. Andry, S. Laurent, L. Vander Elst, R. Muller, M. Molinari, F. Chuburu
- 11h15 *Treatment of peritoneal micrometastasis by Electrochemotherapy assisted by fluorescence imaging*
M. Golzio, V. Jausserand, M. Keramidias, C. Righini, E. Bellard, M-P. Rols, J. Teissié, J-L. Coll
- 11h30 *Design of new RGD-containing NPs for imaging and drug targeted delivery*
A. Grassin, D. Duret, A. Favier, J-L. Coll, M. Jourdan, S. Valetti, D. Desmaële, S. Mura, P. Dumy, P. Couvreur, D. Boturyn
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- 11h45 **POSTER SESSION & LUNCH BREAK**

REGENERATIVE NANOMEDICINE

Chairpersons: P. Menu, J.L. Coll

- 13h45 *Nanosystems for Regenerative Medicine*
Didier Letourneur, LVTS, University Paris Diderot, University Paris Nord, France
- 14h15 *Exosomes: when nanoscale vesicles serve a broad range of therapeutic possibilities*
Emilie Velot, IMoPA, Ingénierie Moléculaire et Physiopathologie Articulaire, Vandoeuvre-lès Nancy, France
- 14h35 *Micro and nano structured hybrid implants*
Philippe Lavalle, Biomaterials Bioengineering, University of Strasbourg, France
- 14h55 *Study on nano-biomaterials for tissue regeneration*
Jiang Chang, Shanghai Institute of Ceramics, Chinese Academy of Science, China
- 15h35 SFNano-/ SANOFI Award for the best oral presentation
- 15h45 SFNano/NanoSMS Awards for the best poster presentations (x 2)
- 16h00 **Final Conclusions & Meeting Closure**

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