



First Cross Border Conference on NanoSciences and Materials for Health

A tribute to Patrick ALNOT

Scientific and geographic Context

Applications of nanosciences and nanotechnologies in biomedical and clinical purposes constitute a new scientific challenge. Nanomedicine holds great promises in three important domains that are diagnosis, targeted drug delivery and regenerative surgery. Upstream, such medical advances are made possible by multidisciplinary researches, which concern fundamental (physics, chemistry, biology) as well as technological aspects (micro- and nanotechnologies, nanobiosystems, bioengineering). Downstream, they also raise new questions for social sciences (toxicity, ethics, impact and regulation of new artificial nanosystems), which are today the object of an intensive international debate.

In early 2008, the NanoSMS (NanoSciences et Matériaux pour la Santé – NanoScience and Materials for Health) network was settled in Alsace by a comity of the PMNA (Pôle Matériaux et Nanoscience Alsace), and in Lorraine by a similar comity gathering members of Institut Jean Lamour (IJL), Institut Jean Barriol (IJB) and Biopôle. The network aims at developing nanomedicine and related sciences in Alsace and Lorraine, based on the expertise already present locally. Professor Patrick Alnot, who recently passed away, initiated the networking as early as in 2007. He has been the driving force of the project, playing a crucial role in structuring the network both in Alsace and in Lorraine, as well as within the C’NANO Grand Est Center for Nanosciences. He worked at integrating the goals of the NanoSMS project within the national research strategy proposed by the French Ministry for Higher Education and Research at the end of 2008. In Patrick Alnot mind, the NanoSMS project was one piece of a more ambitious cross border network to be stimulated.

Today, the NanoSMS network is based on local expertise including the Nancy-Strasbourg nanotechnology platform (MINALOR-STNano) which gathers state-of-the-art facilities for nanosystem engineering. In close relation to nanomedicine, the know-how present in Alsace and Lorraine spans from fundamental and technological sciences to applied (that is clinical) and societal fields. On the fundamental viewpoint, nanosciences have long been applied to the development of **functionalized surfaces** and **nanocomposite materials** as well as **bioengineering**, which find applications in regenerative surgery, for instance. Nanosciences bring **nanotechnological tools** which allow the investigation of biosystems on the nanometric (*i.e.* molecular) scale, such as **nanobiophotonics** (investigation of nanobiosystems with photons), or integration of various biotechnologies in lab-on-chip devices. Then, two important fields of research more directly related to applications in nanomedicine are strongly anchored in Alsace and Lorraine, which are the development of nanoparticles applied to **diagnostic and/or targeted drug delivery**. Finally, a local culture has emerged related to the investigation of the **toxicity** of artificial nanosystems applied to the biomedical environment.

The aim of the NanoSMS Alsace-Lorraine network is to facilitate and promote research, education and innovative applications in these fields of science in Alsace and Lorraine. About 70 research projects involving students, post-docs and permanent researcher have been identified which are being

developed presently in these domains in 25 research institutes in Alsace and Lorraine. Details may be obtained on the web site <http://www.nanosms.fr/> (only in french, so far)

The 1st Cross Border Conference on Nanosciences and Nanomaterials for Health opened to Switzerland, Germany (mostly Freiburg, Karlsruhe, Sarrbrücken), Luxembourg and Belgium will be the opportunity to open the scientific community identified by the NanoSMS project in Alsace and Lorraine to the counterpart community across the borders. Hence it is a first step towards the cross border networking envisioned by Patrick Alnot on Nanomedicine and related sciences. The conference will be a tribute to Patrick Alnot's work.

Objectives

The scientific program of the committee will be organized within three topics:

- *Functionalized surfaces and nanocomposites for biomedical applications; biomaterials and toxicology.*
- *Targeted drug delivery and nanoparticles for diagnostic.*
- *Nanotools for biomedical applications (nanomanufacturing, nano/micro fluidics, near-field microscopy, nano/micro manipulation...) and nanobiophotonics.*

The conference will be held within the framework of a Gordon-type colloquium: invitation of about forty speakers expert in their domains (20 plenary lectures and 20 keynotes). The total number of invited participants will be limited to 130 participants (including committees).

In order to support young future promising researchers, the organizing committee decided to call for communications by poster, with particular emphasize on young scientists (last year of PhD or post-doctorate). Within a dedicated half-day session, these researchers will present their works and their know-how. Scholarships will be awarded to these young scientists to cover a part of their expenses of accommodation and transport. The main objective of the poster session is to identify young promising scientists who might become the driving force of cross border networking in the near future.

Date : 21 – 25 June 2010 (5 days).

Location : Abbaye des Prémontrés at Pont-à-Mousson & Nancy (France)

Scientific program

The final scientific program will be available on the NanoSMS web site by April 15th.

Chairmen

Yves Fort (SRSMC – Nancy Université) and Jean-Claude Voegel (Université de Strasbourg)

Conference web site

<http://www.nanosms.fr/spip.php?article20>

Contact

Yves.Fort@srsmc.uhp-nancy.fr

Format and progress of the conference

Up to 130 participants among whom: 20 guests for plenary lectures (30 min + 15 min discussion) and 20 guests for keynotes (20 minutes all inclusive). In addition, selection and invitation of 20 to 30 young active professionals in the domain.

The conference will get organized in 6 sessions of 3 hours. A half-day session will be dedicated to the communications by posters. Another half-day session will be dedicated to a visit of the Nanosciences site of Nancy and some tourist activities in Nancy.

Scientific committee

Within the framework of the three topics defined above, its role is to propose the invited speakers. Its composition is the following:

Didier Baptiste (INRS, Paris, France)
Patrick Couvreur (Faculté de Pharmacie, Chatenay-Malabry, France)
Etienne Duguet (ICMCB, Bordeaux, France)
Yves Fort (SRSMC, Nancy, France)
Clemens Franz (Karlsruher Institut für Technologie, Germany)
Andrew Griffith (ISIS, Strasbourg, France)
Lucienne Juillerat (NIL-CHUV, Lausanne, Switzerland)
Jan Krüger (University of Luxembourg, Luxembourg)
Thomas Lecompte (Centre Hospitalier Universitaire, Nancy, France)
Wolfgang Meier (University of Basel, Switzerland)
Dino Moras (IGBMC, Strasbourg, France)
Bernard Nysten (Université Catholique de Louvain, Belgium).
Albrecht Ott (Universität des Saarlandes, Saarbrücken, Germany)
Jürgen Rühle (Albert-Ludwigs-Universität, Freiburg, Germany)
Mickaël Veith (Universität des Saarlandes, Saarbrücken, Germany)
Jean-Louis Viovy (Institut Curie, Paris, France)
Jean-Claude Voegel (Université de Strasbourg, France)

Organizing committee

Its role is to build the program by leaning on the propositions of the scientific committee. It will select the oral and poster contributions to insure a well-balanced program. It will also insure all the contacts with the participants and with the conference centre.

Marc Alnot (IJL - Institut Jean Lamour, Nancy)
Karine Anselme (IS2M - Institut de Science des Matériaux de Mulhouse)
Denis Beyssen (IJL - Institut Jean Lamour, Nancy)
Omar Elmazria (IJL – Institut Jean Lamour, Nancy)
Yves Fort (SRSMC – Structure et Réactivité des Systèmes Moléculaires Complexes, Nancy)
Benoît Frisch (Faculté de Pharmacie, Strasbourg)
Marie-Pierre Krafft (ICS – Institut Charles Sadron, Strasbourg)
Philippe Lambert (C’NANO Grand Est, Nancy)
Jérémie Léonard (IPCMS - Institut de Physique et Chimie des Matériaux de Strasbourg)
Patrick Menu (Faculté de Médecine, Nancy)
Didier Rouxel (IJL - Institut Jean Lamour, Nancy)
Jean-Claude Voegel (Faculté de Chirurgie Dentaire, Strasbourg)