



EUROPEAN COMMISSION  
DIRECTORATE-GENERAL JRC  
JOINT RESEARCH CENTRE

## **NanoBiotechnology: Bio-interfaces International Workshop 5-7 December 2007**

**EC Joint Research Centre, Ispra, Italy,**

### **Scope**

The JRC is organizing a series of Workshops within the frame of the "NanoBiotechnology Action" to provide an interdisciplinary forum for the presentation and discussion of fundamental aspects of bio-interface science and engineering. The need to increase our understanding of the interactions between biomolecules and surfaces, the behavior of complex macromolecular systems at materials interfaces, and biomolecule-biomolecule interactions is being driven by the rapid growth in biomedical research and sensor technologies and the role these interactions play in the fields of biology, biotechnology, diagnostics and medicine.

The Workshop Program is aimed at reviewing recent advances made in materials science and sophisticated surface and interface engineering and analysis methods, for the control and understanding of bio/non- biological interfaces mechanisms. A major aim of the research presented in the Workshop is to develop experimental tools and theoretical models to describe bio-interface phenomena with physical concepts and rules that allow predictive, model-driven research, similar to the interfacial understanding that has been successfully developed for semiconductor processes. The workshop will focus primarily on physical and chemical methods of functionalisation, patterning at the micro and nanometer scale, and the corresponding characterization and imaging techniques, in view of applications in the field of sensors, detection systems and biomedical applications.

The following topics will be addressed:

- "In-Situ Spectroscopy of Biomolecules at Interface"
- "Passive and Non-Fouling Surfaces."
- "Active' - Dynamic Biointerfaces"
- Surface micro and nanopatterning
- "Protein-Surface Interactions"
- "Oligonucleotide - Surface Interactions."
- "Cell surface interactions"

### **Background**

Recent advances in NanoBiotechnologies (surface functionalisation and patterning, detection, microfluidics, integration) and tools (cell manipulation and sensing) will have a decisive impact on the performance of the new generation of biosensors, biochips and biomaterials in general. The new technical possibilities (high sensitivity, massively parallel analysis but also the new insight in cell metabolism), offer strong opportunities for the implementation of current EU policies strategies and action plans, in particular for those related to the European Environment and Health strategy 1 (SCALE initiative), the Life Science and Biotechnology Action Plan 2 and the Environmental Technology Action Plan 3.

The proposed workshop will present and discuss recent results in the field of bio-interface design, and their application to biosensors and biochips, cell sensing and metabolism monitoring, in relation to toxicology studies and exposure assessment. The different fields to be discussed will relate to surface functionalisation and patterning techniques for increased sensor performance, detection methods, nanotools and methods for cell metabolism monitoring and the corresponding potential applications in the policy area.

1. [http:// europa.eu.int/comm/environment/health/index\\_en.html](http://europa.eu.int/comm/environment/health/index_en.html)
2. [http:// europa.eu.int/comm/biotechnology/introduction\\_en.html](http:// europa.eu.int/comm/biotechnology/introduction_en.html)
3. <http:// europa.eu.int/comm/environment/etap/>
4. [http://europa.eu.int/comm/space/articles/news/news99\\_en.html](http://europa.eu.int/comm/space/articles/news/news99_en.html)

## Deadlines

First Announcement, call for abstracts	September 1 <sup>st</sup> 2007
Notification of invitations	<b>October 1<sup>st</sup> 2007</b>
Pre-workshop registration date – hotel booked by JRC	<b>November 9<sup>th</sup> 2007</b>
Submission of full presentation (in PowerPoint form)	November 9 <sup>th</sup> 2007
Conference	<b>December 5<sup>th</sup>, 6<sup>th</sup> 7th 2007</b>

## Organizing Committee

Dr. Francois Rossi, Nanotechnology and Molecular Imaging Unit, IHCP, JRC Ispra  
 Dr. Pascal Colpo, Nanotechnology and Molecular Imaging Unit, IHCP, JRC Ispra  
 Dr. Maurice Whelan, Nanotechnology and Molecular Imaging Unit, IHCP, JRC Ispra

## Presentations:

The official language of this workshop is English. Presentation will be limited to a maximum of 25 minutes (20 minutes talk plus 5 minutes of questions). We prefer the presentation to be in an electronic form using Microsoft PowerPoint. To avoid any unnecessary computer problems on the day, we ask you to send your presentation by email before November 1st 2007. Please use WinZip file compression if your presentations are greater than a few megabytes. If you experience any problems sending your presentation, do not hesitate to contact us. Naturally, if you feel happier, you could always bring a CD version as a backup.

## Workshop Registration

The participation for external participant is on invitation. The experts invited will be paid a transportation fee plus a per diem. The JRC will provide transport between the local Milan airports workshop and hotels.

Please complete the registration form that you will find at the end of the document and email or fax using the following details

Email: maria.caldeira-guimares@ec.europa.eu

Fax: +39-0332-78.5787

## Accommodation

The JRC at Ispra has reserved a number of rooms in two local hotels: 'Albergo Conca Azzurra" and "Hotel dei Tigli" at preferred rates. If you require a reservation, please indicate it on your registration form.

## Travel information

The JRC is situated at Ispra on the eastern shore of Lake Maggiore, about 60 km NW of Milan. The nearest motorway exit is 'Sesto Calende/Vergiate' on the A26 to Gravelona Toce. From there, follow signs to Besozzo. After about 10 km and several sets of traffic lights, turn left to 'Cadrezzate'. Follow the road through Travedona and Cadrezzate, to the roundabout in front of the entrance to the JRC. The visitor's carpark is on the right. The nearest airports are Milan Malpensa (30 km), Milan Linate (86 km). The closest train station with a regular service is Sesto Calende (14 km). All distance are from the JRC.

## Contact

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<b>Registration, hotel, transport and administration issues</b>	<b>Scientific or technical queries</b>
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## Useful weblinks

Joint Research Centre (JRC)	<a href="http://www.jrc.it">www.jrc.it</a>
Institute for Health and Consumer Protection (IHCP)	<a href="http://ihcp.jrc.cec.eu.int/">http://ihcp.jrc.cec.eu.int/</a>
Enlargement action	<a href="http://www.jrc.cec.eu.int/default.asp@sidsz=what_we_do&amp;sidstsz=enlargement_support.htm">http://www.jrc.cec.eu.int/default.asp@sidsz=what_we_do&amp;sidstsz=enlargement_support.htm</a>
Nano2Life	<a href="http://www.nano2Life.net">http://www.nano2Life.net</a>

# REGISTRATION FORM

## (Shuttle Transportation )

**IMPORTANT:** You always receive a confirmation by fax or e-mail, if not please, contact us (at least 3 days before the meeting).

<b>Meeting:</b>	<b>Bio-Interfaces</b>
<b>Date:</b>	<b>5-7 December 2007</b>

Please note that this registration can be filled in by double clicking the field. An automatic e-mail will be created by clicking the e-mail address below.

To be returned before **01/11/2007** to: **Public Relations**  
**Joint Research Centre (attention: M. Paula Caldeira Guimares )**  
**Ispra Site , T.P. 020**  
**I-21020 ISPRA (VA)**  
**Tel. +39-0332-78.9731**  
**Fax +39-0332-78.5787**  
**e-mail maria.caldeira-guimares@ec.europa.eu**

**After this date hotel accomodation and transport service cannot be guaranteed**

**TYPE OR PRINT IN BLOCK CAPITALS PLEASE**

Surname: \_\_\_\_\_ Gender M/F: \_\_\_\_

First Name: \_\_\_\_\_

Organisation: \_\_\_\_\_

Address: \_\_\_\_\_

City, Post code and Country: \_\_\_\_\_

Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ e-mail: \_\_\_\_\_

**Please be sure to carry your passport or ID when visiting the JRC**

Nationality: \_\_\_\_\_

Date, place of birth: \_\_\_\_\_

Passport  / ID No. : \_\_\_\_\_

Date and Place of Issue: \_\_\_\_\_

*"Any information provided to the Commission -JRC will be considered as strictly confidential and will be used only for the purposes of this registration, according to article 10 of Law 675/96 as amended by Law 127/2001"*

**ACCOMODATION**

Single Room (B&B) from \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ (moming) = \_\_\_\_ night(s)

Double Room (B&B) from \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ (moming) = \_\_\_\_ night(s)

**TRANSPORTATION:** Please note that a shuttle service will be organised from Milan -Malpensa airport ( arrival hall exit 3 ) to your assigned hotel. You will receive information relevant your shuttle departure time and hotel address shortly after receipt of all registration forms.

I will be arriving: at \_\_\_\_\_ on \_\_\_\_/\_\_\_\_/\_\_\_\_ at \_\_\_\_:\_\_\_\_ hrs  
with flight / number \_\_\_\_\_  
from \_\_\_\_\_

I will be departing: at \_\_\_\_\_ on \_\_\_\_/\_\_\_\_/\_\_\_\_ at \_\_\_\_:\_\_\_\_ hrs  
with flight / number \_\_\_\_\_  
to \_\_\_\_\_