



**RESEARCH CONFERENCES**

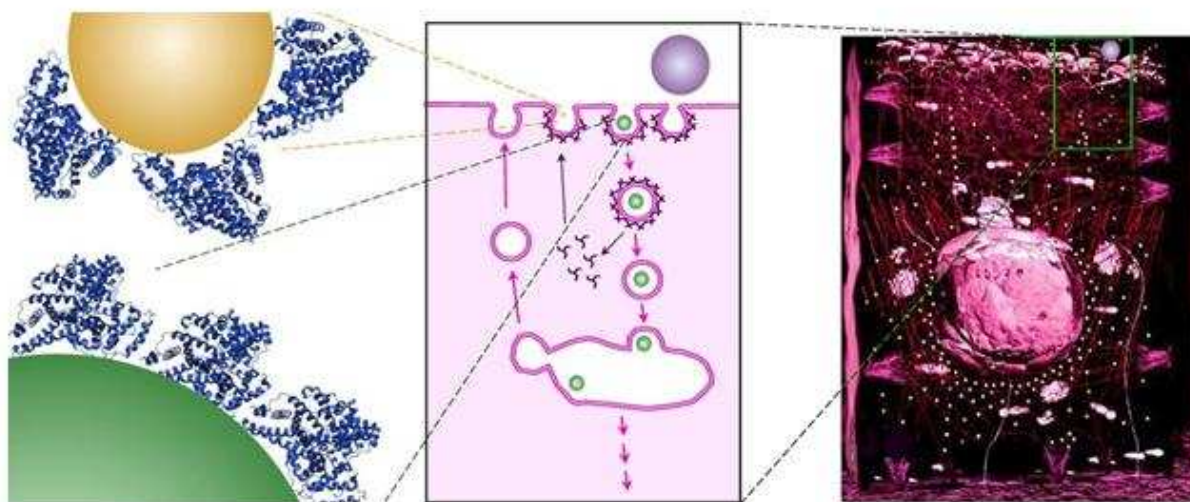
ESF-EMBO Symposium

**Probing Interactions  
Between  
Nanoparticles/Biomaterials  
and Biological Systems:  
Alternative Approaches to  
Bio- and Nano-toxicity**

Hotel Eden Roc, Sant Feliu de Guixols  
(Costa Brava) • Spain  
3-8 November 2007

Chair: **Kenneth Dawson** • University College Dublin, IE  
Vice-Chair: **Iseult Lynch** • University College Dublin, IE

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# Final Programme

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## Saturday, 3 November

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Late afternoon / early evening	Registration at the ESF-RC desk
19.00	Welcome Drink
20.00	Dinner

## Sunday, 4 November

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### Session 1: Perspectives in nanobiology, nanotoxicology and nanomedicine

Chair: Iseult Lynch, University College Dublin, IE

09.00-09.40	<b>Günter Oberdörster</b> University of Rochester, US <i>Nanotoxicology and the potential origins of nanoparticle-induced diseases</i>
09.40-10.20	<b>Marek Radomski</b> Trinity College Dublin, IE <i>Nanotoxicology, nanobiology and nanomedicine: An overview of the issues and commonalities</i>
10.20-10.40	Coffee break

### Session 2: Nanoparticles and disease?

Chair: Günter Oberdörster, University of Rochester, US

10.40-11.20	<b>Marie Claud Jaurand</b> Institut National de la Santé et de la Recherche Médicale, FR <i>Potential for nanoparticles to cause cancer - the asbestos-mesothelioma link</i>
11.20-12.00	<b>Andre Nel</b> University of California, US <i>Reactive Oxygen Species (ROS) diseases induced by nanoparticles</i>
12.00-12.40	<b>Dolores Cahill</b> University College Dublin, IE <i>Potential for proteomics approaches to probe particle-induced intracellular regulatory processes</i>
12.40-13.15	Discussion
13.15-14.15	Lunch
14.20-14.35	<b>Vibeke Ansteinsson</b> Nordic Institute of Dental Materials, NO <i>Dose-dependent inflammatory response to inorganic ceramic materials (short talk)</i>
14.35-14.50	<b>Berta Saez-Gutierrez</b> Hospital Clinico Universitario "Lozano Blesa", ES <i>Magnetically charged dendritic cells for tumour-targetting</i>

(short talk)  
14.50-15.10 Discussion  
15.10-15.15 Close of session

## Session 3: Protein expression on surfaces and protein corona on particles

Chair: Vicki Stone, Napier University, UK

15.20-16.00 **Sara Linse**  
Lund University, SE  
*Protein association at particle surfaces – potential for altered structure, stability, and function*

16.00-16.20 Coffee

16.20-16.35 **Jean-Francois Berret**  
Laboratoire Matière et Systèmes Complexes, FR  
*Association between nanoparticles and biopolymers*  
(short talk)

16.35-16.50 **Jesus M de la Fuente**  
University of Zaragoza, ES  
*Tat-peptide as an efficient molecule to translocate gold nanoparticles and CdS quantum dots into cell nucleus*  
(short talk)

16.50-17.05 **Ralph Sperling**  
Phillipes University of Marburg, DE  
*Polymer-coated inorganic nanocrystals with defined number of functional groups*  
(short talk)

17.05-17.20 **Stéphanie Lacotte**  
CNRS, FR  
*Interfacing functionalized carbon nanohorns with primary phagocytic cells*  
(short talk)

17.20-18.15 Discussion  
18.15 Close of session  
19.00-20.00 Dinner  
20.00-21.30 Poster Session I

## Monday, November 5

## Session 4: Nanotoxicity as an emerging field – what we can learn from ultra-fine particles research

Chair: Vicki Colvin, Rice University, US

08.30-09.20 **Ken Donaldson**  
Napier University, UK  
*Mechanisms of toxicity of ultrafine particles and tests for toxicological effects of particles*

09.20-10.10 **Michael Riediker**

	Institute of Occupational Health Sciences, CH <i>Translocation of ultrafine particles from the lungs and subsequent diseases related to exposure to particles</i>
10.10-10.30	Coffee break
10.30-11.20	<b>Konrad Rydzyński</b> Nofer Institute of Occupational Medicine, PL <i>Potential alternatives to in vivo toxicity testing – application to nanotoxicology</i>
11.20-12.10	<b>Paul Borm</b> Zuyd University, NE <i>Nanoparticle impacts on extrapulmonary systems</i>
12.10-12.25	<b>Alan Casey</b> Dublin Institute of Technology, IE <i>Nanotoxicology of single-walled carbon nanotubes (short talk)</i>
12.25-12.55	Discussion
12.55-13.00	Close of Session
13.00-14.00	Lunch

## Session 5: The cell-biomaterial/cell-nanoparticle interaction characterised “functionally”

Chair: **Wolfgang Kreyling**, GSF-National Research Center for Environment and Health, DE

14.10-14.50	<b>Brooke Mossman</b> University of Vermont, US <i>Transcriptomic analysis of changes in gene expression in blue asbestos-induced mesothelioma</i>
14.50-15.20	<b>Iseult Lynch</b> University College Dublin, IE <i>A rational approach to nanoparticle-cell interaction?</i>
15.20-15.40	Coffee break
15.40-16.20	<b>Vicki Colvin</b> Rice University, US <i>Understanding nanomaterials properties as factors in nanotoxicology</i>
16.20-16.35	<b>Mihaela Gheorghiu</b> International Centre of Biodynamics, RO <i>Biological characterisation of nano-patterned bio-surfaces using time-based impedance spectroscopy (short talk)</i>
16.35-16:50	<b>Sven-Peter Heyn</b> Light Powered Instruments GmbH, DE <i>Photonic force microscopy: A promising tool to characterise and quantify interactions between nanoparticles and cells (short talk)</i>
16.50-17.40	Discussion
17.40-18.00	<b>Pilar Aguar</b> DG RTD - Directorate-General for Research; European Commission <i>Forthcoming EU research activities in Nanorisk</i>

	<i>(short talk)</i>
18.00	Close of Session
19.00-20.00	Dinner
20.00-21.30	Poster Session II

## Tuesday, 6 November

### Session 6: Future Look

Chair: Michael Garner, ICON, US

09.00-09.30	<b>Vicki Stone</b> Napier University, UK <i>Future perspectives in nanotoxicology</i>
09.30-10.00	<b>Joachim Rädler</b> Ludwig-Maximilians Universität, DE <i>Future perspectives in bionanoscience</i>
10.00-10.20	Coffee break
10.20-12.20	Round-table debate/discussion on important issues in nanotoxicology, nanobiology (Participants: M. Garner, V. Colvin, G. Oberdörster, K. Donaldson, F. Quinn, M. Hendricks, W. de Jong, K. Radzyński, A. Nel, K. Dawson)
12.20-13.00	<b>Sally Tinkle</b> National Institutes of Health, US <i>NIH strategy in nanomedicine and nanotoxicology</i>
13.00	Lunch
Afternoon	Half-day excursion to Girona or Free time
20.00	Get-together and Conference Dinner

## Wednesday, 7 November

### Session 7: Visualisation of cell-biomaterial/cell-nanoparticle interactions

Chair: Wade Adams, Rice University, US

08.50-09.40	<b>Wolfgang Parak</b> Ludwig-Masimilians Universität, DE <i>Physicochemical probes of cell-nanoparticle interaction and nanoparticle uptake by cells</i>
09.40-10.30	<b>Yuri Volkov</b> Trinity College Dublin, IE <i>High-throughput identification of cellular uptake of nanoparticles using cytometry-related techniques</i>
10.30-11.00	Coffee break
11.00-11.50	<b>Vyvyan Howard</b> University of Ulster at Coleraine, UK <i>Microscopic techniques for quantification of nanoparticle uptake by cells</i>
11.50-12.05	<b>Gerard Byrne</b>

University of Nottingham, UK

*Application of TIRF and Epi-fluorescence microscopies to high-speed imaging of cell-material interactions*  
(short talk)

12.05-12.20

Furong Tian

GSF-National Research Center for Environment and Health, DE

*Interaction between microtubules and internalised nanoparticles*  
(short talk)

12.20-12.50

Discussion

12.50-13.00

Close of Session

13.00-14.00

Lunch

## Session 8: Nanotoxicity as an emerging field – toxicology and eco-toxicology considerations

Chair: Hugh Byrne, Dublin Institute of Technology, IE

14.10-15.00

Wolfgang Kreyling

GSF-National Research Center for Environment and Health, DE

*Ultrafine particle-lung interactions: what we can learn from these studies – size, uptake, mechanisms, etc.*

15.00-15.50

Wim de Jong

National Institute for Public Health and the Environment, NL

*Potential of in-vitro toxicity tests to elucidate the cellular effects of nanoparticle exposure*

15.50-16.10

Coffee break

16.10-17.00

Karel De Schamphelaere

Ghent University, BE

*Eco-toxicological aspects of nanoparticle interactions with living materials*

17.00-17.15

Peter Wick

EMPA, Materials Science and Technology, CH

*Nanomaterial cell interactions – how carbon nanotubes affect cell physiology*  
(short talk)

17.15-17.30

Vittoria Raffa

Scuola Superiore Sant'Anna, IT

*Physico-chemical properties affecting carbon nanotube cellular uptake*  
(short talk)

17.30-17.45

Lara Lacerda

University of London, UK

*Carbon nanotubes as nanomedicine: from toxicology to pharmacology*  
(short talk)

17.45-18.15

Discussion

18.15-18.30

Final remarks and future aspects

18.30

Close of session

19.00

Dinner

**Thursday, 8 November**

8:00

Breakfast & Departure

### **Abstracts, Posters & Short Oral Presentations**

There will be no short talks other than those listed on the programme. All other abstracts have been accepted as posters. The list of accepted posters is available from [www.esf.org/conferences/07227](http://www.esf.org/conferences/07227)

Posters can be fixed with self-adhesive tape, blu-tack or drawing pins onto double-sided poster panels. Recommended poster size is 130 cm high x 130 cm wide. Use letters and drawings that can be read from approximately 100 cm distance.