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ESF Research Conferences

A Programme of the European Science Foundation

Preliminary Programme

ESF-FWF Conference in Partnership with LFUI

Solid/Fluid Interfaces

Complex Fluid Interfaces and Nanofluidics

Universitätszentrum Obergurgl, near Innsbruck • Austria • 9-14 September 2006

Chair: Klaus Mecke • Universität Erlangen-Nürnberg, DE

Vice-Chair: Marjolein Dijkstra • Universiteit Utrecht, NL

www.esf.org/conferences/pc06202

This conference is the fifth in a series of meetings on Solid/Fluid Interfaces. The last decade has witnessed rapid progress in the theory and experimental investigation of complex fluid interfaces which are omnipresent and therefore central to many key issues not only in physics, but also in chemistry, biology and nanotechnology. The focus has shifted from simple liquids to complex fluids, to liquids near man-made tailored interface structures and to liquids in spatially complex structured solids such as porous media and wet granular matter. Understanding the dynamics and flow behaviour of liquids close to solid interfaces is important for the goal of micro- and nanofluidics to realise an ensemble of man-made labs on a nanostructured chip.

The conference aims to bring together scientists with diverse backgrounds to foster cross-fertilisation between disciplines and the generation of novel fundamental ideas as well as applications. Topics will include:

- micro- and nanofluidics;
- interfacial dynamics;
- fluids in porous and granular media;
- fluid structure near solid substrates;
- wetting;
- fluid interfaces of complex fluids.

In addition to the talks by invited speakers, there will be talks selected from poster abstracts, as well as poster presentations and prizes awarded to the best posters.

Invited Speakers will include

• Dirk Aarts Ecole Normale Supérieure, Paris, FR	*Thermal capillary waves in colloid-polymer mixtures*
• Tapio Ala-Nissila Helsinki University of Technology, FIN	*Dynamics and kinetic roughening of menisci and contact lines during wetting*
• Elisabeth Charlaix UCB Lyon I, Villeurbanne, FR	*Low friction flows on patterned surfaces*
• Marjolein Dijkstra Utrecht University, NL	*Entropic wetting, template-induced freezing, and the effect of confinement in suspensions of colloidal hard spheres.*
• Laszlo Granasy Inst. Solid State Physics, Budapest, HU	*Phase field modelling of polycrystalline patterns in two and three dimensions*
• Karin Jacobs Univ. des Saarlandes, Saarbrücken, DE	*Slippage at the solid/liquid: new experiments and new views*
• Mark Knackstedt Australian National Univ., Canberra, AU	*Fluids and porous structure; the effects of topology, wetting and flow rate*

• **Liliane Léger** Collège de France, Paris, FR	*Tba*
• **Anna Maciolek** Polish Acad. of Sciences, Warsaw, PL	*Finite-size effects and universality in superfluid wetting films*
• **Greg Morfill** MPI für extraterrestrische Physik, Garching, DE	*Liquid complex plasmas - investigations of fluids at the kinetic level*
• **Christopher Mundy** Lawrence Livermore Nat. Lab. CA, US	*Ab initio approaches to structure and reactivity of liquid-vapour interfaces*
• **Wilson Poon** University of Edinburgh, UK	*Colloids in complex media: the role of (internal) interfaces*
• **Stephen Quake** Stanford University, CA, US	*Biological large scale integration*
• **David Quéré** Collège de France, Paris, FR	*Tba (wetting)*
• **Harald Reichert** MPI für Metallforschung, Stuttgart, DE	*X-ray investigations of solid-liquid interfaces*
• **Sunil K. Sinha** UCSD, La Jolla, US	*Dynamics of fluctuations on thin supported liquid polymer films studied by X-ray Photon Correlation Spectroscopy*
• **Julia Yeomans** Rudolf Peierls Ctre for Theor. Physics, Oxford, UK	*Wetting and spreading on patterned surfaces*