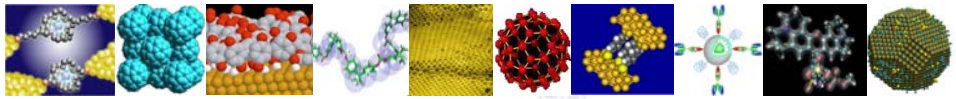

International Seminar on Multiscale Modelling of Polymer Materials

13-14 October, 2008, NTNU, Trondheim, Norway

Polymer materials ranging from polymer particles to nanocomposites find novel applications in electronics, MEMS as well as in oil and gas industry. One of the important objectives in material research is to engineer the microscale and nanoscale molecular characteristics in order to obtain designed mechanical and physical properties of the material. Fundamental understanding of their hierarchical structures and behavior requires multiscale modeling and simulation strategies to provide seamless coupling among various length and time scales. Multiscale modeling is a new research area at NTNU as well as in Norway.

The purpose of the seminar is twofold: to present the novel applications of polymer particles and to demonstrate the state-of-the-art multi-scale modeling techniques capable of bridging different physical scales for polymer particles from molecular structures to mechanical properties.

You are welcome!

Zhiliang Zhang
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Registration:

Please register for the seminar with PhD students Ms. **Jianying He** (jianying.he@ntnu.no, tel: 0047-73594686) or Mr. **Hallvard Tyldum** (hallvard.tyldum@ntnu.no, tel: 0047-73594550) by October 7th 2008.

Programme

Monday October 13th, Lecture Room R55, Realfagbygg

Chairman *Zhiliang Zhang*

13:00 **Opening Remarks — Welcome**

13:10 **Anisotropic Conductive Film Material Technologies in Flat Panel Display and Semiconductor Packaging Applications**
Itsuo Watanabe, Electronic Materials Business Sector, Hitachi Chemical Co.Ltd., Japan

13:55 **Mechanical Characterisation of Micrometer Sized Particles for Microsystem Applications**
Helge Kristiansen, Conpart AS, Norway

14:25 **Coffee Break**

Chairman *Helge Kristiansen*

14:45 **Modelling of Polymer Cored BGA Interconnect Performance**
David Whalley, The Wolfson School of Mech. & Manuf. Engineering, Loughborough University, Great Britain and Conpart AS, Norway

15:30 **Constitutive Modelling of Thermoplastics Using the Modified Boyce-Raghava model**
Mario Polanco-Loria, SINTEF Materials and Chemistry, Norway

16:00 **Nanomechanics of Polymer Particles**
Jianying He, NTNU Nanomechanical Lab, NTNU, Norway

16:30 **Discussions & Lab visiting**

19:00 **Dinner for the specially invited**

Tuesday October 14th, Lecture Room R8, Realfagbygg

Chairman *Andreas Echtermeyer*

08:30 **Multiscale simulation of Soft materials: Developments, Achievements and Challenges**
Florian Müller-Plathe, Darmstadt University of Technology, Germany

09:15 **Hierarchical Modeling of Polymers at Equilibrium and Beyond-equilibrium Conditions with Emphasis on Viscoelasticity**
Vlasis G. Mavrantzas, Division of Chemical Technology and Applied Physical Chemistry, University of Patras, Greece

10:00 **Coffee Break**

Chairman *Arild Clausen*

10:20 **Multi-scale simulations of Composites and Semi-crystalline Polymers**
Fritjof Nilsson, Fiber and Polymer Technology, KTH – Royal Institute of Technology Stocholm, Sweden

11:05 **Multiscale Molecular Modeling of Nanostructured Polymer Systems of Industrial Interest**
Maurizio Fermeglia, The Computer Aided Systems Laboratory, University of Trieste, Italy

11:50 **Panel discussions and Closing Remarks,**
Zhiliang Zhang

NTNU Nanomechanical LAB

NTNU Strategic Area Materials

Forskningsrådet NANOMAT

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NTNU Innovation and Creativity