

Transport in nanostructured materials - design and characterisation

Varbergs Kusthotell, Sweden, 31st of August - 1st of September 2017



Welcome!

It is the tenth-time SuMo BIOMATERIALS arrange a yearly conference in the end of August. New for this year is that Chalmers Area of Advance Nanoscience and Nanotechnology is co-organizing the conference. The financial support from the Swedish Research Council for this conference is gratefully acknowledged.

This is an interdisciplinary conference covering a wide range of topics. The presentations include both experiments and computer modelling, which makes them important for a broad range of scientists coming from different scientific disciplines and industrial sectors. This year's conference emphasizes aspects connected to the nanoscale. One of the main topics during the conference is the visualization and characterisation of materials on the nanoscale, but also the influence of nanostructures in food and pharmaceuticals has on the material properties.

One of the most important aims with the conference is to create new scientific contacts and collaborations. To gain this we must all help each other to be interactive and discuss during this conference. Thus please share your thoughts and scientific challenges in order to create a springboard for future ideas and success.

Anette Larsson

Director for SuMo BIOMATERIALS

Bo Albinsson

Director for Area of Advance
Nanoscience and Nanotechnology

Program

Thursday 31st of August

09.00-09.50 Registration and coffee

09:50-10.00 Opening of the conference

Prof. Anette Larsson, Chalmers, Director of SuMo Biomaterials

Advances within visualization and characterisation on the nanoscale of materials

Chair: Leif Lundin, Rise, Sweden

10.00-10.30 SOFT Microscopy for studies of transport properties

Prof. Eva Olsson, Chalmers, Sweden

10.35-11.05 Characterizing the hydraulic properties of a porous coating of paper using FIB-SEM tomography and 3D pore-scale modelling

PhD candidate. Hamed Aslan Nejad, Utrecht University, NL

11.10-11.40 Small-angle X-ray Scattering: From Solution to Imaging

Dr. Marianne Liebi, MAX IV Laboratory, Lund University, Sweden

11.45-12.15 Stratum corneum - a responding barrier membrane

Prof. Emma Sparr, Lund University, Sweden

12.20-13.30 LUNCH

Nanostructured materials in food and pharmaceuticals I

Chair: Aila Särkkä, Chalmers, Sweden

13.30-14.00 Integrating Physics, Mesostructure design and Functionality of Food

Prof. Erik van der Linden, Wageningen University and Research, The Netherlands

14.05-14.35 Structured biopolymers – design for pleasant chewing and swallowing

Prof. Mats Stading, RISE, Sweden

14.40-15.10 Water in Food - an easy subject to swallow

Prof. Peter Lillford, Birmingham University, UK

15.10-15.40 COFFEE

15.40-16.10 Food proteins under process studied by neutron scattering and imaging

Assoc. Prof. Camille Loupiac, AgroSup, Dijon, France

16.15-16.35 Designing different type of structures of protein nanofibrils

Prof. Maud Langton, SLU, Sweden

16.40-18.00 Poster pitch and POSTERS

19.00 - DINNER

Friday 1st of September

Nanostructured materials in food and pharmaceuticals II
Chair: Anne-Marie Hermansson, Chalmers, Sweden

08.30-09.00 How and why do polymer brushes repel or attract proteins?

Assoc. Prof. Andreas Dahlin, Chalmers, Sweden

09.05-09:35 Use of microcapsules as controlled release devices

Assoc. Prof. Lars Nordstierna, Chalmers, UK

09.40-10.00 Bacterial cellulose - plant polysaccharide hydrogels: microstructural, mechanical and mass transport properties

Dr. Patricia Lopez-Sanchez, University of Queensland, Australia

10.05-10.35 COFFEE

10:40-11.10 Modeling of the behaviour of hydrogels for pharmaceutical and biomedical applications

Prof. Gaetano Lamberti, Università degli Studi di Salerno, Italy

11.15-11.35 Visualization and characterization of nano-structured polymer membranes used for pharmaceutical controlled release formulations

Dr. Christian von Corswant, AstraZeneca, Mölndal, Sweden

11.40-12.50 LUNCH

Chair: Anette Larsson, Chalmers, Sweden

12.50-13.10 From experiments with images to 3D models

Dr. Henrike Häbel, Chalmers, Sweden

13.15-13.35 Oxidation of xylan based polymers

Dr. Mikaela Börjesson, Chalmers, Sweden

13.40-14.00 COFFEE

14.00-14.30 Towards optimised drug delivery: determining the structure and composition of drug-containing surfactant monolayers and micelles

Prof. Jayne Lawrence, Manchester University, UK

14.35-15.05 Elasticity, Plasticity, and Failure of Biodegradable Polymers: Prelude to Biodegradable Osmotic Drug Delivery Pumps

Prof. Ron Siegel, Department of Pharmaceutics, University of Minnesota, US

15.10-15.20 Closing remarks

15.30 Bus departure from Varberg (expected time in Gothenburg 16.45)

Posters

Soft Material Microscopy

Annika Altskär

Microscopy -microstructure characterization

Camilla Öhgren

Foaming Capability Trial Experiment of Arabinoxylans Using Capillary Viscometer

Kalep Filli

Determination of the 3D Microstructure of Coatings for Controlled Drug Release

Cecilia Fager

Teaching rheology to pharmacy students

Sara Fennvik

Hydrogels as sugar carriers in sport drinks

Patricia Lopez-Sanchez

Determination of the phase diagram of GMO/GME/PG and water, its rheological and release properties

Anna Ström

Characterisation of arabinoxylan extracted from psyllium husk

Anna Ström