

# Preliminary programme for the Norwegian Nano Symposium 2019

(version 10.10.2019)

## Quality Panorama Hotel, Tiller

### Wednesday 16 October

**08:45** Registration and Coffee

#### **Session 1: Small, better, faster, stronger**

09:00 *Welcome*

John de Mello, NTNU Nano

09:05 *Design and synthesis of nanoparticles for biotechnology and medicine*  
Erik Reimhult, University of Natural Resources and Life Sciences, Vienna

09:50 *Co-existing Ferromagnetic-Antiferromagnetic Order in a Metamaterial*  
Anders Strømberg, NTNU

10:05 *Ice adhesion and wettability at nanoscale*  
Sigrid Rønneberg, NTNU

10:20 *NIL Metasurfaces for miniaturized optics*  
Christopher A. Dirdal, SINTEF Microsystems and Nanotechnology

**10:35** Coffee

#### **Session 2: Small, better, faster, stronger**

10:45 *The future of Materials: Smart, Functional, Sustainable*  
Athanasia Athanassiou, Istituto Italiano di tecnologia

11:30 *Friction vs. area scaling of superlubric NaCl particles on graphite*  
Astrid de Wijn, Department of Mechanical and Industrial Engineering, NTNU

11:45 *Working with NorFab: The Norwegian Infrastructure for Micro- and Nanofabrication*  
Peter Köllensperger, NTNU NanoLab

12:00 *Using point defects in semiconductors for quantum technology*  
Lasse Vines, University of Oslo

**12:30** LUNCH

#### **Session 3: Energy crisis - What energy crisis?**

13:30 *Chasing hydrogen with photons and neutrons*  
Olena Zavorotynska, University of Stavanger, Norway

14:00 *Taming the surfaces of Silicon nanoparticles for Lithium ion batteries*  
Ingvild Jensen, SINTEF INDUSTRY

14:15 *Perspectives on costs and development of nano-materials for energy conversion processes*  
Shareq Mohd Nazir, NTNU

14:30 *Engineering approaches for Perovskite solar cell materials*  
Meysam Pazoki, Uppsala University, Sweden

14:45 *Core-shell electrocatalysts for energy applications*  
Svein Sunde, NTNU

**15:15** Coffee (Put up posters)

#### **Session 4: Will Death Ever Die?**

- 15:45 *Challenges in using nanofabricated structures to study living systems*  
Pawel Sikorski, NTNU
- 16:15 *3D orientational imaging of bone using X-ray diffraction computed tomography*  
F. K. Mürer, NTNU
- 16:30 *Tantlum Pentaoxide waveguide chip developed directly on thin transparent substrate for fluorescence microscopy of biological cells*  
Anish Priyadarshi, UiT-The Arctic University of Norway
- 16:45 *Nanomedicine and sonopermeation for treatment of cancer and brain disease*  
Sofie Snipstad, NTNU

#### **Parallell Sessions**

- 17:00 **Poster Session until 19.00**
- 18:00 **Company presentation**  
*Why work/write your thesis for SINTEF MiNaLab?*  
Christopher A. Dirdal and Ozhan Koybasi

### **Thursday 17 October**

#### **Session 5: Will Death Ever Die?**

- 09:00 *Nanooptics for trapping and analysis of nanoparticles*  
Olav Gaute Hellesø, University of Tromsø, Norway
- 09:30 *Unraveling the intricate in vivo fate of active-targeting nanomedicines*  
Alexandros Marios Sofias, Dept of Circulation and Medical Imaging, NTNU
- 09:45 *The role of conformational dynamics in protein function; Deciphering CRISPR-Cas12a and hydrolytic lipase function by studies at the single molecule level*  
Magnus B Sletfjerding, Novo Nordisk Center for Protein research, University of Copenhagen
- 10:00 *Piezoelectric ceramics as bone replacement material*  
Magnus Rotan, Dept of Materials Science and Engineering, NTNU
- 10:15 Coffee**
- 10:25 *Taking control of innate immunity with nanobiologics*  
Willem Mulder, Mount Sinai, New York
- 11:10 *Electron beam lithography: principles and applications for cell studies*  
Jakob Vinje, NTNU
- 11:25 Coffee**

## **Session 6: Sinner or saviour? The impact of nanotechnology on pollution.**

- 11:35 *AFM study cellulose nano-fibril swelling in water – relevance of nanofiber crystallinity*  
Vegar Ottesen, NTNU
- 11:50 *Gas sensors based on 2D heterostructures*  
Ozhan Koybasi, SINTEF DIGITAL
- 12:05 *DNA functionalized magnetic nanoparticles encapsulated in silica/polymer shell for hydrological tracing*  
Anuvansh Sharma, NTNU
- 12:20 *Nanostructured conducting polymers for water treatment, metal recovery, and energy conversion and storage*  
Irina Chernyshova, Columbia University, New York

### **12:35 Lunch**

## **Session 7: Small, better, faster, stronger**

- 13:15 *New materials, new phases, and new functionalities on the nanoscale*  
Mikael Fogelström, Chalmers University of Technology
- 14:00 *Matter Waves and More*  
Bodil Holst, University of Bergen
- 14:30 *3D imaging of ferroelectric domain walls by FIB tomography*  
Erik Dobloug Roede, Dept of Materials Science and Engineering, NTNU
- 14:45 *Assembly of Van der Waals Heterostructures for high performance devices*  
Branson D. Belle, SINTEF INDUSTRY
- 15:00 *Black silicon fabrication and its applications*  
Kaiying Wang, University of South East Norway
- 15:30 **Coffee**

## **Session 8: Panel debate**

- 15:45 *What next for nano?*
- 16:30 **Coffee**

## **Session 9: Energy crisis - What energy crisis?**

- 16:40 *Precise and scalable nanomanufacturing of surfaces*  
Manish K. Tiwari, University College London
- 16:55 *Prediction of Absorption Spectrum Shifts in Dyes Adsorbed on Titania*  
Vishwesh Venkatraman, NTNU
- 17:10 *Synthesis and application of core-shell nanostructures of graphene-wrapped CdS nanoparticles and TiO<sub>2</sub> for photocatalytic H<sub>2</sub> generation*  
Muhammad Zubair, NTNU
- 17:25 *Ni-based nanoparticles as difunctional and efficient electrocatalysts for overall water electrolysis*  
Fatemeh Poureshghi, NTNU
- 17:40 *Nanocatalysis beyond Activity*  
De Chen, NTNU
- 18:05 **Closing**
- 19:00 **Dinner at the Quality Panorama Hotel**