Nordic Microscopy Society

SCANDEM 2016

JUNE 7–10

NTNU Trondheim

https://www.ntnu.edu/web/physics/scandem2016

Conference program

Welcome note

Dear Participants,

A warm welcome to all of you to NTNU and Trondheim at the start of the 67th SCANDEM 2016 conference. Our aim is to make an attractive conference for researchers, technicians and students involved microscopy in life sciences, solid state physics, material-, geological- and nano-sciences. We now have around 200 participants and there are 24 companies that will present their most recent technology in the commercial exhibition. The program, as you will see, includes 3 plenary lectures, 10 parallel sessions and a poster session covering material science and life science topics. All together more than 100 presentations! We are really happy about the quality of the scientific program and the many excellent invited speakers.

The conference is in the natural Science building (Realfagbygget) that is part of the Gløshaugen campus. Lectures, poster session, exhibition, coffee/tea breaks and lunches will be in a concentrated area. Several companies have offered training in practical workshops of their latest technical developments. We are also proud of offering laboratory visits to seven of NTNUs microscopy labs at Gløshaugen and at the Medical Faculty and Kavli Institute for Systems Neuroscience within walking distance.

So, all ingredients for a fruitful meeting are available. We are excited and are expecting an interesting and highly motivating meeting! Welcome to Trondheim!

Best wishes from the local organisers of SCANDEM 2016,

Randi Holmestad
Johannes van der Want
Hanna Gautun
Sigurd Wenner
Bjørn Soleim

Table of Contents

Front cover: Aerial photo of Trondheim. Photographer: Erik Børseth.

Conference information

Registration desk

The registration desk is situated on level U1 in Realfagbygget in the exhibition area (see map on page 6). This desk is open from Tuesday morning. Signing up for laboratory tours (page 11) can be done here.

Exhibition opening hours

Tuesday June 7th, 19:00–22:00 (Exhibition opening and Welcome party)

Wednesday June 8th, 08:30–18:30

Thursday June 9th, 08:30–18:00

Poster session

Posters should be on display from Wednesday morning to Friday lunch. The poster session takes place on Wednesday 16:45–18:30. Snacks will be served. Authors for odd numbered posters should be present at the posters from 16:45 to 17:30. Authors for even numbered posters should be present at the posters from 17:45 to 18:30.

Prizes for best poster and student talk

There will prizes handed out for the best poster and best student talk. These will be handed out Friday during lunch.

Name badges

Participants should wear the name badges during the conference. These will act as tickets to coffee and lunch. Access to the conference dinner is given on the back side of the badge.

Abstracts

The submitted abstracts for the talks and posters are available on a USB stick handed out during registration.

Wi-Fi/internet access

Internet access can be obtained at NTNU by either logging into Eduroam or using the guest network "ntnuguest".

Lunch

Wednesday lunch will be served in the exhibition area, Thursday and Friday at the Cafeteria, one floor up from the exhibition (see map on page 6). Coffee/tea is served in the exhibition area in the breaks between sessions.

Social program

Tuesday June 7th, 19:00–22:00: Welcome party/ exhibition opening, Realfagbygget.

Wednesday June 8th, 19:00: Organ Concert, Nidaros Cathedral (Nidarosdomen).

Thursday June 9th, 19:30: Conference dinner, Banksalen (City centre).

Workshops

Five workshops are organized on the Tuesday 7th of June. Se page 10 for details.

Laboratory visits

Seven laboratory tours are organized in the evening on Thursday 9th of June, for participants who want to see the microscopy labs at NTNU. Se page 11 for details. Registration at the registration desk!

Company presentations

13 out of the 24 companies in the commercial exhibition will give presentations on Wednesday 8th of June at 14:15.

SCANDEM general Assembly

The SCANDEM General Assembly will be held on Thursday 6th of June at 12:45 in R7. All members are welcome!

Organization

Chair	Randi Holmestad (Physics, NTNU)
Co-chair	Johannes van der Want (Medicine, NTNU)
Administrators	Hanna Gautun (NTNU NanoLab), Anita Myrseth (Atlantic MICE)
Web	Irene Aspli (Physics, NTNU)
Exhibition	Bjørn Gunnar Soleim (Physics, NTNU)
Abstracts	Sigurd Wenner (Physics, NTNU)
Session chairs	John Walmsley (SINTEF), Ton van Helvoort (Physics, NTNU), Magnus Lilledahl (Physics, NTNU), Catharina Davies (Physics, NTNU), Bjørn Stokke (Physics, NTNU), Pawel Sikorski (Physics, NTNU), Menno Witter (Medicine, NTNU), Trude Flo (Medicine, NTNU), Per Erik Vullum (SINTEF), Kay Gastinger (NTNU NanoLab), Suzanne McEnroe (Geology, NTNU), Nathan Church (Geology, NTNU), Ragnhild Sæterli (Physics, NTNU), Jostein Grepstad (Electronics, NTNU), Yanjun Li (Materials, NTNU)

Sponsors

The Research Council of Norway

(Programmes Nano2021 & FRIPROMED)

NanoNetwork

Norwegian PhD Network on Nanotechnology for Microsystems

TEM Gemini Centre

Nano@NTNU

... and all exhibiting companies!

Map of Trondheim

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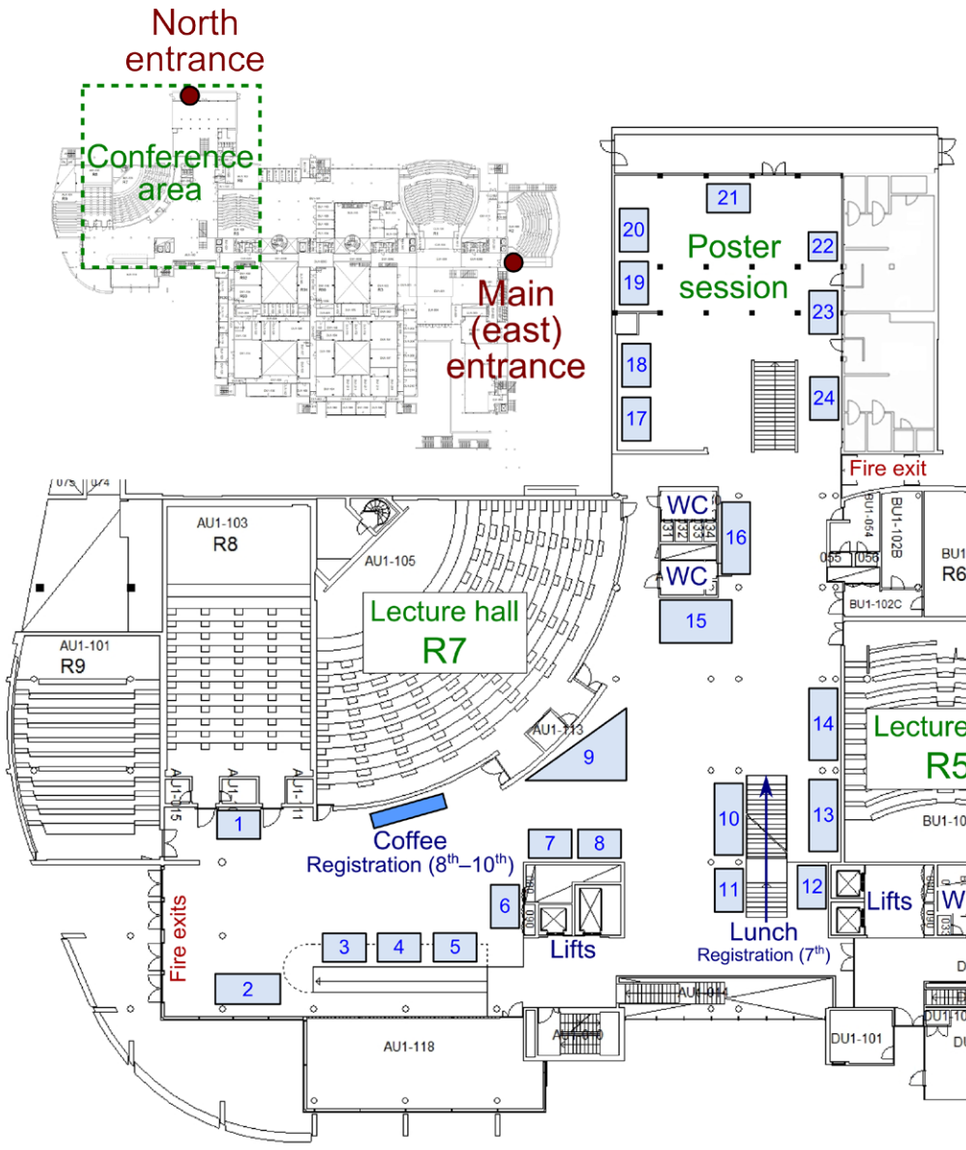
Conference venue

Gløshaugen campus, Building "Realfagbygget"
Floor U1 (below ground floor)
Booth numbers signify exhibitor (see list to the right)



Exhibitors

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10. BRUKER
11. EDAX — Smart Insight
12. NERLIENS MESZANSKY / Thermo SCIENTIFIC
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16. Low2High vacuum
17. Inter Instrument AS / Nikon
18. imina technologies
19. Micro to Nano — Innovative Microscopy Supplies
20. MICRONOVA AS
21. gammadata
22. LOT — QuantumDesign
23. ROWACO
24. SpectrumInstruments LTD.

Program overview

Tuesday June 7		Wednesday June 8			Thursday June 9			Friday June 10		
			Room R7	Room R5		Room R7	Room R5		Room R7	Room R5
Workshops: • Hyperspy workshop • 3D EM in biomedical sciences • In situ TEM workshop • EBSD meeting See page 10 for more information		08:30	Opening, Plenary session 1		08:30	Plenary session 2		08:30	Plenary session 3	
		09:30	Coffee		09:15	Coffee		09:15	Coffee	
		10:00	Instrumen-tation	Neuroscience	09:45	Nanomaterials	Ultra-microscopy	09:45	Data Handling and Analysis	Cellular Imaging
		12:00	Lunch, Exhibition area		11:45	Lunch, Cafeteria		11:45	Lunch and poster prize award, Cafeteria	
		13:00	Company presentations		12:45	General Assembly		12:45	End of program	
		14:15	Coffee		13:30	Functional Materials	Correlative Microscopy			
		14:45	Structural Materials	Geology	15:00	Coffee				
		16:45 –18:30	Poster session (page 24)		15:30	Functional Materials	Correlative Microscopy			
19:00 –22:00	Welcome party, Registration, Popular talk*	19:00	Organ concert, Nidaros Cathedral		16:30 –18:30	Lab visits (page 11)				
					19:30	Conference dinner, Banksalen				

For a detailed scientific program, see page 12.

Tuesday 20:30 –21:00

***Popular talk: Arne Olsen,** *University of Oslo*
The early years of electron microscopy in Norway

Workshops

The following 5 workshops will be held on Tuesday the 7th of June:

Microscopy data analysis with Python & HyperSpy

Time and place: Tuesday June 7, at 10–17, Realfagbygget NTNU.

Instructors:
- Francisco de la Peña, University of Cambridge
- Tomas Ostasevicius, University of Cambridge
- Magnus Nord, NTNU/University of Glasgow

Contact: Ton van Helvoort
Phone: +47 73593637
E-mail: a.helvoort@ntnu.no

3D volume electron microscopy in biomedical sciences

Time and place: Tuesday June 7, at 10-12, NTNU Øya, The laboratory center, Auditorium LA21.

Speakers:
- Professor Marite Rygg, NTNU
- Dr Eija Jokitalo, University of Helsinki
- Dr Moritz Helmstaedter, Max Planck
- Dr Wim Voorhout, FEI

Contact: Johannes Van der Want
Phone: +47 72573322
E-mail: johannes.want@ntnu.no

Interactive Workshop on Nanomanipulation and electrical probing in the SEM

Time and place: Tuesday June 7, at 14–18:30, Nanolab, NTNU (chemistry building 1).

Contact:Vincent Faivre
Phone: +41 225349027
E-mail: faivre@imina.ch

Contact: Karl Boche
Phone: +41 225349212
E-mail: boche@imina.ch

In-Situ TEM workshop

Time and place: Tuesday June 7, at 11–18, Realfagbygget NTNU.

Speakers:
- Per Olav Nergaard, BoRAS
- Prof. Jakob Wagner, Technical University of Denmark
- Prof. Per Persson, Linkoping University
- Prof. Antonius Helvoort, NTNU
- Dr. Marc Willinger, Max Planck

Contact: Per Olav Nergaard
Phone: +47 99617111
E-mail: per.olav.nergaard@boras.no

Electron backscatter diffraction meeting (EBSD)

Time and place: Tuesday June 7, at 09–17, Bergbygget, NTNU (lecture room B2, 3rd floor).

Speakers:
- Jarle Hjelen, NTNU
- Réne de Kloe, EDAX
- Bjørn E. Sørensen, NTNU

Contact: Yingda Yu
Phone: +47 98612605
E-mail: Yingda.Yu@ntnu.no

Laboratory visits

Since NTNU has a lot of well equipped labs, we want to use the opportunity to show you some of them, and organize lab tours of 7 different labs on **Thursday June 9, from 16:30 to 18:30.**

Registration for the tours will be at the conference registration desk. You can visit several labs in the order you wish, but you have to register in advance with no overlap.

The labs are at two main locations at Gløshaugen campus (where the conference is) and at Campus Øya (Faculty of Medicine/St.Olavs hospital). There is a 15 minutes walking trip to Øya. Meeting points will be organized in the conference area and announced later.

Tours at Gløshaugen

- **EM lab Materials Science**

SEM, EBSD, EPMA
Contact: Yingda Yu
Phone: +47 98612605
E-mail: yingda.yu@ntnu.no
Lab visits: 3 groups of 8 participants
Times: 16:30, 17:10, 17:50

- **NanoLab**

Cleanroom with processing (e.g. EBL) and characterization tools (FIBSEM, SEM)
Contact: Ken Roger Ervik
Phone: +47 73591489
E-mail: ken.roger.ervik@ntnu.no
Lab visits: 3 groups of 6 participants
Times: 16:30, 17:10, 17:50

- **TEM Gemini Centre / NORTEM Trondheim node**

3 TEMs for physical sciences
Contact: Ton van Helvoort
Phone: +47 73593637
E-mail: a.helvoort@ntnu.no
Lab visits: 4 groups of 5 participants
Times: 16:30, 17:00, 17:30, 18:00

- **Centre for Molecular Imaging at NT**

Multiphoton polarization microscopy, fluorescence lifetime imaging (FLIM), combined atomic force and widefield microscopy
Contact: Astrid Bjørkøy
Phone: +47 73593669
E-mail: astrid.bjorkoy@ntnu.no
Lab visits: 2 groups of 8 participants
Times: 16:30, 17:30

Tours at Øya

- **CMIC, Electron microscopy lab**

3D block face imaging (SEM) and TEM
Contact: Gunnar Kopstad
Phone: +47 72573272
E-mail: gunnar.kopstad@ntnu.no
Lab visits: 3 groups of 4 participants
Times: 16:30, 17:10, 17:50

- **CMIC, Advanced light microscopy lab, Superresolution microscope (STED)**

Superresolution demonstration of Leica SP8 STED 3X system
Contact: Bjørnar Sporsheim
Phone: +47 72836134
E-mail: bjornar.sporsheim@ntnu.no
Lab visits: 4 groups of 4 participants
Times: 16:30, 17:00, 17:30, 18:00

- **Kavli Institute for Systems Neuroscience**

Light sheet microscope and spatial light modulator system for optogenetic, two-photon setups
Contact: Emre Yaksi
E-mail: emre.yaksi@ntnu.no
Lab visit: 1 group of 10 participants
Time: 16:30

Wednesday, lecture hall **R7**

08:30 **Official opening, Randi Holmestad and Anne Borg**

08:45 **Plenary: Peter J. Peters,** *Maastricht University*
Beauty and Benefits of cryo-EM for research on nano machines
Chair: Johannes van der Want

09:30 Coffee

Materials Science – Instrumentation

Chair: John Walmsley and Ragnhild Sæterli

10:00 **Invited: Alice Bastos Fanta,** *Technical University of Denmark*
Application of Transmission Kikuchi Diffraction in SEM and Some Sample Preparation Challenges

10:30 **Aleksander Mosberg,** *NTNU*
In-Situ Electrical Probing of Nanowires on Focused Ion Beam Patterned Substrates

10:45 **Per Erik Vullum,** *SINTEF*
Electron Energy Loss Spectroscopy to determine electronic properties in solid materials

11:00 **Magnus Nord,** *University of Glasgow*
Advanced imaging with pixelated STEM detectors: 3D structure

11:15 **Daniel Phifer,** *FEI Company*
Site-specific 35-minute TEM-lamella preparation by FIB-SEM

11:30 **Hana Tesařová,** *TESCAN ORSAY HOLDING, a.s.*
Advantages of In-situ Testing

11:45 **Espen Bøjesen,** *Aarhus University*
When Electron Microscopy is not Enough - Unravelling the Chemistry of Nanoparticle Formation by In Situ Total X-ray Scattering

12:00 Lunch, Exhibition area

13:00 **Company presentations**
Short presentations in the following order: Gammadata Instrument, NordicNano Solutions, Imina Technologies, CAMECA, iLab Solutions, Nikon, Oxford Instruments, Rowaco, JEOL, Spectrum Instruments, EMSIS, Spectral solutions, Bruker.
Chair: Michael Andersson

Wednesday, lecture hall **R5**

08:30 (Opening and plenary in R7)

09:30 Coffee

Life science – Neuroscience

Chair: Menno Witter

10:00 **Invited: Moritz Helmstaedter,** *Max Planck Institute for Brain Research*
Cerebral Cortex Connectomics

10:30 **Menno Witter,** *NTNU*
Functional Architecture of Spatial Circuits in the Brain

11:00 **Jonathan Whitlock,** *NTNU*
Action planning and action observation in rodent parietal cortex

11:30 **Emre Yaksi,** *NTNU*
Sensory computations in zebrafish brain

12:00 Lunch, Exhibition area

13:00 (Company presentations in R7)

Wednesday, lecture hall **R7**

14:15 Coffee

Materials Science – Structural Materials

Chair: Randi Holmestad and Yanjun Li

14:45 **Invited: Stefan Zaeffrer,** *Max Planck Institute for Iron Research*
Electron channelling contrast imaging (ECCI): an amazing tool for observations of crystal lattice defects in bulk samples

15:15 **Christian Oen Paulsen,** *NTNU*
Use of Digital Image Correlation on Local Deformations in Pearlitic Steel During in situ Tensile Testing in Scanning Electron Microscope

15:30 **Corneliu Sârbu,** *National Institute of Materials Physics, Romania*
Crystallography and Nanoscale Composition Analysis of the Surface Layer (the Case) in IN-718 Superalloy Submitted to Surface Carburization in Low-Temperature (LT) Gas Atmosphere

15:45 **Invited: Kenji Matsuda,** *Toyama University*
The effect of additional elements on aging behavior in Al-Mg-Si/Ge alloys

16:15 **Eva Mørtsell,** *NTNU*
HAADF-STEM Analysis of Precipitates in Al-Mg-Si Alloys

16:30 **Emil Christiansen,** *NTNU*
Transmission Electron Microscopy of Precipitate Free Zones in Aluminium Alloys Subjected to Uniaxial Compression

16:45 –18:30 **Poster session, exhibition area** (poster list on page 24)

19:00 Organ Concert, Nidaros Cathedral

Wednesday, lecture hall **R5**

14:15 Coffee

Materials Science – Geology

Chair: Suzanne McEnroe and Nathan Church

14:45 **Invited: Falko Langenhorst,** *Friedrich-Schiller-University Jena*
Quantitative TEM microanalyses of minerals: principles and applications

15:15 **Rene de Kloe,** *EDAX*
EBSD Analysis of Natural Materials – Fossils, Meteorites, and Rocks

15:30 **Bjørn Eske Sørensen,** *NTNU*
Advantages of Offline EBSD on Geological Samples

15:45 **Invited: Peter Robinson,** *Geological Survey of Norway*
Exchange Bias in Minerals Related to Chemical-magnetic Structures at the Subnanometer Scale

16:15 **Suzanne McEnroe,** *NTNU*
Quenched and Annealed Nanostructures and a New Story About Self-Reversed Thermoremanent Magnetization

16:30 **Nathan Church,** *NTNU*
Electron Holography of Magnetite-Ilmenite Intergrowths Suggests Role of Interface Strain on Remanence

16:45 –18:30 **Poster session, exhibition area** (poster list on page 24)

19:00 Organ Concert, Nidaros Cathedral

Thursday, lecture hall **R7**

08:30 
Plenary: Paul Midgley, *Cambridge University*
Crystal Cartography: Orientation and Strain Mapping using Scanning Electron Diffraction
Chair: Ton van Helvoort

09:15 Coffee

Materials Science – Nanomaterials
Chair: Per Erik Vullum and Kay Gastinger

09:45 
Invited: Stephan Hofmann, *University of Cambridge*
In-situ Electron Microscopy for Controlling Integrated Crystal Growth of Advanced Nanomaterials

10:15 **Jan Rusz,** *Uppsala University*
Towards measuring magnetism with atomic resolution in a transmission electron microscope

10:30 **Antoine Dalod,** *NTNU*
In situ hydrothermal synthesis of surface functionalized titania nanoparticles

10:45 **Reza Zamani,** *Lund University*
Interfaces in Heterostructured GaSb-InAs Nanowires

11:00 **Per Persson,** *Linköping University*
Expanding and tailoring the two-dimensional family of MXenes

11:15 **Robert Boyd,** *Linköping University*
A Plasma Based Method for Nanomaterial Synthesis; Highlighting Challenges of Characterising Complex Structures.

11:30 **Gurvinder Singh,** *NTNU*
Designing multimetallic electrocatalytic nanoparticles with controlled composition and morphology

12:00 Lunch, Cafeteria

12:45 **Scandem General Assembly**

Thursday, lecture hall **R5**

08:30 (Plenary in R7)

09:15 Coffee

Life Science – Ultramicroscopy
Chair: Bjørn Stokke and Magnus Lilledahl

09:45 
Invited: Simon Scheuring, *French National Institute of Health and Medical Research*
High-Speed Atomic Force Microscopy: The dawn of dynamic structural biochemistry

10:15 
Invited: Julian Moger, *University of Exeter*
Label-free Chemically Specific Imaging In-Planta with Stimulated Raman Scattering Microscopy

10:45 **Kesara Anamthawat-Jónsson,** *University of Iceland*
Lymegrass Hybridization – When European Leymus arenarius Meets Its American Relative L. mollis

11:00 **Sindre H. Bjørnøy,** *NTNU*
Raman Microspectroscopy Characterization of Calcium Phosphate Minerals Within an Alginate Hydrogel Network

11:15 **Varpu Marjomäki,** *University of Jyväskylä*
Site-specific Probes for Enteroviruses for detailed Imaging in Light and Electron microscopy

11:30 **Habib Baghirov,** *NTNU*
Poly(isohexyl cyanoacrylate) Nanoparticle Transport Across the Blood-Brain Barrier in a Melanoma Metastasis Model Using Focused Ultrasound

12:00 Lunch, Cafeteria

12:45 (General Assembly in R7)

Thursday, lecture hall **R7**

Materials Science – Functional Materials

Chair: Ton van Helvoort and Jostein Grepstad

13:30  **Invited: Erik Folven,** *NTNU*
Probing tailored magnetic domain structures in nanomagnets using x-ray spectromicroscopy

14:00 **Thomas Thersleff,** *Uppsala University*
Magnetic measurements in the TEM using STEM-EMCD

14:15 **Julie Stene Nilsen,** *NTNU*
Characterization of Pd/Ge/Au contacts on GaAs Nanowires

14:30 **Magnus Garbrecht,** *Linköping University*
HRTEM Exploration and Development of Metal/Semiconductor Superlattice Thin Films

14:45 **Anette Eleonora Gunnæs,** *University of Oslo*
Study of Cu_2O/ZnO Heterojunction Interfaces at the Atomic Scale

15:00 Coffee

15:30 **Hannah Nerl,** *Trinity College Dublin*
Exciton and Plasmon Mapping at the Nanoscale

15:45 **Laura Bocher,** *Laboratory of Solid State Physics, Paris*
Resolving the atomic and electronic structures of functional nanostructured oxides by advanced electron spectromicroscopy

16:00  **Invited: Quentin Ramasse,** *SuperSTEM Laboratory*
High spatial and energy resolution STEM-EELS of energy harvesting materials

16:30 –18:30 **Lab visits** (see page 11)

19:30 Conference dinner, Banksalen

Thursday, lecture hall **R5**

Life Science – Correlative Microscopy

Chair: Johannes van der Want

13:30  **Invited: Andreas Brech,** *Oslo University Hospital*
Cytokinesis, endosomal traffic and autophagy visualized by Correlative Light and Electron microscopy

14:00 **Oleg Shupliakov,** *Karolinska Institutet*
Actin-dependent mechanisms during synaptic vesicle fusion link exo- and endocytosis in synapses

14:30 **Marianne Beckwith,** *NTNU*
Intracellular Life in Nanoscale 3D: Correlative Imaging by Light Microscopy and FIB/SEM tomography

14:50 **Nina Berggaard,** *NTNU*
The Development and Microcircuitry of Parvalbumin Positive Interneurons in Layer II of the Rat Medial Entorhinal Cortex

15:10 Coffee

15:30  **Invited: Jerome Swinny,** *University of Portsmouth*
Stress-induced Expression Plasticity of GABAAR subunits Within Serotonergic and Noradrenergic Brain Centers of the Mouse

16:30 –18:30 **Lab visits** (see page 11)

19:30 Conference dinner, Banksalen

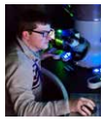
Friday, lecture hall **R7**

08:30 
Plenary: Sara Bals, *EMAT – University of Antwerp*
High Resolution Electron Tomography: Colouring Atoms in 3 Dimensions
Chair: Randi Holmestad

09:15 Coffee

Materials Science – Data Handling and Analysis

Chair: Ragnhild Sæterli and John Walmsley

09:45 
Invited: Lewys Jones, *University of Oxford*
University Nano-scale strain measurements from high-precision ADF STEM

10:15 **Sigurd Wenner,** *NTNU*
Misfit of Coherent Precipitate Phases in Al Alloys Measured by Scanning Transmission Electron Microscopy

10:30 **Tomas Ostaševičius,** *University of Cambridge*
SAMFire – a smart adaptive fitting algorithm for multi-dimensional microscopy

10:45 **Jakob Spiegelberg,** *Uppsala University*
Robust and Fast Analysis of Hyperspectral Data using Geometric Extraction Methods

11:00 **Duncan Johnstone,** *University of Cambridge*
Crystallographic mapping in engineering alloys by scanning precession electron diffraction

11:15 **Jonas Sunde,** *NTNU*
Phase Mapping of 2xxx-Series Aluminium Alloys by Scanning Precession Electron Diffraction

11:45 Lunch and poster prize award, Cafeteria

12:45 End of program

Friday, lecture hall **R5**

08:30 (Plenary in R7)

09:15 Coffee

Life Science – Cellular Imaging

Chair: Trude Flo

09:45 
Invited: Lucy Collinson, *Francis Crick Institute, London*
Moving towards a single microscope for 3D light microscopy and 3D electron microscopy of cells and tissues

10:15 
Invited: Renaud Poincloux, *The National Center for Scientific Research, Tolouse*
Podosomes: mechanosensory protrusive structures involved in macrophage 3D migration

10:45 **Alexandre Gidon,** *NTNU*
Mycobacterium avium interfering with phagosome maturation evades an antibacterial program in human primary macrophages

11:05 **Maria Baumgarten,** *Lund University*
Electron microscopy study of collagen VI host defense peptides in vivo

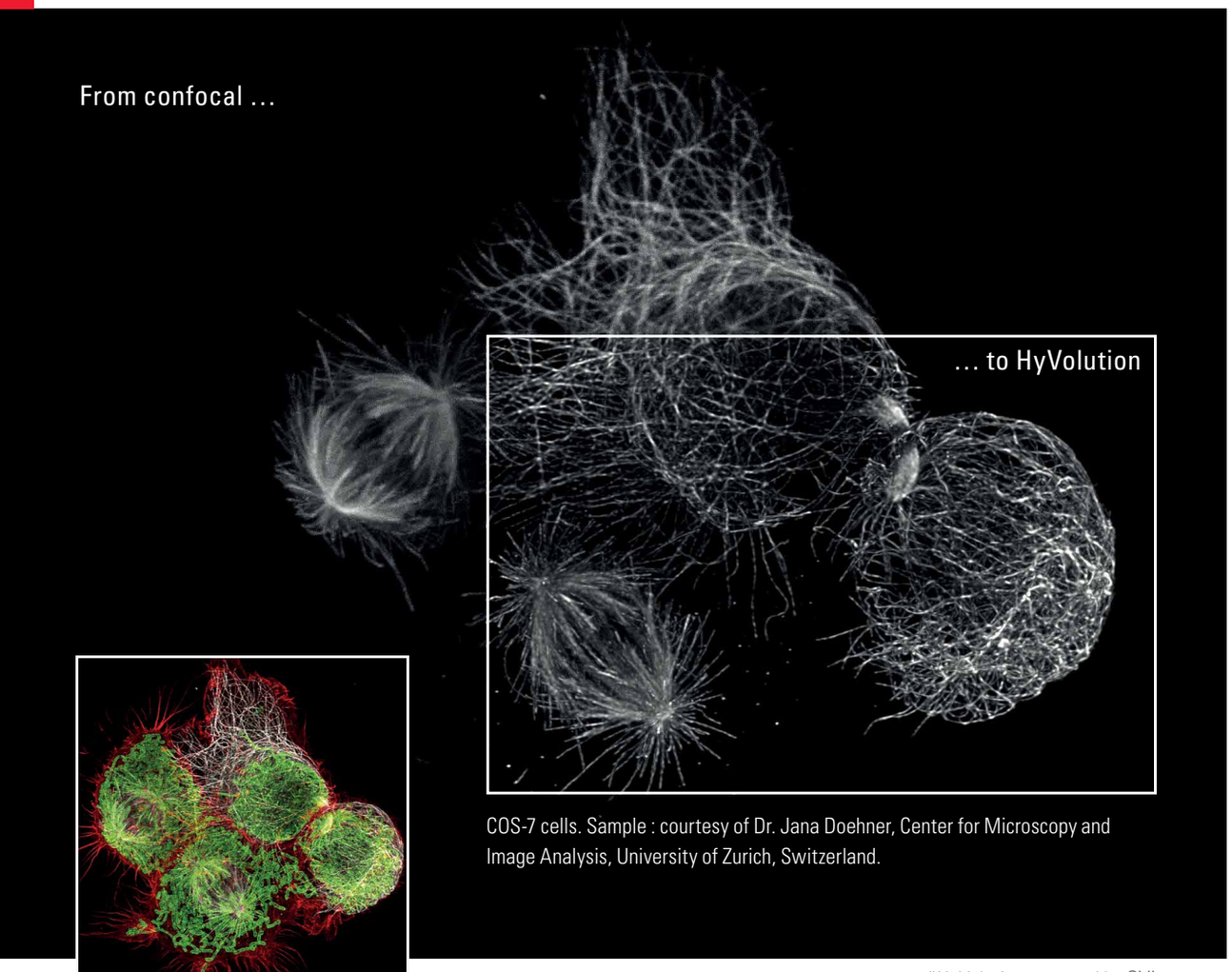
11:25 **Jopi J. W. Mikkonen,** *University of Eastern Finland*
The Lacunar-Canalicular Structure of Mandible Studied by Scanning Electron Microscopy

11:45 Lunch and poster prize award, Cafeteria

12:45 End of program

From Eye to Insight

Leica MICROSYSTEMS



COS-7 cells. Sample : courtesy of Dr. Jana Doehner, Center for Microscopy and Image Analysis, University of Zurich, Switzerland.

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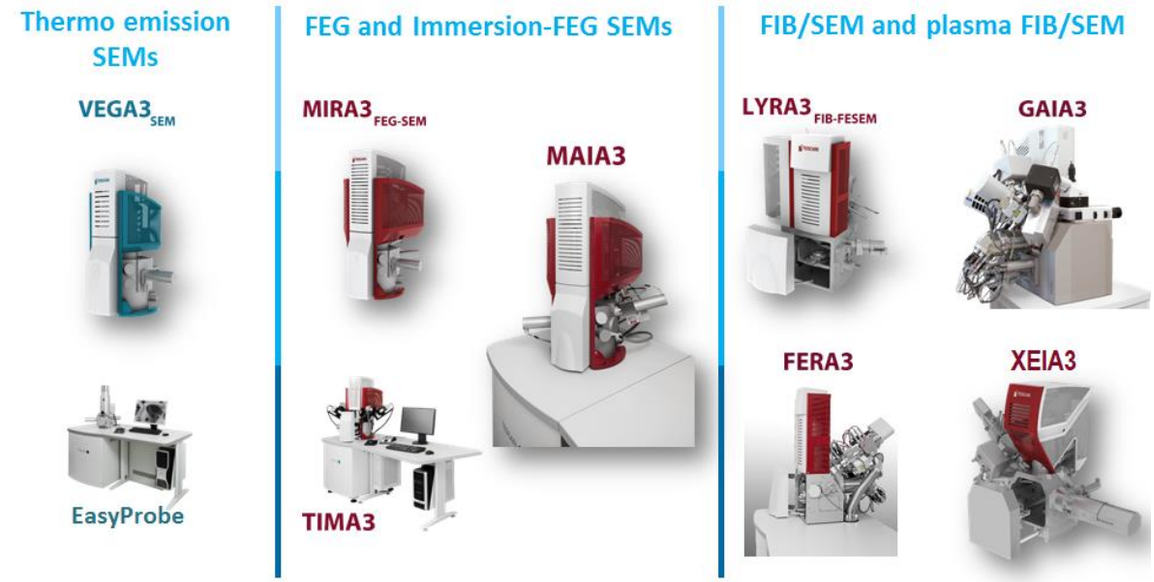

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Poster session, Wednesday

Authors should be present at their posters from 16:45 to 17:30 for odd numbered posters, and from 17:45 to 18:30 for even-numbered posters.

1 FIB-TEM Characterization of SiGeSn Quantum Well Photodiodes
Alessandro Benedetti, *University of Vigo, Spain*

2 The Carbon Nanotube Loss Spectrum Investigated at High Energy Resolution in Real and Momentum Space
Fredrik S. Hage, *SuperSTEM Laboratory*

3 Processing AFM data of porous anodic alumina with varying degrees of structure regularity
Ekaterina Muratova, *Saint-Petersburg Electrotechnical University*

4 Nanoannotator – Novel Image Analysis Method for Nanoparticle Size Analysis
Minnamari Vippola, *Tampere University of Technology*

5 Analysis of Ni_xSi_y-Si Nanowires for Next Generation Electronics
Markus Löffler, *Technische Universität Dresden*

6 On the Inside of a Philips EM 400T Transmission Electron Microscope
Bjørn Gunnar Soleim, *NTNU*

7 Analysis at High Lateral Resolution of Ceramic and Refractory Materials with the CAMECA SXFIVE FE
Ian Holton, *Acutance Scientific Ltd.*

8 ζ-factor Tilt Dependency for Improved Quantitative Microanalysis
Andreas Garmannslund, *NTNU*

9 Polychromatic synchrotron radiation x-ray microscopy
Ken Vidar Falch, *NTNU*

10 Compound Electrostatic-magnetic SEM Enables Unprecedented Contrast Filtering at Low Voltages
Daniel Phifer, *FEI Company*

11 SEM and FIB trends – no easy systems
Stefan Rosenberg, *NordicNano Solutions AB*

12 Effect of Sample Preparation on EBSD Quantification of Retained Austenite in Supermartensitic Stainless Steel
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13 EBSD Characterization of Sigma Phase in SDSS by ROI Extraction and Optimization of Hough Parameters
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15 Eu Modification of Al-Si Alloys Studied at the Atomic Scale
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17 Crystallization "in Situ" of Amorphous Films, Deposited with Laser Sputtering of Zr in Oxygen Atmosphere
Aleksandr Bagmut, *Kharkiv Polytechnic Institute, Ukraine*

18 The relative density changes at phase transition in thin solid films according to electron microscopic data
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19 Advanced TEM Studies of High Efficiency Quantum Dot Intermediate Band Solar Cells
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20 Electron Microscopic Characterization of Thermally Sprayed Cr_3C_2-37WC-18NiCoCrFe Coating
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21 Characterization of $BaTiO_3/La_{0.7}Sr_{0.3}MnO_3/SrTiO_3(111)$ Thin Film Systems
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22 TEM spectroscopy on high efficiency abundant earth thin film solar cells
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23 Chemical and Structural Investigation of Grain Boundaries in Y-Doped $BaZrO_3$
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24 Transmission electron microscopy characterization of Fe:ZnS
Per Erik Vullum, *SINTEF*

25 Tracking Electronic Pathways in Energy Materials by Low Voltage Scanning Electron Microscopy
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26 Detection of oxygen sub-lattice ordering in A-site deficient perovskites through monochromated core-loss EELS mapping
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27 Space charge layers in interfaces of BZY investigated by inline electron holography
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28 Study of Ga and N implanted ZnO Alloys at the Atomic Scale
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29 Goat hairs from a Corded Ware Burial, Finland
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30 From Microscopy to Micromagnetic Modeling of Oxy-Exsolved Magnetite Nanoparticles from Young Icelandic Basalts
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31 Focused ion beam-transmission electron microscopy of extracellular stalks produced by iron-oxidizing bacteria
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32 Co-localized AFM – optical hyperspectral imaging of amyloid Aβ 40 maturation
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33 Mucin MUC1 in human oral mucosal epithelium
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34 Microenvironment and Ultrastructure of Cervical Carcinoma Xenografts
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35 Second Harmonic Generation Microscopy of the Immature Articular Cartilage
Andreas Finnøy, *NTNU*

36 Luxury of Recent Past – Ethnographic Nettle Fabrics
Jenni Suomela, *University of Helsinki*

37 Automated Polarization Second Harmonic Generation
Elisabeth Romijn, *NTNU*

38 Development of parvalbumin-related microcircuitry in layer II of rat medial entorhinal cortex
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39 Dynamic Process of Nanoparticles Investigated by ETEM
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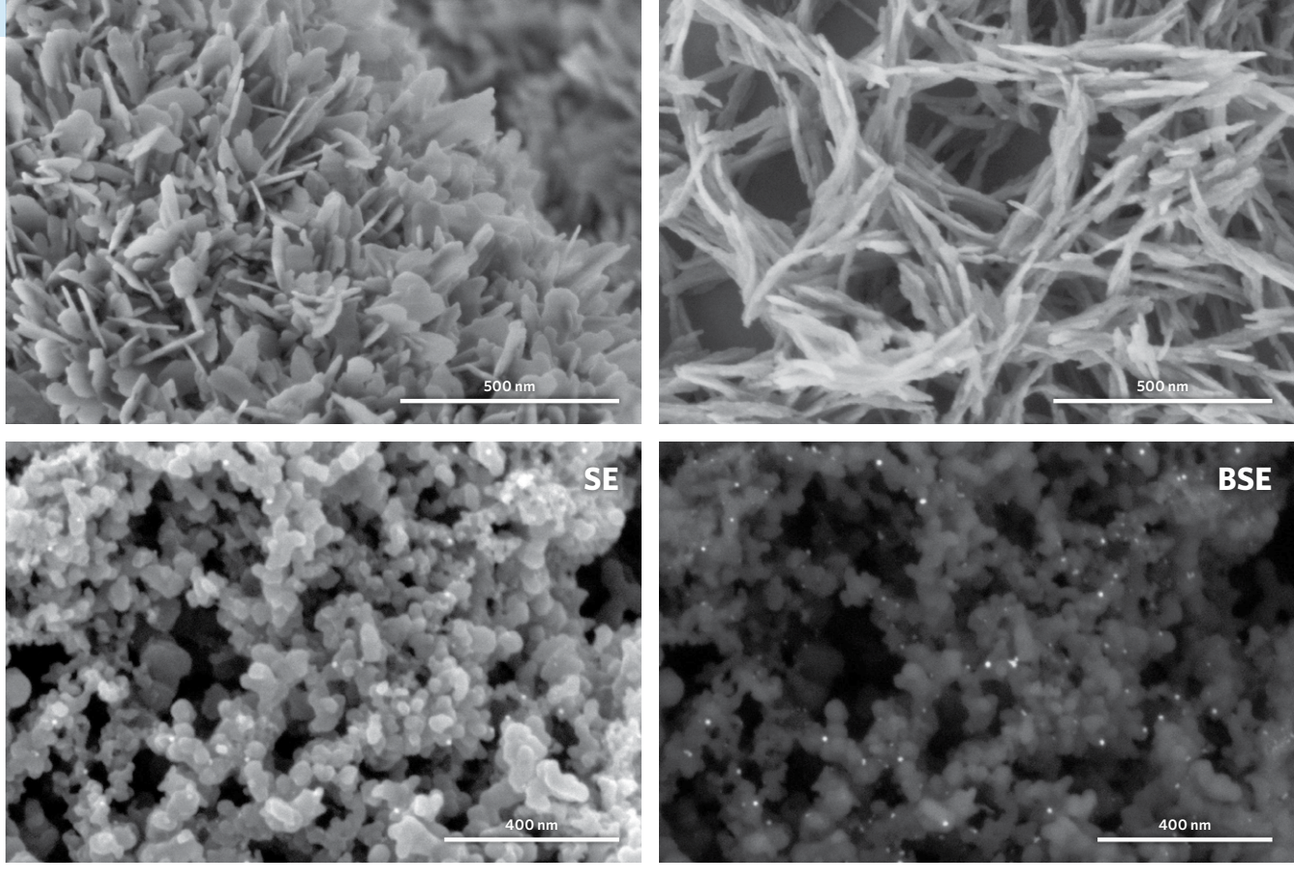

Top left, *Hydroxyapatite crystals.* Sample courtesy of Devin Wu, FEI China and Shanghai Institute of Ceramics. **Top right. *Silica coated nanocellulose fibers.*** Sample courtesy of Dr. M.C.D. Mourad, TNO Eindhoven. **Bottom, *Pd nanoparticles in CeO2 matrix.*** Sample courtesy of Dr. Alessandro Lavacchi, CNR ICCOM.

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Back cover: Scanning transmission electron microscopy image of quantum dots in GaAs, Maryam Vatanparast.