



SMART Lighthouse Summer School 2022

28th of June – 2nd of July



Program

Tuesday, June 28

10:00-12:00	Arrival at Sandbjerg Estate & Poster Placement
12:00-13:00	Lunch
13:00-13:25	Bo Brummerstedt Iversen, Aarhus University <i>Welcome</i>
13:25-14:10	Mogens Christensen, Aarhus University <i>Introduction to Neutron Scattering</i>
14:10-14:55	Paul Henry, ISIS Neutron and Muon Source (via Zoom) <i>What can the ISIS neutron source contribute to your research?</i>
14:55-15:15	Coffee break
15:15-16:00	Werner Schweika, European Spallation Source (via Zoom) <i>Outlook to neutron diffraction at the European Spallation Source</i>
16:00-16:45	Henrik Jacobsen, Copenhagen University <i>Introduction to inelastic neutron scattering</i>
16:45-17:00	Coffee break
17:00-17:40	Member updates: <ul style="list-style-type: none">- Anja Mudring, Aarhus University <i>Complex magnetic structures elucidated by neutron diffraction</i>- Dorthe Ravnsbæk, Aarhus University <i>Understanding charge-discharge behavior in ion batteries at the atomic scale</i>
18:00-19:00	Dinner
19:00-21:00	Poster session

Wednesday, June 29

08:00-09:00	Breakfast
09:00-10:00	Member updates: <ul style="list-style-type: none">- Shuai Wei, Aarhus University <i>Tailorable local atomic motion in phase-change materials enables the tuning of crystallization behaviors</i>- Morten Madsen, University of Southern Denmark



	<p><i>Metal oxide interfaces in scalable thin film photovoltaics</i></p> <ul style="list-style-type: none"> - Poul Norby, Danish Technical University <p><i>In situ diffraction studies using high energy synchrotron X-ray and neutron radiation</i></p>
10:00-10:30	Coffee break
10:30-11:15	<p>Bjørk Hammer, Aarhus University</p> <p><i>Introduction to machine learning in atomistic simulations</i></p>
11:15-12:00	<p>Kirsten M. Ø. Jensen, Copenhagen University</p> <p><i>Methods and tools for Pair Distribution Function analysis of disordered and nanoscale materials</i></p>
12:00-14:30	Lunch break (Lunch 12:00-13:00)
14:30-15:15	<p>Henning Friis Poulsen, Danish Technical University (via Zoom)</p> <p><i>Introduction to Tomography and X-ray Imaging</i></p>
15:15-16:00	<p>Henrik Birkedal, Aarhus Universitet</p> <p><i>Multi-length-scale and multimodal tomography</i></p>
16:00-18:00	Afternoon break
18:00-19:00	Dinner
19:30-21:00	<p>Industrial session</p> <p><i>Mediators for industrial use of neutron and synchrotron facilities</i></p> <ul style="list-style-type: none"> - Veronica Lattanzi, DTI - Henrik Lindeløv, Force

Thursday, June 30

08:00-09:00	Breakfast
09:00-09:45	<p>Mads Ry Jørgensen, MAXIV & Aarhus University</p> <p><i>DanMAX – the first experiments</i></p>
09:45-10:30	<p>Maarten Gøsten, Aarhus University</p> <p><i>Density Functional Theory (and beyond) in materials science: a pedagogical introduction</i></p>
10:30-10:45	Coffee break
10:45-11:15	Martin Alm, Biomedics
11:15-12:00	Gerd Schluckebier, Novo Nordisk
12:00-14:30	Lunch break (Lunch 12:00-13:00)
14:30-15:10	<p>Member updates:</p> <ul style="list-style-type: none"> - Bo B. Iversen, Aarhus University <i>Disorder in Crystals</i> - Torben R. Jensen, Aarhus University <i>Neutrons for hydrogen storage and battery materials</i>
15:10-15:40	<p>Martin Bondesgaard, Aarhus University</p> <p><i>General Solvothermal Synthesis Method for Complete Solubility Range of Bimetallic and High-Entropy Alloy Nanocatalysts</i></p>
15:40-16:10	<p>Martin Karlsen, University of Southern Denmark</p> <p><i>Total scattering and pair distribution function studies of TiO₂-bronze nanocrystals as electrodes in Li-ion batteries</i></p>
16:10-16:30	Coffee break

16:30-17:00	Baiyu Wang, University of Copenhagen <i>Size- and phase-control of intermetallic PdIn and PdGa nanoparticles</i>
17:00-17:30	Hannah Hedegaard Nielsen, Aarhus University <i>Experimental and Theoretical Charge Density Study of a Four-coordinated Co(II)-based Molecular Magnet</i>
18:30 –	Conference dinner

Friday, July 1

8:00-09:00	Breakfast
09:00-09:45	Jill Miwa, Aarhus University <i>Quantum materials for advancing quantum technologies</i>
09:45-10:30	Morten Smedskjær, Aalborg University <i>A Year Made of Glass</i>
10:30-10:45	Coffee break
10:45-11:30	Paul Attfield, University of Edinburgh <i>Powder neutron diffraction studies of perovskite materials</i>
11:30-12:15	Anders Bjorholm Dahl, Technical University of Denmark <i>Quantitative Volumetric Imaging</i>
12:15-14:30	Lunch break (Lunch 12:00-13:00)
14:30-15:15	Nina Lock, Aarhus University <i>XAFS studies of catalyst materials</i>
15:15-15:45	Zhaozong Sun, Aarhus University <i>A monolayer cobalt-doped carbon nitride catalyst on Au(111): atomic insights into reactivity for oxygen evolution reaction</i>
15:45-16:15	Coffee break
16:15-16:45	Rebecca Pittkowski, University of Copenhagen <i>Understanding how high entropy alloy particles form: in-situ study using coupled X-ray diffraction/ absorption spectroscopy</i>
16:45-17:15	Morten Johansen, Aarhus University <i>Electrochemical Driven Disorder of Monoclinic Distorted VO₂ as Cathode in Li-ion Batteries</i>
18:00-19:00	Dinner

Saturday, July 2

08:00-09:00	Breakfast & Check out (BEFORE 9 AM)
09:00-09:30	Adrian Sanz Arjona, University of Copenhagen <i>Hydrothermal Injection for Phase-Controlled CaCO₃ Synthesis</i>
09:30-10:00	Thomas Bjørn Egede Grønbech, Aarhus University <i>Superexchange mechanism in M(II) formate dihydrate series and charge density study of the Co(II) formate dihydrate</i>
10:00-10:30	Coffee break
10:30-11:00	Narges Amini, Aarhus University <i>Probing the structural relaxations in amorphous Ge₁₅Te₈₅ using synchrotron and ultrafast X-ray photon-correlation spectroscopy</i>



11:00-11:30	Chun Yuen Ho, University of Southern Denmark <i>Controlling electrical and optical properties of wurtzite $Cd_xZn_{1-x}O$ with high Cd contents via native defects manipulation by low-temperature annealing</i>
11:30-11:35	Dorthe Ravnsbæk, Aarhus University <i>Concluding remarks</i>
11:35-13:00	Lunch & Departure from Sandbjerg Estate