ANDY SODE ANKER, PhD

Principal Investigator, Research Fellow

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I have recently been awarded a 4 000 000 DKK (~ £500 000) grant to pursue an academic career in the interface of materials chemistry, machine learning and robotics. I will as principal investigator build a self-driving laboratory for controlled synthesis of inorganic nanomaterials.

CURRENT POSITIONS

- Visiting Postdoctoral Fellow, Department of Chemistry, University of Oxford, England   Jan 2024 –

- Postdoctoral Fellow, Department of Energy, Danish Technical University, Denmark   Dec 2023 –

PREVIOUS POSITIONS

- Postdoc, Department of Chemistry, University of Copenhagen, Denmark   2023

- PhD, Department of Chemistry, University of Copenhagen, Denmark   2018 – 2023

- Visiting Researcher, Rutherford Appleton Laboratory, England   2021 – 2022

EDUCATION

University of Copenhagen, Denmark, supervision: Kirsten M. Ø. Jensen

- PhD in Chemistry   2018 – 2023
    - Dissertation: "Towards Automated Structure Analysis of Nanoparticles"
- MSc in Nanoscience   2018 – 2021
- BSc in Nanoscience   2015 – 2018

PUBLICATION METRICS (ORCID: 0000-0002-7403-6642) (Google Scholar: bit.ly/AndyGoogleScholar)

- Authored 20+ peer-reviewed papers in chemistry and machine learning journals/conferences

- 1st author of 9 peer-reviewed papers

- Corresponding author of 2 peer-reviewed papers

SELECTED PUBLICATIONS

- *Machine learning for analysis of experimental spectroscopy and scattering data in materials chemistry*, **A. S. Anker**, et al., Chemical Science   2023

- *Using generative adversarial networks to match experimental and simulated inelastic neutron scattering data*, **A. S. Anker**, et al., Digital Discovery **(Front cover)**   2023

- *DeepStruc: Towards structure solution from pair distribution function data using deep generative models*, **A. S. Anker** & E. T. S. Kjær, et al., Digital Discovery **(Front cover)**+AI4MAT NeurIPS   2022

- *Extracting Structural Motifs from Pair Distribution Function Data of Nanostructures using Explainable Machine Learning*, **A. S. Anker**, et al., npj Computational Materials + AI4MAT NeurIPS **(MAX IV annual report highlight)**   2022

- *Structural Changes during the Growth of Atomically Precise Metal Oxido Nanoclusters from Combined Pair Distribution Function and Small-Angle X-ray Scattering Analysis*, **A. S. Anker**, et al., Angewandte Chemie **(Back   cover)**   2021

RECENT FUNDING

- 4 000 000 DKK   Postdoctoral Fellowship from Novo Nordisk Foundation   2023

RECENT AWARDS AND HONORS

- Forbes 30 Under 30 Europe in the Science and Healthcare category   2024

PRESENTATIONS

<u>1 invited keynote talk</u>

- *"Generative machine learning for scattering and spectroscopy data analysis"*, Machine Learning Conference for X-Ray and Neutron-Based Experiments, *Garching, Germany*   *2024*

<u>5 invited talks</u>

- *"Machine learning for analysis of experimental scattering data in materials chemistry"*, Chemical Compound Space Conference, *Heidelberg, Germany*   *2024*

- *"Machine learning for analysis of experimental scattering data in materials chemistry"*, Conference: Machine Learning Modalities for Materials Science, *Ljubljana, Slovenia*   *2024*

- *"AI in Science: Transforming Communication, Data Analysis, and Laboratory Practices"*, *Seminar: DTU NanoLab, Copenhagen, Denmark*   *2024*

- "*Towards Automated Structure Analysis of Nanoparticles*", Seminar: Materials Innovation Factory, Liverpool, England   2023

- "Using Generative Adversarial Networks to match experimental and simulated inelastic neutron scattering data", Seminar: ESS DMSC, Copenhagen, Denmark   2022

<u>9 contributed talks</u> to summer schools, seminars, national- and international conferences

<u>22 contributed posters</u> summer schools, national- and international conferences

BEAMTIMES   20+ scattering and spectroscopy experiments at international radiation facilities

TEACHING AND OUTREACH

- Paper in the danish popular science journal - <u>Aktuel Naturvidenskab</u>

- Twitter takeover (@RealSci_Nano) and outreach video (<u>https://youtu.be/PywCje9_YF4</u>)

- Co-supervised 2 MSc and 4 BSc students at Department of Chemistry, University of Copenhagen

- Teaching assistant for 3 chemistry courses at Department of Chemistry, University of Copenhagen

- Student assistant at Nano-Science Center & Skoletjenesten, University of Copenhagen 2016 – 2018

- Teaching qualification course, Department of Science Education, University of Copenhagen, 3ECTS

- Guest lecture "Applied Mathematics for Chemists"   2023

REVIEW EXPERIENCE

- Reviewed 16 papers in leading chemistry and machine learning journals/conferences