ANDY SODE ANKER, PhD

Principal Investigator, Research Fellow

Department of Energy, Technical University of Denmark

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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
  Supervisor: Associate Professor Kirsten Marie Ørnsbjerg Jensen
  Dissertation: "Towards Automated Structure Analysis of Nanoparticles"
- Visiting Researcher, Rutherford Appleton Laboratory, England — 2021 – 2022
  Mentor: Sr. Lecturer Keith T. Butler

EDUCATION

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

- PhD in Chemistry — 2018 – 2023
- 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 leading 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

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

RECENT AWARDS AND HONORS

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

PRESENTATIONS

1 invited keynote talk:

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

5 invited talks:

- *"TBA"*, Chemical Compound Space Conference, *Heidelberg, Germany* *2024*
- *"TBA"*, 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 Data Management and Software Centre, Copenhagen, Denmark 2022

9 contributed talks to summer schools, seminars, national- and international conferences
22 contributed posters 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 - Aktuel Naturvidenskab
- Twitter takeover (@RealSci_Nano) and outreach video (https://youtu.be/PywCje9_YF4)
- Co-supervised 2 MSc and 4 BSc students, Department of Chemistry, University of Copenhagen
- Teaching assistant for 3 chemistry courses, 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


github.com/AndySAnker

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