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Bio

BIO

Since July 2023: Postdoc.Mobility Fellow of Swiss National Science Foundation (SNSF)

April 2022 - June 2023: Postdoc Fellow of German National Academy of Sciences Leopoldina

STANFORD ADVISORS

- Thomas Jaramillo, Postdoctoral Faculty Sponsor
- Thomas Jaramillo, Postdoctoral Research Mentor

Publications

PUBLICATIONS

- **Physical and Chemical Stability of Nanoparticles in Ferrofluid Before and After Impregnation: Implications for Magnetic Pore Fabric Studies** *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS*
Biedermann, A. R., Mazurek, M., Schroder, J., Arenz, M.
2023; 24 (11)
- **Mechanistic Insights into Aldehyde Production from Electrochemical CO₂ Reduction on CuAg Alloy via Operando X-ray Measurements** *ACS CATALYSIS*
Qiao, Y., Kastlunger, G., Davis, R. C., Rodriguez, C., Vishart, A., Deng, W., Xu, Q., Li, S., Benedek, P., Chen, J., Schroder, J., Perryman, J., Lee, et al
2023: 9379-9391
- **Tracking the Dynamics of a Ag-MnO_x Oxygen Reduction Catalyst Using In Situ and Operando X-ray Absorption Near-Edge Spectroscopy** *ACS ENERGY LETTERS*
Schroder, J., Zamora Zeledon, J. A., Kamat, G. A., Kreider, M. E., Wei, L., Mule, A. S., Torres, A., Yap, K., Sokaras, D., Gallo, A., Stevens, M., Jaramillo, T. F.
2023
- **Influence of Temperature on the Performance of Carbon- and ATO-supported Oxygen Evolution Reaction Catalysts in a Gas Diffusion Electrode Setup.** *ACS catalysis*
Bornet, A., Pittkowski, R., Nielsen, T. M., Berner, E., Maletzko, A., Schroder, J., Quinson, J., Melke, J., Jensen, K. M., Arenz, M.
2023; 13 (11): 7568-7577
- **Chemical Insights into the Formation of Colloidal Iridium Nanoparticles from In Situ X-ray Total Scattering: Influence of Precursors and Cations on the Reaction Pathway.** *Journal of the American Chemical Society*
Mathiesen, J. K., Quinson, J., Blaseio, S., Kjar, E. T., Dworzak, A., Cooper, S. R., Pedersen, J. K., Wang, B., Bizzotto, F., Schroder, J., Kinnibrugh, T. L., Simonsen, S. B., Theil Kuhn, et al
2023
- **Investigating the Particle Growth in Bimodal Pt/C Catalysts by In-Situ Small-Angle X-ray Scattering: Challenges in the Evaluation of Stress Test Protocol-Dependent Degradation Mechanisms** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
Schroeder, J., Pittkowski, R. K., Du, J., Kirkensgaard, J. K., Arenz, M.
2022; 169 (10)

- **Nanocomposite Concept for Electrochemical In Situ Preparation of Pt-Au Alloy Nanoparticles for Formic Acid Oxidation** *JACS AU*
Du, J., Quinson, J., Zhang, D., Wang, B., Wiberg, G. H., Pittkowsky, R. K., Schroeder, J., Simonsen, S. B., Kirkensgaard, J. K., Li, Y., Reichenberger, S., Barcikowski, S., Jensen, et al
2022; 2 (7): 1757-1768
- **Tracking the Catalyst Layer Depth-Dependent Electrochemical Degradation of a Bimodal Pt/C Fuel Cell Catalyst: A Combined Operando Small- and Wide-Angle X-ray Scattering Study** *ACS CATALYSIS*
Schroeder, J., Pittkowsky, R. K., Martens, I., Chattot, R., Drnec, J., Quinson, J., Kirkensgaard, J. K., Arenz, M.
2022; 12 (3): 2077-2085
- **Anion Dependent Particle Size Control of Platinum Nanoparticles Synthesized in Ethylene Glycol** *NANOMATERIALS*
Schroeder, J., Neumann, S., Quinson, J., Arenz, M., Kunz, S.
2021; 11 (8)
- **Surfactant-free colloidal strategies for highly dispersed and active supported IrO₂ catalysts: Synthesis and performance evaluation for the oxygen evolution reaction** *JOURNAL OF CATALYSIS*
Bizzotto, F., Quinson, J., Schroder, J., Zana, A., Arenz, M.
2021; 401: 54-62
- **Operando SAXS study of a Pt/C fuel cell catalyst with an X-ray laboratory source** *JOURNAL OF PHYSICS D-APPLIED PHYSICS*
Schroeder, J., Quinson, J., Kirkensgaard, J. K., Arenz, M.
2021; 54 (29)
- **Insights from In Situ Studies on the Early Stages of Platinum Nanoparticle Formation** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
Mathiesen, J. K., Quinson, J., Dworzak, A., Vosch, T., Juelsholt, M., Kjaer, E. S., Schroeder, J., Kirkensgaard, J. K., Oezaslan, M., Arenz, M., Jensen, K. O.
2021; 12 (12): 3224-3231
- **The Gas Diffusion Electrode Setup as Straightforward Testing Device for Proton Exchange Membrane Water Electrolyzer Catalysts** *JACS AU*
Schroder, J., Mints, V. A., Bornet, A., Berner, E., Tovini, M., Quinson, J., Wiberg, G. H., Bizzotto, F., El-Sayed, H. A., Arenz, M.
2021; 1 (3): 247-251
- **Carbon-Supported Platinum Electrocatalysts Probed in a Gas Diffusion Setup with Alkaline Environment: How Particle Size and Mesoscopic Environment Influence the Degradation Mechanism** *ACS CATALYSIS*
Alinejad, S., Quinson, J., Schroder, J., Kirkensgaard, J. K., Arenz, M.
2020; 10 (21): 13040-13049
- **A New Approach to Probe the Degradation of Fuel Cell Catalysts under Realistic Conditions: Combining Tests in a Gas Diffusion Electrode Setup with Small Angle X-ray Scattering** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
Schroeder, J., Quinson, J., Mathiesen, J. K., Kirkensgaard, J. K., Alinejad, S., Mints, V. A., Jensen, K. O., Arenz, M.
2020; 167 (13)
- **Teaching old precursors new tricks: Fast room temperature synthesis of surfactant-free colloidal platinum nanoparticles** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Quinson, J., Mathiesen, J. K., Schroder, J., Dworzak, A., Bizzotto, F., Zana, A., Simonsen, S. B., Kuhn, L., Oezaslan, M., Jensen, K. O., Arenz, M.
2020; 577: 319-328
- **Visible-Light-Induced Synthesis of "Surfactant-Free" Pt Nanoparticles in Ethylene Glycol as a Synthetic Approach for Mechanistic Studies on Nanoparticle Formation** *JOURNAL OF PHYSICAL CHEMISTRY C*
Schroder, J., Neumann, S., Kunz, S.
2020; 124 (39): 21798-21809
- **UV-induced syntheses of surfactant-free precious metal nanoparticles in alkaline methanol and ethanol** *NANOSCALE ADVANCES*
Quinson, J., Kacenauskaitė, L., Schroeder, J., Simonsen, S. B., Theil Kuhn, L., Vosch, T., Arenz, M.
2020; 2 (6): 2288-2292
- **Testing fuel cell catalysts under more realistic reaction conditions: accelerated stress tests in a gas diffusion electrode setup** *JOURNAL OF PHYSICS-ENERGY*
Alinejad, S., Inaba, M., Schroder, J., Du, J., Quinson, J., Zana, A., Arenz, M.
2020; 2 (2)
- **Halide-Induced Leaching of Pt Nanoparticles - Manipulation of Particle Size by Controlled Ostwald Ripening** *CHEMNANOMAT*

Neumann, S., Schroeder, J., Bizzotto, F., Arenz, M., Dworzak, A., Oezaslan, M., Baeumer, M., Kunz, S.

2019; 5 (4): 462-471

- **Direct synthesis of H₂O₂ on PdZn nanoparticles: The impact of electronic modifications and heterogeneity of active sites** *JOURNAL OF CATALYSIS*

Wilson, N. M., Schroeder, J., Priyadarshini, P., Bregante, D. T., Kunz, S., Flaherty, D. W.

2018; 368: 261-274