Fundamental research on the voltammetry of polycrystalline gold

Yang, S.

CURRICULUM VITAE

Shengxiang Yang was born in Yunnan, China in July 1990. He earned his bachelor's degree in Environmental Engineering from Lanzhou University in 2013. His research focused on "The Influence of Sewage Irrigation on Maize Plants". During his undergraduate studies, he received the "Innovative Style Scholarship" (Reward for Outstanding Performance in the Art, Sport or Research) and the "Second-class Scholarship" from Lanzhou University.

In 2014, he relocated to Xuzhou, where he commenced his research on "Effective Nitrate-Ammonia Simultaneous Electroreduction into Nitrogen in Different Electrode Reactor Configurations" as a master's student in Environmental Engineering at China University of Mining and Technology, under the supervision of Prof. Lizhang Wang. Throughout his master's studies, he was honored with the "First-class Scholarship" from 2014 to 2016. Additionally, he received the "Master of innovation scholarship" (Reward for Outstanding Researcher) and the "National Scholarship" (Top 2%) at 2016.

In September 2017, he embarked on his doctoral journey as a PhD candidate in the research group of Dr. Dennis Hetterscheid. During his PhD, he conducted research in the labs of the Metals in Catalysis, Biomimetics & Inorganic Materials (MCBIM) and the Catalysis and Surface Chemistry (CASC) research groups. The results of the studies, included in this thesis, were presented as oral presentations at the 2020 Netherlands Catalysis and Chemistry Conference (NCCC) and the 2023 Kroese-Duijsters Symposium. Furthermore, he participated in or presented some of his research work as posters at the NCCC (2019, 2021), the Chemistry as Innovative Science (CHAINS, online) conference (2020), the Reedijk Symposium (2018, 2019, 2020, 2023) and the Holland Research School of Molecular Chemistry (HRSMC) Symposium (2017, 2018, 2019).

During his PhD, he attended various schools and courses, including "Catalysis: An Integrated Approach" organized by the Netherlands Institute for Catalysis Research, HRSMC courses such as "Physical Methods in Inorganic Chemistry", "High Impact Writing", as well as "the Scientific Conduct" course provided by the Graduate School of Leiden University. He also participated in the summer school course "Electrochemical Approaches to Chemical Synthesis"

organized by the International Center for Advanced Studies of Energy Conversion and the graduate school course “Effective Communication and Scientific Conduct” organized by Leiden University. Additionally, during his PhD, he supervised a BSc student (Bañó Gómez Javier).

Published:

1. **Yang, S**.; Hetterscheid, D. G. H., Redefinition of the active species and the mechanism of the oxygen evolution reaction on gold oxide. *ACS Catal.* **2020,** *10*, 12582-12589.

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4. Wang, L.; **Yang, S.**; Wu, B.; Li, P.; Li, Z.; Zhao, Y., The influence of anode materials on the kinetics toward electrochemical oxidation of phenol. *Electrochim. Acta* **2016,** *206*, 270-277.

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Under review:

1. Yang, S.; Hetterscheid, D. G. H., Tracing the dynamic structural changes occurring in amorphous metal oxides during catalysis through mapping of non-Nernstian behavior.

Manuscript in preparation:

1. Yang, S.; Hetterscheid, D. G. H., Exploring the excess free charge distribution under catalytic conditions using a quartz crystal microbalance methodology.

2. Yang, S.; Peng L.; Hetterscheid, D. G. H., Electrochemial quartz crystal microbalance (EQCM) study recognize non-Faradaic from Faradaic behavior in the electrode-driven electrochemical process.

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