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Promotion of the Electrocatalytic Reduction of Nitrate

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Citation

Yang, J. (2012, October 24). *Promotion of the Electrocatalytic Reduction of Nitrate*. Retrieved from <https://hdl.handle.net/1887/22045>

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Author: Yang, Jian

Title: Promotion of the electrocatalytic reduction of nitrate

Issue Date: 2013-10-24

List of publications

This thesis is based on the following publications.

Chapter 2

Formation of volatile products during nitrate reduction on a Sn-modified Pt electrode in acid solution

Journal of Electroanalytical Chemistry, **662**, 87 (2011)

Jian Yang, Matteo Duca, Klaas Jan P. Schouten, and Marc T.M. Koper

Chapter 3

Electrocatalytic reduction of nitrate on a Pt electrode modified by p-block metal adatoms in acid solution

ChemCatChem, **5**, 1773 (2013)

Jian Yang, Federico Calle-Vallejo, Matteo Duca, and Marc T. M. Koper

Chapter 4

Combining voltammetry and ion chromatography: application to the selective reduction of nitrate on Pt and PtSn electrodes

Analytical Chemistry, **85**, 7645 (2013)

Jian Yang, Youngkook Kwon, Matteo Duca, Marc T.M. Koper

Chapter 5

pH dependence of the electroreduction of nitrate on Rh and Pt polycrystalline electrodes

in preparation

Other publication:

Promotion effects of Sn on the electrocatalytic reduction of nitrate at Rh nanoparticles

ChemElectroChem, submitted

W. Siriwatcharapiboon, Y. Kwon, J. Yang, R. L. Chantry, Z.Y. Li, S. L. Horswell, M. T.M. Koper

Curriculum Vitae

Jian Yang was born in Wuhan, China, in 1983. After obtaining his Bachelor degree (2006, Wuhan University) and Master degree (2009, Tongji University) in Environmental Engineering, he continued his research education in Electrocatalysis. In 2009, he started his study as a PhD student under the supervision of Prof. Dr. Marc. T. M. Koper, in the Catalysis and Surface Chemistry group, Leiden Institute of Chemistry, supported by a fellowship of China Scholarship Council. His studies focused on the electrocatalytic reduction of nitrate and the results are described in this thesis. During his PhD study, he attended several academic activities:

- ELCAT training course: Electrocatalysis and Single Crystal Electrodes, Alicante, 2010
- ELCAT training course: Structural and electronic effects in electrocatalysis, Leiden, 2010
- Poster at the 61st Annual Meeting of the International Society of Electrochemistry, Nice, 2010
- Poster at Summer School “Energy and Materials from the Sun”, Rolduc, 2011
- Poster at the 63rd Annual Meeting of the International Society of Electrochemistry, Prague, 2012
- Speaker at the 14th Netherlands’ Catalysis and Chemistry Conference (NCCC), Noordwijkerhout, 2013

