Biomass Electrochemistry: from cellulose to sorbitol
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List of Publications

This thesis is based on the following publications:

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

Chapter 7
Chapter 8


In addition, the author has contributed to the following articles:


• H. Li, F. Calle-Vallejo, M. J. Kolb, Y. Kwon, Y. Li, and M. T. M. Koper, Why the (100) terrace breaks and makes bonds: oxidation of dimethylether on platinum single-crystal electrodes, 2013, submitted.

• J. Yang, Y. Kwon, M. Duca, and M. T.M. Koper, Combining voltammetry and ion chromatography: application to the selective reduction of nitrate on Pt and PtSn electrodes, 2013, submitted.


In magazine


Other publications

- Y. Kwon, H. J. Lee, and J. Lee, Autonomous interfacial creation of nanostructured lead oxide, Nanoscale, 3 (2011) 4984-4988. (Front Cover of Issue)


Curriculum Vitae

Youngkook was born in Gimcheon, a city in North Gyeongsang Province in South Korea in 1979. After high school, he moved to Seoul to study Environmental Engineering at Kwangwoon University (1998-2005, including military service for 26 months) and finished his bachelor study with the research topic of “Arsenic Removal from Mine Tailings”. Before starting master course, he worked in companies to learn business and economics especially in sales and accounting departments until 2007. For his master’s degree, he studied electrochemistry in the department of environmental science and engineering at GIST (Gwangju Institute of Science and Technology) under the supervision of Prof. Dr. Jaeyoung Lee with the research topic of “Electrocatalytic Recycling of CO₂ and Small Organic Molecules” 1) developing a stable and cost-effective anode catalyst for formic acid fuel cells, and 2) CO₂ reduction to formic acid on Pb electrode.

In September 2009, Youngkook started his PhD work in Leiden University (the Netherlands) under the supervision of Prof. Dr. Marc T. M. Koper with the project title of “Biomass Electrochemistry: from cellulose to sorbitol” sponsored by the CatchBio Smart Mix Program, to find out new electrochemistry-based routes of catalysis for sustainable chemicals from biomass. The results of this work are presented in this thesis. Parts of his work have been presented at several international conferences.