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Electrochemical and surface studies of the effect of naphthalene-based additives on tin electrodeposition

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List of publications

This thesis is based on the following publications

Chapter 2

D. Aranzales, J.H.O.J. Wijenberg and M. T. M. Koper. Voltammetric Study of Tin Electrodeposition on Polycrystalline Gold from Sulfuric and Methanesulfonic Acid, J. Electrochem. Soc. **2019** volume 166, issue 8, D283-D289

Chapter 3

D. Aranzales, I. Briliani, I. T. McCrum, J.H.O.J. Wijenberg, A.C.A. de Vooy and M.T.M. Koper. The effect of naphthalene-based additives on tin electrodeposition on a gold electrode. Electrochimica Acta **2021** volume 368, 137606.

Chapter 4

D. Aranzales, J.H.O.J. Wijenberg and M. T. M. Koper. The effect of naphthalene-based additives on the kinetics of tin electrodeposition on a boron doped diamond electrode. Submitted to ChemElectroChem **2021**.

Other publications

K. Ojha, N. Arulmozhi, **D. Aranzales** and M.T. M. Koper. Double layer of Pt (111) aqueous electrolyte interface: Potential of Zero Charge and Anomalous Gouy - Chapman Screening. Angew. Chem. Int. Ed. **2020** volume 59, 711-715

D. Aranzales, C. Blay, E. Claramonte, J.E. Primo, A. Sanz, M. Sospedra, A. Torres, D. Ventura, M. Cabello, H., A simple approach to understand materials chemistry by studying materials present in electronic lighters. Proceedings of EDULEARN15 Conference 6th-8th July, 2015. Barcelona, Spain.

Curriculum vitae

Diana Aranzales was born on the 27th of October 1988 in Bogotá, Colombia and grew up in Soacha, where she attended the Cosmos high school and finished it in 2005. After finishing high school, she got a technical degree in chemistry between 2006 – 2008 at the National learning service (SENA). On August 2008, she started studying chemistry at National University of Colombia and finished it on August of 2013, during her bachelor she received the distinction as honor bachelor in 2009. During September 2013 to August 2014, she worked as analytical chemist at the industry performing chemical analysis for water quality.

In June 2014, she was awarded with the Grisolia grant from Generalitat Valenciana from Spain to study a master program. In August 2014, she moved to Spain to obtain her master's degree in Applied Chemistry at Jaume I University in Castellon de la Plana. The topic of her master thesis project was "Synthesis and characterization of graphene oxide for photovoltaic applications" supervised by Prof. Dr. Juan Carda Castelló and Dr. Teodora Stoyanova. She finished her master studies on July 2016.

In August 2016, she started her PhD studies at Leiden University under the supervision of Prof. Dr. Marc Koper to work in the project "Robust production of ultra-thin tin coated steel strip by fundamental understanding of the tin deposition process (ThinTin)" sponsored by Tata Steel Nederland Technology B.V. through the Materials Innovation Institute M2i and the Technology Foundation TTW. The main goal of the project was the fundamental understanding of the initial stages of the tin electrodeposition process and the study of the influence of different parameters involved in the nucleation and growth of tin such as electrolyte and additives effect. The results of this work are presented in this thesis and parts of the work have been published and presented at several international conferences.