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Editorial Overview: Surface electrochemistry

Marc T.M. Koper

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Marc T.M. Koper

Marc T.M. Koper is Professor of Fundamental Surface Science at the Leiden Institute of Chemistry of Leiden University (The Netherlands). His research interests are in fundamental aspects of surface electrochemistry, electrocatalysis and theoretical and computational electrochemistry.

Electrochemical reactions and phenomena take place at surfaces and interfaces. Probing and understanding electrochemical events at interfaces are therefore at the core of surface electrochemistry, and of utmost importance for the description and design of electrochemical devices. This thematic issue of Current Opinion in Electrochemistry collects short reviews by leading experts in a number of established as well as emerging fields in surface electrochemistry. Theoretical and computational aspects of surface electrochemistry are covered in the contributions by Jinnouchi *et al.* [1] on electronic structure calculations of electrode/electrolyte interfaces, and by Calle-Vallejo *et al.* [2] on adsorption energy scaling relations in electrocatalytic reaction mechanisms. State-of-the-art developments in spectroscopy and imaging of electrochemical interfaces are reviewed by Domke *et al.* [3] (on Electrochemical Tip-Enhanced Raman Spectroscopy EC-TERS) and by Rodríguez-López *et al.* [4] (on Electrochemical Scanning Probe techniques), while Motobayahsi and Osawa [5] discuss recent advances in the spectroscopic characterization of electrochemical interfaces involving ionic liquid electrolytes. Advances in the surface electrochemical study of key electrocatalytic reactions are dealt with in the papers by Escudero-Escribano *et al.* [6] (oxygen reduction reaction) and Yeo *et al.* [7] (carbon dioxide reduction), while Cherevko [8] discusses important work on the surface mechanisms involved in the stability of catalysts for the oxygen reduction and oxygen evolution reactions . Surface electrochemistry also provides the essential tools for the examination of the electrochemical properties of surface-confined enzymes, as discussed by Jenner and Butt [9], and for supramolecular electrochemistry, as discussed by Mertens *et al.* [10]

I would like to thank all contributors for their great efforts in writing such excellent papers, and I am certain that the short reviews in this issue will be useful for all those readers who want to be updated in the latest state-of-the-art developments in the topics covered.

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