Surfaces

an Open Access Journal by MDPI

CiteScore: 3.4
Impact Factor: 2.9

Special Issue Reprint

Electrochemical Surface Science: Basics and Applications

Edited by: Gaetano Granozzi and Nicolas Alonso-Vante

Electrochemical surface science (EC-SS) is the natural advancement of traditional surface science (where gas–vacuum/solid interfaces are studied) to liquid (solution)/electrified solid interfaces. Such a merging between two different disciplines—i.e., surface science (SS) and electrochemistry—officially advanced ca. three decades ago. The main characteristic of EC-SS versus electrochemistry is the reductionist approach undertaken, inherited from SS and aiming to understand the microscopic processes occurring at electrodes on the atomic level. A few of the exemplary keystone tools of EC-SS include EC-scanning probe microscopies, operando and in situ spectroscopies and electron microscopies, and differential EC mass spectrometry (DEMS). EC-SS indirectly (and often unconsciously) receives a great boost from the requirement for rational design of energy conversion and storage devices for the next generation of energetic landscapes. As a matter of fact, the number of material science groups deeply involved in such a challenging field has tremendously expanded and, within such a panorama, EC and SS investigations are intimately combined in a huge number of papers. The aim of this Special Issue is to offer an open access forum where researchers in the field of electrochemistry, surface science, and materials science could outline the great advances that can be reached by exploiting EC-SS approaches. Papers addressing both the basic science and more applied issues in the field of EC-SS and energy conversion and storage materials have been published in this Special Issue.

mdpi.com/books/reprint/1652