

Special Issue on
**Surface Analytical Spectroscopic and Microscopic
Techniques to Investigate Corrosion Phenomena and
Thin Surface Layers**

CALL FOR PAPERS

Surface analytical techniques are of paramount importance for the evaluation of various surface phenomena. The use of appropriate surface analytical techniques can provide crucial information about surface chemistry, including specific functionalization, as well as bond type and its strength, and molecule orientation on the surface. Such profound information could shed light on the chemical bonding between various surfaces, for example, at the metal-adsorbate interface and receptor-ligand complexes.

For example, surface analytical techniques can be successfully employed in corrosion studies, to elucidate the corrosion products or the possible adsorption mechanisms of corrosion inhibitors. Furthermore, a combination of surface analytical techniques is needed to solve the problems arising during the manufacturing of coatings in general. Apart from that, these techniques are critical in evaluation and understanding of adsorption of various biological macromolecules (and/or drugs, even cells), natural polymers (e.g., polysaccharide), synthetic polymers (e.g., polydimethylsiloxane), and metal (e.g., gold, stainless steel, and titanium) surfaces. The disadvantage of many spectroscopic techniques is that they frequently provide limited information at the metal-solution interface, where a lot of important processes take place and in most cases ultrahigh vacuum is required, which is far from the real application. In order to overcome these limitations, complementary techniques are employed (e.g., atomic force and scanning tunnelling microscopies). Based on these facts the field of this special issue is broad.

We invite review and original papers related to surface analysis.

Potential topics include but are not limited to the following:

- ▶ Applications using atomic force and scanning tunnelling microscopy
- ▶ Analysis using surface sensitive techniques, especially secondary ion mass spectrometry, X-ray photoelectron spectroscopy and Auger electron spectroscopy, laser-induced breakdown spectroscopy, Rutherford backscattering spectroscopy, and low-energy ion scattering spectroscopy
- ▶ Application of SERS and ATR-FTIR spectroscopy to elucidate metal-adsorbate bonding
- ▶ Applications of spectroelectrochemistry
- ▶ Application of moderate pressure and ambient pressure surface sensitive techniques (such as APXPS) and in situ and operando methods of investigation by combined spectroscopic techniques
- ▶ The use of special surface analytical techniques for investigation of corroded metallic surfaces, adsorption of corrosion inhibitors, and investigation of thin surface films (e.g., coatings)

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jspec/sas/>.

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