

## REPORT FOR ECM 115/ESTABLISHMENT OF A NEW IUVSTA DIVISION: BIOINTERFACES

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The surface of materials presenting biological and/or biochemical interfaces are of great interest for both academia and industry. Indeed, biomedical or diagnostic devices, bioimplants, design of materials for biological environments, but also biotechnology, personal care, food production, biodegradation, biocorrosion and anti-fouling properties are some of the emerging technologies and applications which need fundamental understanding and knowledge.

UHV-based surface analytical tools are used extensively for research, development and quality control of such biointerfaces, as powerful and reference tools. In addition to the use of the UHV-based techniques, even more challenging aspects in probing biointerfaces lay in *in situ* characterizations at the solid-liquid interface at atmospheric conditions: existing analytical methods are then coupled to improved or dedicated new techniques, resulting in new approaches and methodologies. In that frame, the objectives are to determine what relationships exist between surface chemistry and biological responses.

The research which is displayed in this division would be highly interdisciplinary, involving collaborators from a wide variety of fields including regenerative medicine, neuroscience, developmental biology, pharmaceuticals, materials processing, plasma physics and nanofabrication, metallurgy and corrosion.

As regards the impact of the Biointerfaces steering group that I was chairing since March 2011 (Namur ECM meeting), 2 important scientific facts in the triennium:

- 65<sup>th</sup> IUVSTA meeting in Peckforton Castle (UK), in May 2012: co-organized with the Applied Surface Science Division (Chair **A. Shard (IUVSTA/ASS member)**, Vice-Chairs: S. Ray, W. Unger, **A. Galtayries (IUVSTA/BIO member)**, 43 participants (including **F. Höök (IUVSTA/BIO Member)** and **Morgan Alexander (IUVSTA/BIO Member)**) from 12 countries, with representatives from academia, national laboratories and industry.
- IVC-19 and associated conferences, Paris (F), in Septembre 2013: one symposium for Biointerfaces, chaired by Pr. **Michael Grunze (AVS)**, Editor in Chief of the Biointerphases Journal.

34 abstracts (27 oral communication + 7 posters), 1 keynote Pr M. Textor (ETH Zürich), 3 or 4 invited speakers (additional contacts are taken as a special effort from the organisers for this symposium), 4 sessions entitled The future of biosensors, Quantifying and predicting protein/surface interactions, *In situ* and *in vivo* studies of biointerfaces, Biointerfaces probed by Synchrotron Light and Neutron beams.

4 co-chaired sessions with Thin Films (+17 oral comm.), Applied Surface Science (+6 oral comm.), Plasma Science & Technology (+18 oral. comm.), Nanoscience & Technology (+8 oral comm.), for an equivalent of 4-day program dealing with Biointerfaces.

To improve the visibility of this multidisciplinary division, I would suggest to discuss a new design of the bio sub-topics in the some of our divisions (*i.e.* **Pietro Favia, IUVSTA/BIO member** is an invited speaker in the ASS Symposium), as well as the nomination of a greater number of members, that I could recommend to the National Vacuum Societies (*since then D. Castner (this triennium) and Laura Gamble (next triennium) have been nominated by the AVS for the IUVSTA Bio Division*).