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Area D: Characterization and Modelling

Symposium D3

Title: Characterization of biomaterials		
Organizer	Institution	Contact email
Maria Vallet-Regi	Complutense University Madrid, Spain	vallet@ucm.es
Aldo Boccaccini	University Erlangen, Germany	aldo.boccaccini@fau.de
Antonio Salinas	Complutense University Madrid, Spain	salinas@ucm.es
Abstract		
<p>This symposium is devoted to the current trends in physicochemical and biological characterization of advanced biomaterials. As a distinctive feature compared with other types of materials, biomaterials require special surface characterization methods that allow tailoring them to drive the biological reactions: protein adsorption, cell adhesion, cell growth, blood compatibility, etc. In addition, for most biomedical applications, either as short-term degradable applications or long-term structural or load-bearing applications, bulk properties must meet the physical and/or mechanical demands of these applications over the desired time period, even if the surface properties facilitate biocompatible material–tissue interactions. Other bulk properties that may have to be taken into account during the selection of a biomaterial include: thermal, optical, electrical and magnetic properties. Finally, in vitro and in vivo studies must be performed for a fully characterization of a biomaterial. Topics to be covered by the symposium include:</p> <ul style="list-style-type: none">• Surface characterization• Microstructure and nanostructure characterization• Textural properties• In vitro behavior• Mechanical and thermo-mechanical properties• Optical, electrical and magnetic properties• Biocompatibility assessment• Evaluation of Blood–Materials Interactions• Use of animals in biomaterials and medical devices research.• Modelling		