Symposium X : Biointerfaces, Biominerals, Biomaterials : Understanding how natural or synthetic materials and biological systems interact with each other to improve future materials for regenerative medicine or drug-delivery systems.

Scope of the Symposium

BIOINTERFACES (or Biological surfaces and interfaces), are generally defined as the field where synthetic materials and biological systems interact with each other - a topic that constitutes one of the most innovative, dynamic and expanding fields in Science and Technology. Designed biointerfaces are vital elements for the functionality of bio-related processes and devices in fields as diverse as biotechnology, biosensors & diagnostics, biomimetic materials, stem cell technology, drug-delivery systems, additive biomanufacturing, regenerative medicine. BIOMINERALS are minerals accumulated by organisms especially into biological tissues or structures forming organic/mineral biocomposites. Normal biomineralisation is frequently characterised by a high degree of specificity and control, which is exerted during the interaction between the mineral and the organic constituents on different hierarchical levels and directs the nucleation, growth and morphology of ?normal? biomaterials such as bone and teeth. BIOMATERIALS are defined as a substance that has been engineered to take a form which, alone or as part of a complex system, is used to direct, by control of interactions with components of living systems, the course of any therapeutic or diagnostic procedure, in human or veterinary medicine. Thus, it appears that the 3 fields we propose to explore in our symposium offer a common theme that is the crossing of disciplinary boundaries affording an opportunity to dissect fundamental physical-chemical mechanisms at interfaces, unravel functional significance of interfaces, identify practical challenges, and explore new scientific and technological opportunities. Sponsored by the B3lab CNRS international research project.

Abstracts will be solicited in (but not limited to) the following areas

- *Biomaterials, Biointerfaces, Biominerals, Bioceramics, Biomimetic materials, drug-delivery materials, Biofilms, Cell-material interactions, Protein-surface interactions, Tissue engineering.*

List of invited speakers

Andres Garcia (*Georgia Institute of Technology*) **Manuel Salmeron-Sanchez** (*University of Glasgow*) **Mateus Borba Cardoso** (*Brazilian Synchrotron Light Laboratory (LNLS)*) **Kathryn Grandfield** (*Department of Material Science and Engineering and School of Biomedical Engineering, McMaster University Canada*) **Karine Anselme** (*Institut de Science des Matriaux de Mulhouse (IS2M), CNRS UMR7361, Mulhouse, France*) .

Symposium Organizers

Alexandre Malta Rossi (*Biomaterials Laboratory, Department of Condensed Matter, Applied Physics and Nanoscience, Brazilian Center for Research in Physics (CBPF), Rio de Janeiro, Brazil*) **Marcos Farina** (*Biomineralization Group, Institute of Biomedical Sciences (ICB), Federal University of Rio de Janeiro (UFRJ), Brazil*) **Karine Anselme** (*Biointerfaces Group, Institut de Science des Matriaux de Mulhouse (IS2M), CNRS UMR7361, Mulhouse, France*) **Chantal Damia** (*Bioceramics Group, Institut de Recherche sur les Cramiques (IRCER), CNRS UMR 7315 University of Limoges, Limoges, France*) .