

Thursday, 4th October, 12.00 pm, Seminar Room

Host: Dr. Sergio Moya

**Fast-setting protein- and polysaccharide-based
bioinks for tissue engineering, 3D in vitro
tissue/tumour models, and biofabrication of
patient-specific implants**

*Dr. Joaquim Miguel Oliveira
University of Minho, Braga, Portugal*

Protein- and polysaccharide-based biomaterials of natural-origin, processed in a hierarchical manner, can offer the possibility of mimicking several tissue interfaces. At the I3B's, we have been developing several advanced polymeric materials (e.g., gellan gum, silk fibroin, hyaluronan, and gelatin) and ceramics (e.g., hydroxyapatite and ionic-doped tricalcium phosphates) with the required properties for obtaining hydrogels and bioinks to be used in interface 3D in vitro models and tissue regeneration (e.g. scaffolds and patient-specific implants). Several in-house developed dynamic culturing platforms comprising proprietary bioreactors and microfluidics technologies have also been developed for use in interface studies and tissue engineering. Our most significant contributions dealing with the development of fast-setting hydrogels and bioinks, advanced processing and culturing platforms, and in vitro/pre-clinical validation will be presented and discussed, herein.