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Area F

Symposium F6

Title: Biologically instructive biomaterials		
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Abstract		
<p>Hydrogels have long been considered ideal materials in tissue engineering due to their degradation, similarity of structural properties to the extracellular matrix of mammalian tissues and ease of delivery. Recently, there has been increasing evidence that the regenerative ability of biomaterials is enhanced by mimicry of the composition and multi-scale structure of native tissues. Thus, the adoption of naturally inspired and derived materials is an emerging fabrication concept, uniquely placed to achieve biomaterials that instruct biology.</p> <p>Biologically instructive biomaterials and advanced analytical tools and technologies converge toward resolving the remaining challenges of today's tissue substitutes. Special emphasis on advanced characterization technologies is critical in understanding both the composition–structure–functionality dependency as well as biomaterial behaviour during in vitro and in vivo testing.</p> <p>This symposium will also provide an overview on recent progress in biomaterials science alongside advances in processing techniques (from cryogelation and porogen leaching to bioprinting and additive manufacturing) to develop biologically instructive materials that have led to technology-driven (clinical) applications. For a comprehensive perspective, the discussion may include recent advances, current limitations, perspectives, and emerging applications.</p>		