

CEITEC – Central European Institute of Technology, Brno University of Technology would like to inform you about the on-coming lecture:

Prof. Claudio Migliaresi (University of Trento, Italy)

Natural Polymers For Tissue Engineering and Biological Models

6/12/2016

**Meeting Room S2.02
CEITEC BUT, Building "S"
Brno, Purkyňova 123**

 **Tuesday, 14:00**

Natural polymers are ideal candidates for the fabrication of scaffolds for tissue engineering applications to regenerate tissue or organs, for the fabrication of 3D model cell assemblies to evaluate drugs, contaminants, additives to food, pesticides, cosmetics etc., or to study the mechanism of *in vitro* induced diseases.

Classical tissue engineering approach requires scaffolds that are seeded with cells, eventually loaded with biological molecules, cultured in static or dynamic modes *in vitro* for some period of time, finally implanted *in vivo* to repair or substitute the damaged tissue or organ. A bottom-up approach starts from building blocks containing cells that can be assembled or combined to generate hybrid constructs that are precursors of tissue constructs and of the final tissue.

Both procedures require materials that are able to host cells and to establish with them the correct dialogue in order to promote and control their proliferation, metabolic activity and extracellular matrix production.

The lecture discusses the two above defined approaches with the use of natural based polymers. Specific examples will be presented on silk-derived constructs with processing-related bioactivity and on alginate-cells assemblies obtained by cell-printing technology.