

Title: Introduction to Bionanotechnology [3-0-0-3]**Content :**

Introduction to Bio-Nanotechnology, Cellular nanostructures, self-assembly of colloidal nanostructures of biological relevance, biofunctional nanoparticles, Nanoparticles for drug delivery (including solid lipid nanoparticles, synthetic and biopolymeric nanoparticles), carbon nanotubes, polymeric nanofibers, quantum dots, magnetic nanoparticles and gold nanostructures for theranostics, Multilayer Thin Film: Polyelectrolyte multilayers, coated colloids, smart capsules, Nanoengineered biosensors, Nanotechnology for Biodefense, Implants and Prosthesis, Implications in neuroscience, tissue engineering and cancer therapy, and Environmental and safety aspects of bio-nanotechnology.

Texts / References:

1. Multilayer Thin Films, G Decher, JB. Schlenoff, Wiley-VCH Verlag GmbH & Co. KGaA (2003)
2. Bionanotechnology, Lessons from Nature; D S. Goodsell, Wiley-Liss (2004)
3. Biomedical Nanotechnology, N H. Malsch, CRC Press (2005)
4. Nanotechnologies for the Life Sciences, Vol 2, Biological and pharmaceutical nanomaterials; Challa Kumar, Wiley-VCH, (2006)