

Tuesday, 12th November, 12.00 pm, Seminar Room

Host: Prof. Luis M. Liz-Marzán

Replication of biological functions using gels of electrochemical macromolecular machines

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The main question behind this presentation: why chemists are (still) unable to describe biological functions (and malfunctions) by physical chemical equations? Most of those functions are originated at the intracellular matrix dense gel of functional cells by actuation of chemical macromolecular machines. At the moment chemists have not enough control of those biochemical machines to check the influence of different chemical and physical variables on the reaction properties in order to attain a quantitative description. Model materials are required in order to perform an initial approach. Here we will present how some of those model materials can be used to replicate haptic muscles getting a quantitative description of artificial proprioception (still considered as a psychological property). But natural muscles, as many biological functions, are asymmetric (they only work by contraction) why?, and why muscles from ectotherm animals work better after heating?