

Thursday, 19th April, 12.00 pm, Seminar Room

Host: Prof. Luis M. Liz-Marzán

Interfacing Nanomaterials with Biology: From CRISPR delivery to Antimicrobials

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A key issue in the use of nanomaterials is controlling how they interact with themselves and with the outer world. Our research program focuses on the tailoring of nanoparticles of surfaces for a variety of applications, coupling the atomic-level control provided by organic synthesis with the fundamental principles of supramolecular chemistry. Using these nanoparticles, we are developing new strategies for biological applications. This talk will focus on the interfacing of nanoparticles with biosystems, and will discuss the application of self-assembled nanoparticles as delivery vehicles. We will demonstrate the delivery of proteins and nucleic acids into the cytosol, including functional CRISPR systems. We will also show how this efficient cellular delivery translates into effective systems in vivo. Finally, this presentation will also feature the use of nanoparticles as therapeutics against multi-drug resistant bacteria, providing a potential strategy for combatting this emerging threat.