Università di Roma "Tor Vergata"

Dipartimento di Scienze e Tecnologie Chimiche
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AVVISO DI SEMINARIO

Il Dr. Lorenzo Di Michele
Cavendish Laboratory
University of Cambridge

Venerdì 22 Settembre ore: 12:00

Nell'aula seminari del Dipartimento di Scienze e Tecnologie Chimiche

Terrà un seminario dal titolo:

Amphiphilic DNA complexes: from biomimetic membrane linkers to molecular crystals

Proponente; Prof. F. Ricci

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ABSTRACT

Synthetic DNA nanostructures can be designed to replicate the structure and function of biological molecules, as well as to create novel synthetic materials [1,2]. Particularly powerful and largely unexplored is the combination of selective Watson-Crick interactions and robust hydrophobic forces, which can be realised in amphiphilic nanostructures where nonpolar tags are arranged onto engineered DNA scaffolds.
I will discuss the use of amphiphilic DNA ligands/receptors to drive attractive interactions between lipid vesicles, sharing key features with adhering biological cells and displaying an intriguing response to external stimuli [3-8]. In the second part I will introduce a range of amphiphilic DNA nanostructures that reliably self-assemble into 3D macromolecular crystals, [9], finally achieving a long-standing goal of structural DNA nanotechnology.

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[4] S.F. Shimobayashi, B.M. Mognetti, L. Parolini, D. Orsi, P. Cicuta, L. Di Michele, *Phys. Chem. Chem. Phys.* **17**, 15615-15628 (2015).
[5] L. Parolini, J. Kotar, L. Di Michele*, BM Mognetti*, *ACS nano* **10** (2), 2392-2398 (2016).
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[8] O.A. Amjad, B.M. Mognetti, P. Cicuta*, and L. Di Michele*, *Langmuir,* **33**(5),1139-1146 (2017).
[9] R.A. Brady, N.J. Brooks, P.Cicuta*, L. Di Michele*, *Nano Lett.* **17**(5), 3276-3281 (2017).