

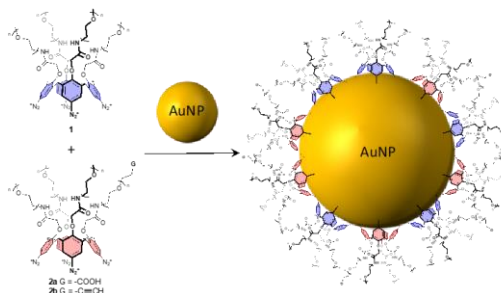
Mercoledì 18 settembre 2019, alle ore 15.30
presso l'aula I del Dipartimento di Scienze Chimiche

il prof. Gilles Bruylants

*Chemistry and Materials Science Department,
Ecole polytechnique, Université libre de Bruxelles (ULB)*

terrà il seminario:

Calixarenes: A Golden Tool for Nanomaterial Functionalization



Controlling the grafting densities of different ligands at the surface of nanoparticles (NPs) is a key challenge in the field of nanomaterials. To tackle this issue, we have developed, in collaboration with the group of Prof. Ivan Jabin, a functionalization strategy that takes advantage of the extreme reactivity of calix[4]arene-tetra-diazonium salts. Recent studies from our groups have shown that such compounds can form robust monolayers on gold NPs.¹ Besides, when two different calix[4]arene-tetradiazonium salts are grafted, the composition of the layer clearly reflects the ratio of calixarenes in solution, paving the way to the development of NPs with a controlled functionalization.² We are currently extending this methodology by synthesizing diverse calix[4]arene-tetradiazonium salts, principally bearing OlyEthyleneGlycol (OEG) chains ended by different functional groups (carboxylates or alkynes) allowing the coupling of biological ligands, and by applying it to other types of nanomaterials. The development of this controlled calixarene-based functionalization strategy of nanomaterials could unlock the development of many applications in the biomedical field.

[1] Troian-Gautier, L.; Valkenier, H.; Mattiuzzi, A.; Jabin, I.; den Brande, N. V.; Mele, B. V.; Hubert, J.; Reniers, F.; Bruylants, G.; Lagrost, C.; et al. *Chem. Commun.* **2016**, 52 (69), 10493–10496.

[2] Valkenier, H.; Malytskyi, V.; Blond, P.; Retout, M.; Mattiuzzi, A.; Goole, J.; Raussens, V.; Jabin, I.; Bruylants, G. *Langmuir* **2017**, 33 (33), 8253–8259.

La presenza della S. V. sarà molto gradita

Prof. Cristiano Zonta
Presidente SCI sezione Veneto

Prof. Michele Maggini
Direttore Dipartimento Scienze Chimiche

Prof. Giulia Licini