

Supramolecular chemistry and (nano)graphenes: a honeymoon ?

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Multifunctional materials based on π -conjugated systems, and in particular on (nano)graphenes, are key in organic (opto)electronics. However, their practical use requires the optimization of the self-assembly of multimodular architectures at surfaces using non-conventional methods, their controlled manipulation and responsiveness to external stimuli, and the quantitative study of various physico-chemical properties at distinct length- and time-scales. My lecture will review our recent findings on the bottom-up fabrication of graphene based conducting architectures and materials as well as the use of multicomponent systems, in particular based on responsive and semiconducting molecules, in order to realise multifunctional devices such as optically switchable field-effect transistors.

Biosketch:

Paolo Samorì is full professor and director of the Institut de Science et d'Ingénierie Supramoléculaires of the Université de Strasbourg where he is also head of the Nanochemistry Laboratory. He is also Fellow of the Royal Society of Chemistry (FRSC) and junior member of the Institut Universitaire de France (IUF). He obtained a Laurea (master's degree) in Industrial Chemistry at University of Bologna in 1995. In 2000 he received his Ph.D in Chemistry from the Humboldt University Berlin (Prof. J.P. Rabe). He was permanent research scientist at Istituto per la Sintesi Organica e la Fotoreattività of the Consiglio Nazionale delle Ricerche of Bologna from 2001 til 2008, and Visiting Professor at ISIS from 2003 til 2008. He has published >160 papers on applications of scanning probe microscopies beyond imaging, hierarchical self-assembly of hybrid architectures at surfaces, supramolecular electronics, and the fabrication of organic-based nanodevices. His work has been awarded various prizes, including the young scientist awards at EMRS (1998) and MRS (2000) as well as the IUPAC Prize for Young Chemists 2001, the Vincenzo Caglioti award 2006 granted by the Accademia Nazionale dei Lincei, the "Nicolò Copernico" award 2009 (Italy) for his discoveries in the field of nanoscience and nanotechnology, the prix "Guy Ourisson" 2010 du Cercle Gutenberg and the ERC starting grant 2010. He is member of the advisory boards of Advanced Materials, ChemPhysChem and ChemPlusChem (Wiley-VCH), Journal of Materials Chemistry and Nanoscale (RSC).