

Venerdì, 05/02/2021

alle ore 11.30

il **Dr. Lorenzo Poggini**

CNR-ICCOM

Firenze

terrà il seguente seminario:

"Magnetic Molecules on surfaces: how their interaction can be employed in/on functional devices"

Il seminario sarà tenuto in modalità telematica, tramite accesso alla piattaforma
GoToMeeting

Il link all'evento sarà distribuito tramite email.

Si invitano tutti gli interessati a partecipare.

Dr. Francesco Vizza
Direttore ICCOM

Short Abstract:

The history of magnets and their uses are intimately connected to the evolution of knowledge but, compared to this, molecular magnetism is a young research field. The subject gradually expanded and disclosed unexpected scenarios for inorganic chemistry, condensed matter physics, and molecular electronics, which can benefit from the clever tuning of the interactions between building blocks constituting the “magnetic core” of molecules. At present, molecular magnetism encompasses a wealth of science and continues to produce exciting discoveries founded on the design of new molecules. In recent times, molecular magnetism has started to acquire a serious consciousness of the potentialities of using all the know-how in the design of these magnetic objects to develop new technologies. Advances in understanding the physics of these molecular objects and the discovery of novel classes of compounds in which appealing magnetic properties are optimized, have promoted tremendous efforts in accessing to the individual properties of those nanosystems. A fundamental step toward the practical use of functional molecular materials as active units in molecule-based devices corresponds to their deposition as thin films assembled on solid surfaces. Obviously, the molecular properties observed in bulk must be retained or their alteration must be minimized and eventually controlled. These mandatory requirements are rarely satisfied in coordination complex compounds: the deposition process often influences the molecular structure, and in some cases interactions between the molecule and the surface affect the electronic nature of the molecular system, drastically altering its properties. I'd like to focus the attention on the deposition of Magnetic Molecules, that are suitable building blocks for novel technologies at the nanoscale level as spintronic applications, molecular based electronics and sensor.

Biographic sketch:

My research activity is focused on the development of practical protocol to deposit and characterise magnetic molecules once deposited on a solid surface. This pure surface science interest is flanked by a deep knowledge in Molecular Magnetism with the aim to employ those units for data storage, sensors and for quantum information. During my education and subsequent work as a postdoctoral researcher at the University of Florence, CNRS and CNR, I have acquired a deep knowledge on X-ray photoelectron spectroscopy, Ultraviolet photoelectron spectroscopy, in low-temperature sample environment, later as post doc at the ICMCB-Bordeaux I extended my expertise to Electric Transport Measurements and I enriched my know how in the use of synchrotron radiation-based techniques. In Prof. Roberta Sessoli's group, the topic being the physical study of deposited magnetic molecular layers on surfaces. I acquired the experimental background related to synchrotron X-ray techniques during University studies. Precisely, during my first Post Doc in Florence, I started to acquire the basis in Electric Transport Measurements, related to the design, realization and study of spin valve embedded with a magnetic molecular layer. In January 2016 I moved to Bordeaux at ICMCB, and during my two years Post-Doc experience, I started to establish a dense network of collaborations, inside the ICMCB laboratory but also with other Researchers in the Bordeaux Campus. I also give an important help to the develop and the use of a new platform in Bordeaux Campus training the staff and giving them the basis to be operative in the short term (ELORPrinTec, French funds, Équipex). The experience in using instrumentation at large facilities along with the expertise in sample preparation and knowledge of the magnetic molecules, have allowed me to build strong international collaborations and to work on joint projects. After I moved as a Post-Doc again to Prof. Sessoli's Group where I have started both to develop my own research through the application of European and national research grants and to follow the well establish research of Molecular Magnetism Laboratory. the host institution. Molecular electronics and data storage are currently strongly supported by European Community. In total I have gained more than 35 accepted proposals for international large scale facilities like main proposer (5) and Co-proposer (27) at Elettra (Italy), ESRF e SOLEIL (France), SLS (Switzerland) e DIAMOND (UK) for a total of more than 40 weeks of activities funded by European program .

Up to now I have published **32** publications in peer-reviewed journals, 96% of which in high-impact (Q1) journals: 6 publication as 1st author and corresponding author, 11 publication as 1st author, 1 contribution to a book chapter.

H index: **14**, total citations: **607** (Scopus). Average Impact Factor= **11.8**