南京大学高济宇有机化学前沿讲座

Find the Art of Chemistry!

题　　目：**Self-assembly for Imaging and Sensing**

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地　　点：**仙林化学楼蒋雯若报告厅（H201）**

时　　间：**2017年4月26号（星期三）下午15:00**

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Scientific Career:

1978 - 1983　Laurea in Chemistry summa cum laude, University of Messina (Italy).
1984 -1986　Postdoctoral fellow (NIH) at the Virginia Commonwealth University, Richmond, USA.
1986-1990　Researcher National Research Council, CNR, Instituto F.R.A.E, Bologna.
1987-1988　Visiting researcher, University of Fribourg, Switzerland.
1990-1998　Assistant Professori University of Bologna (Italy).
1998-2004　Full Professor, University of Amsterdam (the Netherlands), chair of Molecular Photonic Materials.
since 2005　Full Professor (C4) in Physics and Chemistry,
University of Münster (Germany) chair of Nanoelectronics and Nanophotonics.
2005- 2006　Adjunct Professor, HIMS, University of Amsterdam, The Netherlands
2006-2012　Part-time Professor Department of Chemistry University of Twente, The Netherlands
2012-　University of Strasbourg/ISIS AXA chair in Supramolecular and Biomaterials Chemistry
Adjunct Scientist at the Karlsruher Institut für Technologie, Germany

Lecture abstract:

Luminescent molecules that can undergo self-assembly are of great interest for the development of new materials, sensors, biolabels…. The talk will illustrate some of the recent results on soft structures based on metal complexes able to aggregate in fibers, gels and soft mechanochromic materials . The use of platinum complexes as building block for luminescent reversible piezochromic and mechanochromic materials will be illustrated. The emission of the compounds can be tuned by an appropriate choice of the coordinated ligands as well as of their aggregation in different structures. The formation of soft assemblies allows the tuning of the emission color, by pressure and temperature leading to a new class of materials possessing reversible properties. We demonstrate how even small changes in molecular design can completely inhibit or enhance the formation of organized supramolecular architectures, leading to a deep understanding of the key factor affecting the whole self-assembly process.

The monitoring of the different emission properties, used as fingerprint for each of the assembled species, allowed an unprecedented real-time visualization of the evolving self-assemblies . Interesting the assembly also occurs in living cells allowing the use of the complex as imaging tools of different cell compartments

Finally the discussed self-assembly can be used as platform for sensing. We have recently demonstrated that a platinum precursor complex can be efficiently employed to detec drugs and toxins in water. The coordination of the analyte to the Pt precursor afford a supramolecular emission-switch-on of the chemosensor and different colors or emission excited lifetimes allow the discrimination of several tenths of analytes .

Selected publications:

1. **C. A. Strassert, L. De Cola et al. *Angew. Chem. Int. Ed.,* 2011, *50*, 946; M. Mauro, L. De Cola et al. *Chem. Commun*. 2014, *50,* 7269**
2. **A. Aliprandi, M. Mauro, L. De Cola *Nature Chemistry , 2016, 8, 10-15***
3. **S. Sinn, F. Biedermann, L. De Cola *Chem. Eu. J.,* 2017, *23*, 1965–1971**

欢迎参加！

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