



SEMINAIRE IPCMS

Opto-electronically Active “Liquid” Molecules Composed of a π -Conjugated Unit and Branched Alkyl Chains

Dr. Takashi Nakanishi

International Center for Materials Nanoarchitectonics (MANA),

National Institute for Materials Science (NIMS), 1-2-1 Sengen, Tsukuba, Ibaraki 305-0047, Japan

Lundi 31 Août 2015 à 14h30
Auditorium de l'IPCMS

Our recent development of ultimate-soft organic materials, namely room temperature functional organic liquids [1], is presented in this seminar. What we studied as room temperature functional organic liquids containing a π -conjugated molecular unit are full-color tunable luminescent (anthracenes, [2] OPVs [3]) liquids and uncommon phase phenomena with photoconducting property of liquid fullerenes [4-6]. Both examples are designed simply by controlling a balance of intermolecular interactions in the alkyl- π compounds, i.e., van der Waals and π - π interactions among adjacent molecules. In addition, the presentation is focused on one of our latest development, directed assembly of hydrophobic-amphiphilic liquid molecules (mainly based on alkylated-C60): how to create order from disorder and apply this novel self-assembly technique to optoelectronic applications. [7]

References:

- [1] Review; Chem. Commun., 2013, 49, 9373-9382. (Feature Article)
- [2] Nature Communications, 2013, 4, 1969. (DOI: 10.1038/ncomms2969)
- [3] Angew. Chem. Int. Ed., 2012, 51, 3391-3395. (Highlighted in Nature, 2012, 484, 9.)
- [4] J. Am. Chem. Soc., 2006, 128, 10384-10385.
- [5] J. Mater. Chem., 2012, 22, 22370-22373.
- [6] Langmuir, 2013, 29, 5337-5344.
- [7] Nature Chemistry, 2014, 6, 690-696.

Contact:

Carlo Massobrio: Carlo.Massobrio@ipcms.unistra.fr