

Dr. Gabriella BARROZINO-CONSIGLIO

UCL – IMCN

IMCN SEMINAR

«Structure/reactivity relationship in asymmetric reactions with polar organo(bi)metallic reagents: synthesis and NMR analysis »

Thursday 14 December 2017 – 03.00 pm

MERC 12

Place Louis Pasteur – Louvain-La-Neuve

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ABSTRACT

Dr. Gabriella BARROZINO-CONSIGLIO – UCL/IMCN

In this talk, Gabriella Barozzino-Consiglio will recall her entire career before arriving at UCL, from her Ph.D. project until the last years spent at the University of Rouen as CNRS Researcher, focusing on the NMR studies.

The common theme of the research has been organometallic chemistry, although not during all her professional experience. One of the main topics has involved the synthesis, reactivity and structure analysis of chiral lithium amides (CLA). The importance of these species as useful tools for stereoselective chemical transformations is well known since they can act as either chiral bases, chiral nucleophiles, or chiral ligands in many organic reactions. Concerning the latter application, CLAs have been mainly associated to highly reactive organolithium compounds (RLi), or with nonreactive diorganometallic species, such as organomagnesium (R_2Mg) and organozinc (R_2Zn) reagents, in the perspective of controlling their enantioselective nucleophilic additions. If literature reports several examples of this type of reactions, from a mechanistic understanding point of view much less is known due to the complexity of the reaction media. Nevertheless, being able to refine the structure of reaction intermediates, tackling the reactions through a structure/reactivity relationship approach thanks to a complementary synthesis/analysis work, is crucial to improve the yield and/or the stereoselectivity of these reactions. In this perspective, some examples of NMR investigations carried out on mixed aggregates formed by CLAs and organometallic reactants will be illustrated.

BIOGRAPHY

Gabriella Barozzino-Consiglio received the Ph.D. degree in Organic Chemistry in 2010 from the University of Florence (Italy) in joint supervision with the University of Rouen (France). After a short period at the University of Nottingham (UK, 2010) with Prof. S. Woodward and two years of post-doc at the Institute ICCOM-CNR in Florence (Italy) with Drs A. Mordini and G. Reginato (Italy, 2010 - 2012), she obtained a temporary research position at CNRS to work in the group of Drs J. Maddaluno and A. Harrison-Marchand (France, 2012 - 2017). From July 1 2017, she joined the Institute of Condensed Matter and Nanosciences of UCL as “*Logisticienne de Recherche*” in NMR. She is both an Organic Chemist and an NMR expert in liquid-state nuclear magnetic resonance with particular emphasis on what concerns the analysis of small organic molecules as well as the study of reaction intermediates and organometallic structures.

During the period spent at the University of Rouen, the research activity was essentially focused on the study of multinuclear NMR techniques, including DOSY experiments, for the determination of lithium compound structures in complex reaction media. Now, as Research Logistician, she is mainly devoted to technical assistance on the NMR equipment and to the support and development of research projects in collaboration with IMCN researchers.

