SINCHEM 2016 doctoral research subject

Novel Photoactive Organometallic catalysts for solar energy harvest and storage

HOME INSTITUTION: Dr. E.A. QUADRELLI and Dr. M Taoufik (LYON 1 university – C2P2 Unit)

HOST INSTITUTION 1: Prof. Nunzio RUSSO (POLITO)

HOST INSTITUTION 2: **IRCELYON**

PROJECT DETAILS

With about 10,000 time more energy being received from the sun with respect to the world's total energy use, solar energy harvesting and storage is likely to play a crucial role in the future scenarios where an increase in energy consumption has to be coupled with drastic reduction in fossil-fuel consumption.
The difficulty in integrating such fluctuating renewable energy source in the current infrastructure makes its transformation into stable, transportable and available-on-demand chemical energy a sustainable route. This thesis will thus focus on the development of original photocatalyst. Its chemical foundation is the original surface organometallic chemistry, mastered by the Lyon 1 team, which will be applied to semiconductor supports. The photocatalytic performances of the resulting new materials will be performed in collaboration with the DISAT team at politecnico di Torino, expert in the field of artificial photosynthesis and photovoltaics.

Candidate: The ideal candidate will have a solid background in at least two of the following three fields: organometallic chemistry, photocatalysis and/or heterogeneous catalysis.