

MASTER INTERNSHIP M2 CDM or PPN (5 months)

2019-2020

Title of the project: New magnetic nanocatalysts for metathesis reaction

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Collaborations: SON Company – j.paris@synthesisofnanohybrids.com

Summary:

This metathesis reaction was first used in petroleum reformation for the synthesis of higher olefins (Shell higher olefin process - SHOP), with nickel catalysts under high pressure and high temperatures. Nowadays, even polyenes with a molar mass $MW > 250,000$ g/mol are produced industrially in this way.

The subject is a joint work between the laboratory Interdisciplinaire Carnot de Bourgogne (ICB), the Institute of Molecular Chemistry (ICMUB) and the SON company.

The objectives of this internship will be:

- 1- The development of new nanocatalysts with the SON company;
- 2- The characterization of these new nanocatalysts: X-ray fluorescence, XRD, XPS, Transmission Electron Microscopy (TEM) characterizations will be an important part of the internship especially using chemical analyzes (STEM and maps) and the implementation/development of the tomography technique (3D reconstruction);
- 3- The use of these nanocatalysts in metathesis reactions.

Type of project (theory / experiment): BOTH but more experiment

Required skills: Aptitude for experimental work, autonomy, interest for chemistry