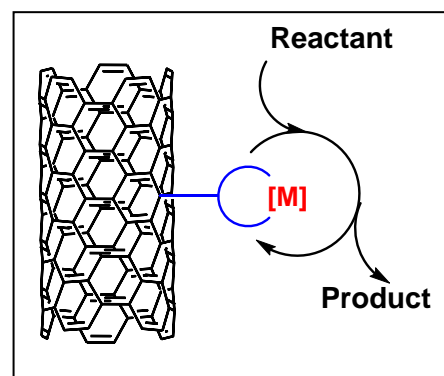


Marie-Curie Ph.D. position for a double diploma from the University of Bucharest (Romania) and Toulouse University (France)

Title: “Development of supported catalysts for continuous flow asymmetric hydrogenation”

Project description: This project aims at developing new supported catalysts for continuous flow asymmetric hydrogenation by immobilizing chiral catalysts (metallic complexes and nanoparticles) on the surface of nanostructured carbon materials (carbon nanotubes and/or graphene) [1]. An innovative aspect with the supported nanoparticles will be to take advantage of the strong effect of carbonaceous supports in activation of hydrogen and of the specific metal-single layer graphene interaction [2]. Among the specific objectives to reach there are: 1) achieve a new generation of highly active and selective recyclable catalysts in asymmetric hydrogenation of C=C and C=N benchmark substrates; 2) determine the structure/activity relationships of these catalysts through a rational optimization of the anchoring process taking into account the influence of the nature of the support/catalyst interactions and 3) Rationalize the enantioselectivity in relation to both the substrates, substituents, and the solvent.

[1] A. Negoj; B. Cojocaru; V. I. I. Parvulescu, N. Imlyhen; M. Gouygou, *Molecular Catalysis*, **2019**, *474*, 110420; R. Axet, O. Dechy-Cabaret, J. Durand, M. Gouygou, P. Serp, *Coord. Chem. Rev.* **2016**, *308*, 236–345; C. Amiens, D. Ciuculescu-Pradines, K. Philippot, *Coord. Chem. Rev.*, **2016**, *38*, 409-432. [2] A. Primo, I. Esteve-Adell, S. M. Coman, N. Candu, V. I. Parvulescu, H. Garcia, *Angew. Chem. Int. Ed.* **2016**, *55*, 607-612; A. Primo, F. Neatu, M. Florea, V.I. Parvulescu, H. Garcia, *Nature Commun.*, **2014**, *5*, 5291.



Period of the fellowship: October 1st 2020 to September 30th 2023 (36 months).

Funding: The Horizon 2020 Marie Skłodowska-Curie Action (MSCA) Initial Training Network (ITN) programme of the European Commission funds this fellowship through the “European Joint Doctorate” (EJD) Network entitled “**Coordination Chemistry Inspires Molecular Catalysis**” (CCIMC), which offers a competitive Ph.D. salary.

Recruiting institution and training plan: The Ph.D. student will be hired by and perceived a salary from the University of Bucharest (UoB) throughout the thesis but will spend ca. half of the time at the Laboratoire de Chimie de Coordination (LCC), a research institution of CNRS associated to the Université de Toulouse and National Polytechnique Institute, according to a bilateral agreement for the double diploma. In addition, a short secondment period (4 months) will take place with an industrial partner (Technalia, Spain) to work on the industrial applications of the developed catalysts. As part of the CCIMC ITN, the student will be exposed to a number of stimulating and rewarding network training events including tutorials, network workshops, international workshops and an international school.

Eligibility: The successful candidate must be in possession of a Master degree, or complete one by the beginning of the Ph.D. thesis, and satisfy the MSCA mobility rule (no more than 12 months of work and/or residence in the recruiting institution Country within the last 3 years).

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For more information and application procedures: www.ccimc.eu