

**Postdoctoral Position in Organometallic Chemistry and Asymmetric Catalysis
(18 months)**

Case studies of nonlinear effects in asymmetric catalysis: elucidating principals and applications.

Work place: IPCMS CNRS – University of Strasbourg

Expected starting date: October-December 2021

Contract Period: 18 months

Gross Salary: 2680€ / month

Scientific Supervisor: Dr. Stéphane BELLEMIN-LAPONNAZ

Keywords: Organometallic chemistry, asymmetric catalysis, non-linear effect

Non-linear effect in asymmetric catalysis is a fascinating phenomenon where the relation between the enantiomeric excesses of the catalyst and the product are not linear. We recently found chiral systems where the ee of the product take values much larger for partially resolved ligand than enantiopure ligand, a phenomenon that was theorized in the 80s but observed for the first time this year. In the project, we are planning a systematic approach to take this field a step forward. The objectives are to identify and understand unusual cases of non-linear effects, including enantiodivergent or hyperpositive non-linear effects and also to improve the enantioselectivities of the reactions involved. The work will also aim at the elucidation of the different parameters governing catalytic reactions involving such ligands, at the extension of the models to determine the influence of reactants and products and at the investigation of aggregation-induced complex catalysts in a general way.

References: *Nat. Catal.* **2020**, *3*, 422-426; *Chem. Sci.* **2020**, *11*, 12453-12463; *Eur. J. Org. Chem.* **2021**, 2916-2922.

Candidate profile:

-PhD in organic/organometallic chemistry

-strong skills (theoretical & experimental) in organic and organometallic chemistry

-motivated, curious, autonomous

Please send Cover letter, Detailed Curriculum Vitae including 2 references able to provide recommendation letters to: Stéphane BELLEMIN-LAPONNAZ (bellemin@unistra.fr)