



**Aquitaine –Karnataka collaboration
Scientific Project for Pre-PhD student exchange**

Scientific Proposal

Project Title	Nanocatalysts Based on Polyoxometalates and Inorganic Chiral NanoRibbons for Enantioselective Transformation in Water	
Scientific domain	Chemical synthesis, Supramolecular assemblies, Physical chemistry, Material science and Asymmetric catalysis.	
Summary (ca. 10 lines)	The main objective of this proposal is to design new catalytic hybrid nanomaterials by grafting polyoxometalates (POMs) catalysts onto inorganic chiral nano-ribbons and to exploit their sustainable properties in asymmetric heterogeneous catalysis. The developments of such chiral nanomaterials are expected to have an important impact on nanoscience and technology, in particular in the field of Polyoxometalates and Asymmetric Catalysis. POMs are covalently and directly grafted to the chiral source, suitable for the chirality transfer from nanoribbons to the whole hybrid material. These chiral nanocatalysts will be tested as recoverable heterogeneous catalyst in enantioselective oxidation of sulfides, alkenes, and oxidative kinetic resolution of secondary alcohols.	
Student profile wished	Masters level, with knowledge in organic and organometallic chemistry, catalysis and supramolecular chemistry	
Supervisor Name	Nlate Sylvain and Oda Reiko	
Supervisor @ & phone	s.nlate@iecb.u-bordeaux.fr	Tel: +33 5 4000 2536
Institute/laboratory/industry (full address)	Institute of Chemistry and Biology of Membranes and Nanoobjects (UMR 5248, CBMN) CNRS, University of Bordeaux, IECB, 2, Rue Robert Escarpit, 33607 Pessac	
Director Name Institute/laboratory/industry	Erick Dufourc	
Director Institute/laboratory/industry @ & phone	e.dufourc@cbmn.u-bordeaux.fr	Tel: +33 5 4000 6818
Timing & duration for project (give approximate ranges)	5 to 6 months	
Representative References	1. L. Shue et al., Catalysis Communications, 59 (2015) 65-68 2. S. Nlate and C. Jahier, Eur. J. Inorg. Chem. (2013) 1606	

Contact Aquitaine: Erick Dufourc @: e.dufourc@cbmn.u-bordeaux.fr tél: +33 5 4000 6818	Contact Karnataka: Dipankar das Sarma @: sarma@sscu.iisc.ernet.in tél: +91 80 2293 2945
http://www.cbmn.u-bordeaux.fr/aquitaine-karnataka-exchange?lang=2	