

ECOLE DOCTORALE DES SCIENCES CHIMIQUES - ED 040

Proposition de sujets de thèse pour la rentrée 2024 / 2025

Titre de la thèse	A COORDINATION CHEMISTRY APPROACH TO UNDERSTANDING CHIRALITY INDUCED SPIN-SELECTION
Descriptif du sujet (10 lignes maximum)	Molecular electronics deals with making nano-electronic devices in which the charge transport occurs across a single molecule or a single layer of molecules to perform simple or complex electronic functions. In particular, the charge transport through chiral molecules can become spin-dependent, but this effect called chirality induced spin-selection is poorly understood. In this project, we will design rational series of chiral coordination complexes to understand how the molecular properties (chirality, magnetism, electronic structure) affect the occurrence and the magnitude of the CISS effect. This project will combine synthetic chemistry to prepare the complexes, and surface science to prepare and characterize the monolayers including the assessment of their morphology and their spin- and chirality-dependent electronic properties.
Compétences souhaitées (nom du DEA, ou MASTER, etc...)	Master or Engineer in Chemistry/Materials with good synthetic skills
Financement (connu ou espéré)	Mérite, ANR, Several proposals currently under review.
Directeur de la thèse 1	Elizabeth Hillard (HDR)
E.mail du directeur de thèse 1	elizabeth.hillard@icmcb.cnrs.fr
Tél du directeur de thèse 1	05 40 00 25 44
Laboratoire d'accueil 1	ICMCB
Directeur du Laboratoire 1	Cyril Aymonier
Adresse du Laboratoire 1	87 av du Dr. A. Schweitzer, 33600 PESSAC
Co-encadrant de la thèse 2	Mathieu Gonidec
E.mail du Co-encadrant de thèse 2	Mathieu.gonidec@icmcb.cnrs.fr
Tél du Co-encadrant de thèse 2	05 40 00 26 82
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Adresse du Laboratoire 2	87 av du Dr. A. Schweitzer, 33600 PESSAC