

**CHEMISTRY MASTER - M2****INTERNSHIP 2020-2021 (end of January – end of June)**

Options of Master (please tick the box(es) of the training that fits the field of the internship) :

**MA (Advanced Materials)  - COSV (Organic Chemistry and Life Sciences)** **MMF (Functional Molecules and Macromolecules)** **PCCP (Physical Chemistry and Chemical Physics)** 

<b>TITLE</b>	<b>Synthesis and Characterization of Molecule-based Magnetic hybrids</b>
<b>SUBJECT</b>	Some molecule-based materials based on transition metals could be used as potential systems to store information at a molecular level or as molecular units in optical or mechanical devices. Prototypes using the dual properties of spin-crossover and thermochromism have been developed by our team in the recent years [ <i>Scientific Report 2018</i> , 8, 8016]. One of the major problems being the shaping of these magneto-optic materials, our team has oriented a part of its researches to elaborate new hybrids of these unique systems [ <i>J. Am. Chem. Soc. 2018</i> , 140, 98 ; <i>Inorg. Chem. 2012</i> , 51, 5417]. In the frame of this project, the research work will be devoted to the synthesis and characterization of a new family of spin-crossover complexes obtained by chemical functionalization of the coordinating ligand in order to implement them into devices such as microelectromechanical systems (MEMS).
<b>TECHNIQUES USED</b>	Synthesis: Organic & coordination chemistry; crystallization if necessary. Characterizations: IR, UV, NMR spectroscopies; X-ray diffraction (single-crystal & powder); magnetic susceptibility, optical and photomagnetic, calorimetric measurements; optical microscopy... This internship will take place inside a multi-nationality team. Therefore, good knowledge in <b>English</b> will facilitate the communication with the other group members.
<b>HOST LABORATORY</b>	Centre de Recherche Paul Pascal – UMR 5031
<b>TEAM</b>	Molecular Materials & Magnetism (M <sub>3</sub> - CRPP)
<b>SCIENTIFIC DIRECTOR</b>	Name: Rodolphe Clérac Tel: 06 03 51 74 16    eMail: clerac@crpp-bordeaux.cnrs.fr Address: 115 avenue Dr. Albert Schweitzer, 33600 Pessac – France
Possibility to pursue the internship until the end of JULY: YES <input checked="" type="checkbox"/> / NO <input type="checkbox"/>	
Possibility to offer the internship to a M1 if not attributed to a M2: YES <input checked="" type="checkbox"/> / NO <input type="checkbox"/>	