



INTERNSHIP PROGRAM FOR INTERNATIONAL STUDENTS

INTERNSHIP SUBJECT FORM

Name of the Host Laboratory	Laboratoire de Chimie Moléculaire
Website of the Host Laboratory	https://portail.polytechnique.edu/lcm/en
Research Group	
Internship Supervisor	Dr Corinne Gosmini
Internship Subject	Cobalt-catalyzed cross-coupling reactions
Student's level	<input checked="" type="checkbox"/> Advanced Undergraduate Students (3 rd or 4 th year) <input checked="" type="checkbox"/> Master's students (1 st or 2 nd year) <input checked="" type="checkbox"/> PhD students
Proposed Duration	<input checked="" type="checkbox"/> 3 months <input checked="" type="checkbox"/> 4 months <input checked="" type="checkbox"/> 5 months <input checked="" type="checkbox"/> 6 months
Prerequisites	Organic synthesis
Internship description (max. 15 lines)	<p>Homogeneous organometallic catalysis plays an important role in the development of modern environmentally benign and atom-economical chemical industry. While the complexes of noble transition metals still remain the prominent actors in this area, the search for new alternatives based on their more abundant, inexpensive and less toxic first row congeners clearly becomes one of the emerging trends of the present century. Thus, the recent development of catalysis based on cobalt corresponds perfectly to this tendency. In our group, we develop new Cobalt-catalyzed cross-coupling reactions either from organozinc species or directly from Two electrophiles. Currently, we tried to couple other compounds than organic halides. The direct functionalization of C-O or C-N bonds is indeed more straightforward and generate less waste than classical protocol involving their transformation into more reactive C-halogen bonds. In his internship, the student will develop both synthesis of alkylzinc species and coupling with C-O or C-N bonds. These reactions will be performed using cobalt catalysis.</p>