

Conférence - CEISAM - UMR CNRS 6230

**Mercredi 08 octobre 2014
10h00 - Salle Marie Curie**

Jean-luc MONTCHAMP

Professor - Texas Christian University

Recent Advances in Phosphorus Chemistry

Organophosphorus compounds are currently synthesized from phosphorus trichloride (PCl_3), even though the final consumer products do not contain reactive phosphorus-chlorine bonds. In order to bypass phosphorus trichloride, significant interest has been devoted to functionalizing elemental phosphorus (P_4 , the precursor to PCl_3), red phosphorus (P_{red}), or phosphine (PH_3). Yet, phosphinates (hypophosphorous derivatives such as H_3PO_2 and its alkali salts) are already available on an industrial scale and are the most environmentally benign, but their use as phosphorus trichloride replacements has been completely overlooked. An overview of some of the methodologies we have developed for P-C and P-O bond-forming reactions, as well as some selected applications, will be presented. Particular emphasis will be placed on transition-metal catalyzed processes such as hydrophosphinylation and cross-coupling. Recent progress in “P-H bond activation” and in the synthesis of *P*-stereogenic compounds will also be discussed.