UE 1.6 – Stoichiometric organometallics: chimio-, regio- and diastereoselectivity – 3 ECTS

Instructors’ names:
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Pedagogical objectives:
To provide sufficient knowledge regarding the formation and reactivity of the most frequent and useful stoichiometric organometallics. Topics will include organometallics derived from magnesium, lithium, boron, aluminum, copper, and zinc. The course will focus on the various aspects of selectivity.

Course pre-requisites:
Have enough knowledge about the chemical structure and reactivity of main functional groups of organic chemistry.

Program:
- Preparation, structure, stability and comparative study of the reactivity of polar organometallics derived from elements belonging to the main group.
- Organocopper chemistry (stoichio only).
- Formation, structure and reactivity of enolates and their aza-analogues (alkylation, aldolisation...).
- Facial diastereoselectivity (substrate, auxiliary and reagent control)

Acquired skills:
Understanding the concepts governing the synthesis and reactivity of organometallics of the “main group”. At the end of this course, students are expected to be able to harness this knowledge in the regio- and stereo-selective formation of carbon–carbon bonds included in polyfunctional organic structures.

Evaluation:
Final exam (100%).