

Handling and analyzing reactive compounds under inert atmosphere (or LABFUN)

Carbanionic compounds such as organolithium or Grignard reagents are important compounds in organic synthesis such as for deprotonation or C-C bond formation reactions and are frequently applied in academic research as well as in industrial processes. Owing to their negative charge, these compounds are usually highly reactive and thus require handling under strict anhydrous reaction conditions with dry solvents. This can nowadays easily be accomplished by standard inert gas techniques and purification systems, which allow the exclusion of oxygen and moisture and thus the use of sensitive compounds.



In this advanced modul, students will be introduced into synthetic work with carbanionic compounds such as organolithium or Grignard reagents. They will learn how to handle such sensitive compounds and how to monitor reactions. In a lab tour, the students will first learn about the equipment necessary to safely handle and spectroscopically characterize such type of compounds. They will learn how to set up and run reactions with sensitive compounds in solution using Schlenk line techniques, gloveboxes and cannula techniques. Furthermore, students will be introduced to reaction monitoring by in situ IR as well as benchtop NMR spectroscopy.