Universitat Autònoma de Barcelona  
Departament de Química  
Proposta projecte de Treball Fi de Màster (TFM) curs 2019-2020  
(espai màxim 1 pàgina)

Títol del projecte: *Asymmetric introduction of the CF₃ group through a 1,4-addition.*

Professor que presenta el projecte de TFM: Prof. Adelina Vallribera and Dr. Albert Granados

Resum del projecte proposat:

The 1,4 asymmetric addition of the -CF₃ group has received considerable attention but it is still a challenging objective to the scientific community. From the first articles of Olah and Prakash in 1989 to the present time, there are a large number of groups working in this area. However, the asymmetric version is not resolved and, therefore, it is a field to be explored. We plan to use the commercial Ruppert-Prakash reagent (TMSCF₃) which is a cheap source of nucleophilic CF₃. Michael acceptors that have two groups that allow coordination to the metallic center (lanthanide) by two donor oxygen atoms will be used. This coordination will favor the reaction, decreasing the energy of the LUMO and generating a specific spatial conformation that can favor facial discrimination. The selection of the Ruppert-Prakash reagent activator is very important, we will use fluoride sources such as KF, CsF or TBAF. An important parameter to control reactivity may be the solubility. Other classical sources of activation of silylated nucleophiles will also be tested. Our plan is to extend this chemistry to –CF₂CF₃ group using TMSCF₂CF₃ reagent.

Dades de contacte amb els professors
Direccions de correu electrònic: adelina.vallribera@uab.cat; albert.granados@uab.cat
Número telèfon: 93.581.3045