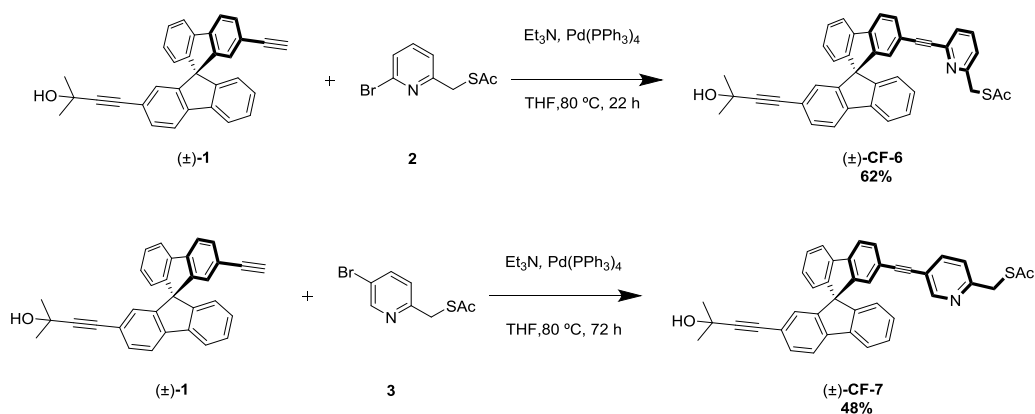


Project

Development of Chiroptical Spiro Compounds for Surface Functionalization

Chiral Frameworks (CFs), molecular entities bearing **chiral moieties**, could be used for the development of novel materials that may play a substantial role in the study of biological systems.^[1] Furthermore, construction of **chiral surfaces** by the self-assembly process of **CFs** onto achiral substrates is a very promising strategy for catalytic and sensing applications. Recently, it has been shown that **CFs** bearing **chiral axes** are capable of forming surface-confined nanostructures orthogonal to the substrate. These **Up-standing Chiral Architectures (UCAs)** offer the possibility for further functionalization of the exposed end to adapt to a particular use. Nevertheless, the instability of this first example at ambient conditions hampered its applicability.^[2]

According to the strategy of **Self-Assembled Monolayers (SAMs)**, stable molecule-substrate interactions are achievable by the incorporation of thiols as the most employed head groups.^[3] In this respect, we proposed to optimize the synthesis and enantiomeric resolution of **CF-6** and **CF-7** bearing **Spirane** as chiral motives and thiol group as the head group. The student will resolve the enantiomers and study their chiroptical properties. In addition the student will also have the opportunity to get familiar with the surface functionalization process.



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