

## STEELE

<b>Project partners</b>
Université de Haute-Alsace, Universität Freiburg, Universität Basel
<b>Project duration / Awarded funding</b>
01/03/2021 – 28/02/2023 / 45,000€
<b>Short description of the project</b>
Innovations in chemistry rely on the invention of new concepts, reactions and technologies that allow the straightforward elaboration of molecular complexity with tailor-made properties. In this regard, methods leading to heterocycles are essential since these small molecules constitute the core structure of numerous biologically active compounds of natural or synthetic origins. The STEELE project aimed at unlocking the chemical synthesis of a class of heterocycles called indoles, with two desirable properties: the presence of emergent fluorinated substituents and of so-called stereogenic centers. STEELE gathered three research groups with complementary expertise in heterocyclic chemistry, fluorine chemistry and asymmetric synthesis.
<b>Concrete implementation of the project (What was the funding used for?) (max. 500 characters (including spaces))</b>
We used the funding to hire Master 1 and Master 2 students at UHA and to buy chemical reagents, inert gas, classical consumables, and small equipments for the research project. We have also shipped by regular mail the key building blocks prepared in Mulhouse to the two partners in Basel and Freiburg.
<b>Project result(s) and continuation of collaboration (max. 500 characters (including spaces))</b>
We have explored the reactivity of a class of heterocycles substituted by fluorinated groups (trifluoromethyl and pentafluorosulfanyl) that are relevant to drug discovery. In Mulhouse, we have prepared the key building blocks; the Basel and Freiburg partners have investigated their reactivity in organocatalyzed- and transition-metal catalysed transformations. The results demonstrate the low reactivity of the heterocycles and the low regioselectivity of the bond formation events.
<b>Further information (links, articles, photos)</b>