

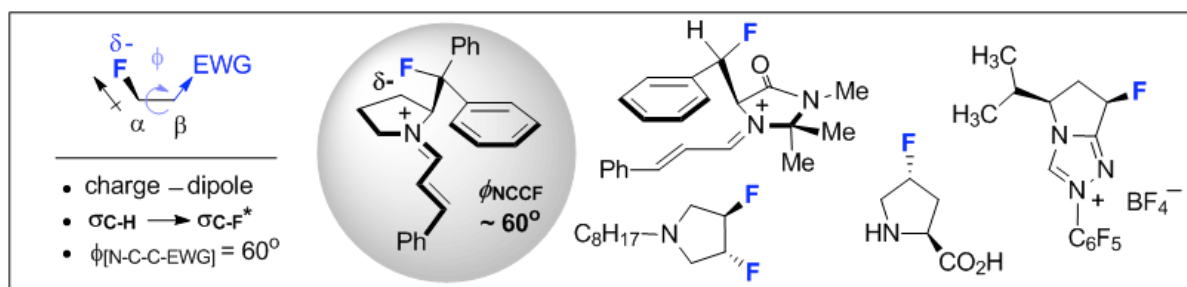
Physical Organic Principles in Organic Reaction Design.



Ryan GILMOUR

Organic Chemistry Institute, Westfälische Wilhelms-Universität Münster, GERMANY

Molecular design strategies that profit from the intrinsic stereoelectronic and electrostatic effects of fluorinated organic molecules have mainly been restricted to bio-organic chemistry. Indeed, many fluorine conformational effects remain academic curiosities with no immediate application. However, the renaissance of organocatalysis offers the possibility to exploit many of these well-described phenomena for molecular preorganization. In this lecture, examples of catalyst refinement by introduction of an aliphatic C-F bond, which functions as a chemically inert steering group for conformational control, will be discussed.



Key references

- 1) M. C. Holland, S. Paul, W. B. Schweizer, K. Bergander, C. Mück-Lichtenfeld, S. Lakhdar, H. Mayr and R. Gilmour, *Angew. Chem.* **2013**, *125*,8125; *Angew. Chem. Int. Ed.* **2013**, *52*, 7967.
- 2) L. E. Zimmer, C. Sparr and R. Gilmour, *Angew. Chem.* **2011**, *123*, 12062; *Angew. Chem. Int. Ed.* **2011**, *50*, 11860.
- 3) C. Sparr and R. Gilmour, *Angew. Chem.* **2010**, *122*, 6670; *Angew. Chem. Int. Ed.* **2010**, *49*, 6520.
- 4) C. Sparr, W. B. Schweizer, H. M. Senn and R. Gilmour, *Angew. Chem.* **2009**, *121*, 3111; *Angew. Chem. Int. Ed.* **2009**, *48*, 3065.