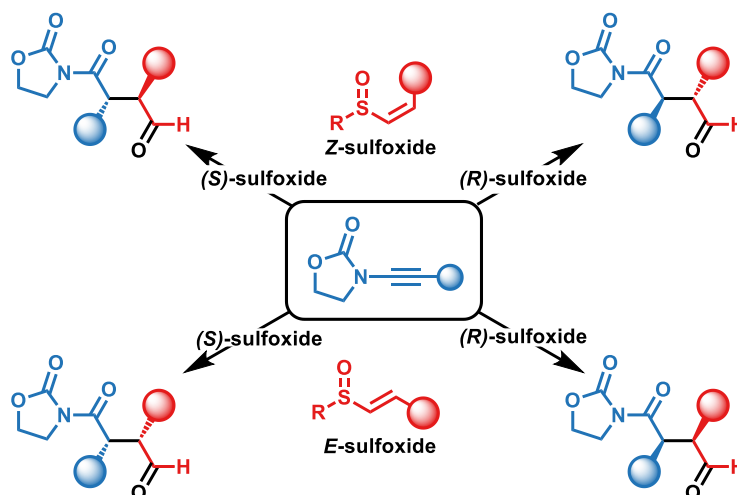


Making Challenging C–C Bonds with Sulfoxides

Speaker: Immo Klose
Email: Immo.klose@univie.ac.at
Institute: Institute for Organic Chemistry

The synthesis of 1,4-dicarbonyl compounds remains an open challenge for organic chemists owing to the need to combine synthons of ‘unnatural’ polarity. In particular, diastereo- and enantioselectivity as well as the inclusion of quaternary centres are rarely addressed issues, despite the abundance of richly decorated 1,4-dicarbonyl motifs in natural products and drug scaffolds.

Following earlier investigations of sulfoxide rearrangements,[1] we have now developed a new protocol that allows stereodivergent access to all possible four stereoisomers of the 1,4-dicarbonyl motif, selectively and predictively (Figure 1).[2] This Brønsted acid-catalyzed reaction uses easily prepared vinyl sulfoxides to construct the new key carbon-carbon bond through chirality transfer from sulfur to carbon in a pivotal, traceless charge-accelerated sulfonium rearrangement.



References:

- [1] D. Kaldre, B. Maryasin, D. Kaiser, O. Gajsek, L. Gonzalez, N. Maulide, *Angew. Chem. Int. Ed.* **56** (2017), 2212.
[2] D. Kaldre, I. Klose, N. Maulide, *Science* **361** (2018), 664.