

Organic Chemistry

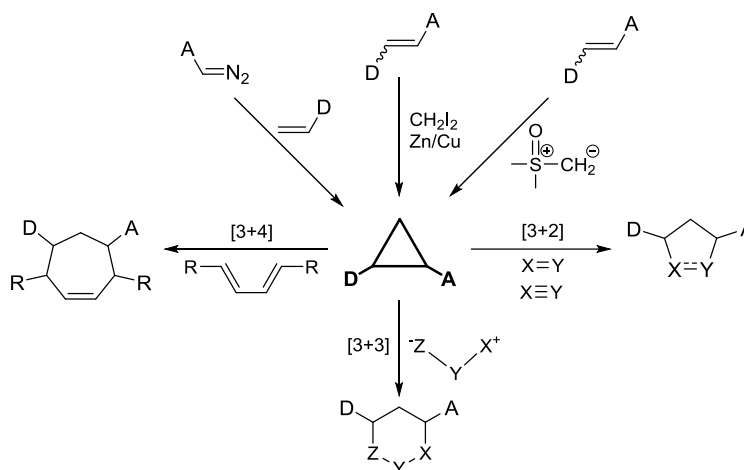
Donor-Acceptor Cyclopropanes in the Synthesis of Carbo- and Heterocycles

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Donor-acceptor cyclopropanes (DACs) are three-membered carbocycles containing vicinal donor and acceptor substituents. Such an arrangement of the functional groups leads to the unique reactivity of these compounds.[1] DACs are currently attracting considerable attention due to the diversity of their synthetic applications. Cycloaddition reactions involving DACs enable the preparation of various carbo- and heterocycles, some of which demonstrate useful biological activity.[2–4] In this talk, we will consider the principal methods for the synthesis of DACs and their key transformations, including recent examples of dimerization and cycloaddition reactions with diverse substrates (**Scheme 1**). Diastereo- and enantioselective variants of these transformations will also be discussed.



Scheme 1. Typical synthetic routes to DACs and their key transformation types.

- [1] Schneider, T. F.; Kaschel, J.; Werz, D. B. *Angew. Chem. Int. Ed.* **2014**, *53* (22), 5504–5523. IF = 12.257
- [2] Verma, K.; Banerjee, P. *Adv. Synth. Catal.* **2016**, *358* (13), 2053–2058. IF = 5.451
- [3] Ivanova, O. A.; Trushkov, I. V. *Chem. Rec.* **2019**, *19* (11), 2189–2208. IF = 5.387
- [4] Singh, P.; Varshnaya, R. K.; Dey, R.; Banerjee, P. *Adv. Synth. Catal.* **2020**, DOI: 10.1002/adsc.201901332. IF = 5.451