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Confinement-Controlled, either *syn*- or *anti*-Selective Catalytic Asymmetric Mukaiyama Aldolizations of Propionaldehyde Enolsilanes

J. Am. Chem. Soc. **2021**, *143*, 14475–14481, DOI: 10.1021/jacs.1c07447.

Catalytic Asymmetric Aldolization of Propanal Enol Silanes

Category

Organo- and Biocatalysis

Key words

confinement

asymmetric catalysis

stereoselectivity

Mukaiyama reaction

Synfact
of the
Month

Significance: List and co-workers report an asymmetric Mukaiyama aldolization controlled by a confined chiral imidodiphosphorimidate catalyst. By using catalysts **1** and **2**, *syn*- or *anti*-aldol products can be obtained from (*E*)- or (*Z*)-enolsilanes, respectively, in high yields and with high diastereo- and enantioselectivities.

Comment: Compared with the reported pioneering work (S. E. Denmark, S. K. Ghosh *Angew. Chem. Int. Ed.* **2001**, *40*, 4759), this method presents an improved, fully atom- and step-economic strategy. Ultimately, it could streamline the syntheses of complex oligopropionates.

SYNFACTS Contributors: Benjamin List, Yihang Li
Synfacts 2021, 17(11), 1257 Published online: 19.10.2021
DOI: 10.1055/s-0041-1737044; Reg-No.: B08721SF

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