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Reactivity of 2-methylene-1,3-dicarbonyl compounds:catalytic enantioselective Diels-Alder reaction

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The catalytic enantioselective Diels-Alder reaction of 1,1-dicarbonyl ethenes **3** with cyclopentadiene in the presence of Ti-TADDOLs, Mg-Ph-box and Mg-Ph-mox complexes was investigated. Although both *exo*- and enantioselectivity with Ti-TADDOL catalysts were poor, they were much improved using Mg-Ph-box or Mg-Ph-mox complexes as chiral catalysts. Thus, **3** was an efficient two-point binding dienophile and the non- C_2 -symmetric Ph-mox **8** could be used as a chiral ligand.