Asymmetric Catalysis with MOFs Prepared via Chiral Induction Effect

**Significance:** Homochiral metal-organic frameworks (MOFs) were prepared through the chiral induction effect. Thus, the homochiral crystallization of Ce(NO₃)₆·6H₂O and H₄MDIP was performed with L- or D-BCIP as chiral inducers in water to give Ce-MDIP₁ and Ce-MDIP₂ (where no BCIP was installed), which exhibited Cotton effects exactly opposite to each other. Ce-MDIPs promoted the cyanosilylation to give the corresponding cyanohydrin derivatives quantitatively with 93 to >98% ee.

**Comment:** Ce-MDIP₁ was reused twice without significant loss of catalytic activity. Cd-TBT was also prepared from Cd(ClO₄)₂·6H₂O and H₃TBT under similar conditions. Cd-TBT mediated the direct aldol reaction of aldehydes and cyclohexanone to afford the corresponding β-hydroxy ketones in 8–97% yield with 58–61% ee in ten days.