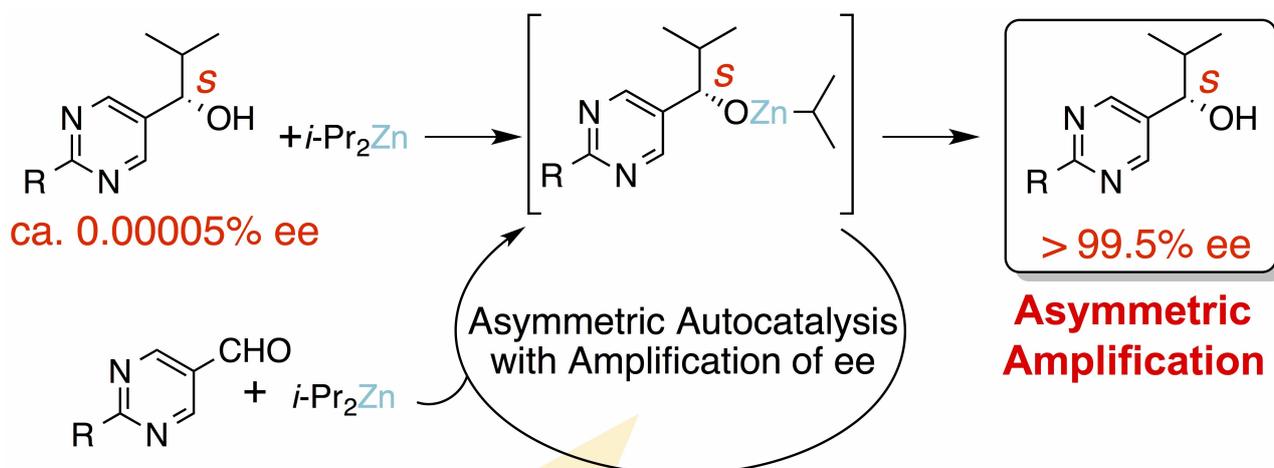
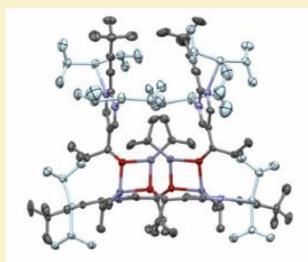


Research on molecular chirality and organic synthesis using organometallic catalysis

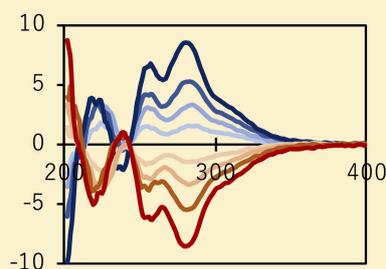
Arimasa MATSUMOTO [Chemistry Course]



Mechanistic Study Based on Analysis of Organometallic Intermediates



X-ray Diffraction



CD Spectrum

Mechanistic Study of Asymmetric Autocatalysis

My research interest is development of new organometallic reactions based on their mechanistic understandings. Recent research topic is especially focusing on the study of asymmetric autocatalysis. The addition reaction of alkylzinc to the pyrimidinecarbaldehyde become the asymmetric autocatalytic reaction and induce a significant amplification of enantiomeric excess in the reaction catalytic cycle. This rare example of asymmetric amplification is highly interesting topic from the view point of both asymmetric synthesis and origin of chirality. The mechanism of this reaction was investigated by trapping the reaction intermediate by single crystal X-ray diffraction analysis and CD spectrum. In addition to the study of asymmetric autocatalysis, crystal chirality and CD spectrum research are also conducted.

Keywords : Organometallic Chemistry, Chirality, Asymmetric Synthesis, Asymmetric Autocatalysis