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Crystallization-Induced Asymmetric Transformations and Chiral Organometallics. J.W. Faller and N. Sarantopoulos, Dept. of Chemistry, Yale Univ., New Haven, CT 06520, USA.

Spontaneous resolution can sometimes provide a method of separation of enantiomers of chiral organometallics. In some situations there are slow equilibria in solution which involve racemization of enantiomers or interconversion of diastereomers and crystallization provides isolation of a single enantiomer or diastereomer. This can provide a route for the preparation of organometallics and catalysts for use in asymmetric synthesis.

The combined use of circular dichroism, 2D NMR, molecular modeling and absolute configuration determination via X-ray crystallography can provide a detailed understanding of this approach to the isolation of chiral non-racemic metal complexes. Applications to allyl complexes of palladium and molybdenum with ligands that are enantiomerically pure, racemic, or can rapidly racemize will be discussed.