

Organocatalysis and New Chemical Concepts

Tetrahedron Young Investigator Award

David MacMillan

Guest editor: Stephen F. Martin

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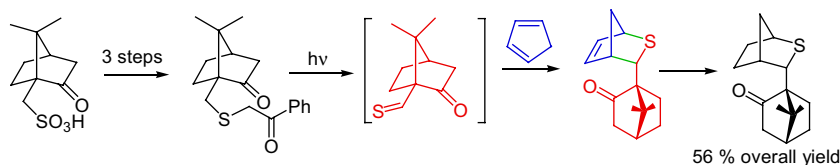
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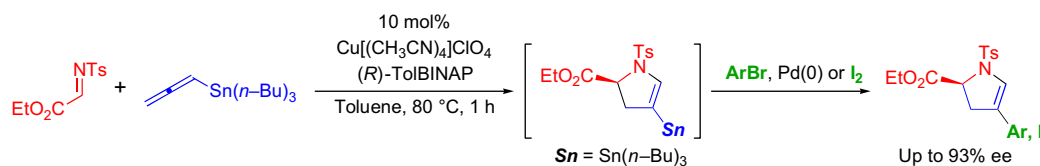
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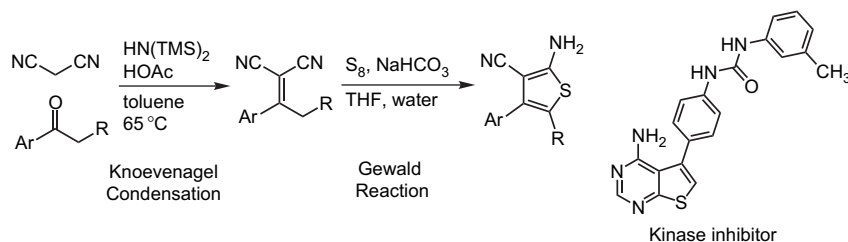
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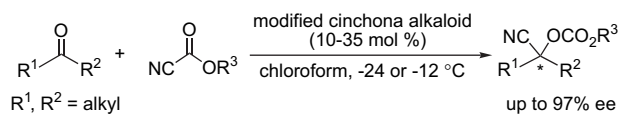
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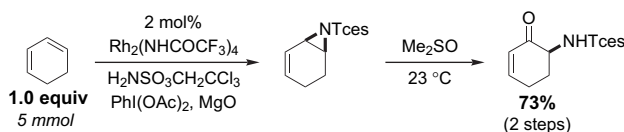
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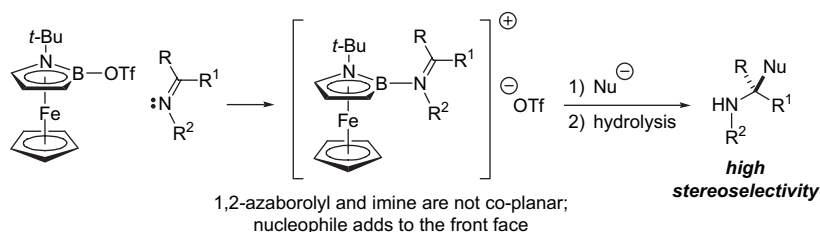
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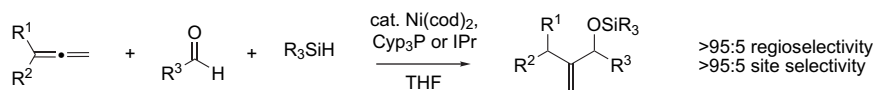
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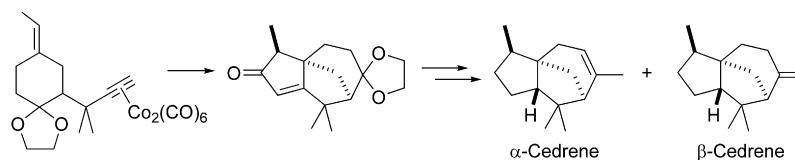
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**Use of a highly effective intramolecular Pauson–Khand cyclisation for the formal total synthesis of (±)-α- and β-cedrene by preparation of cedrone**

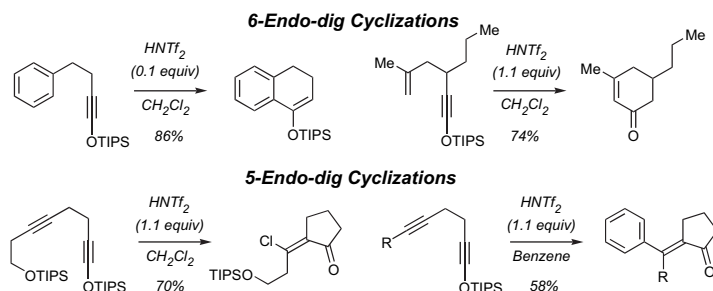
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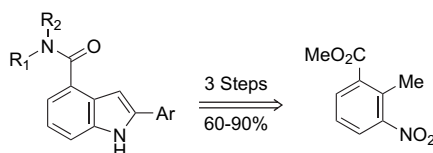
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**Preparation of 2-arylindole-4-carboxylic amide derivatives**

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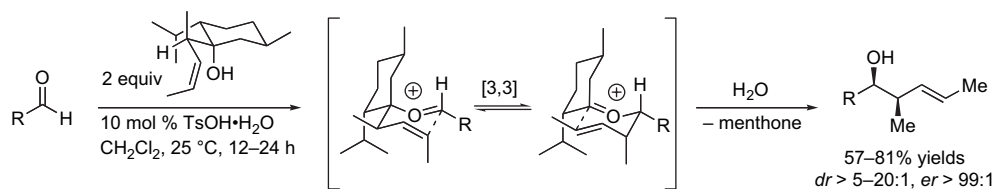
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A highly enantio- and diastereoselective 1,3-dimethylallylation of aldehydes

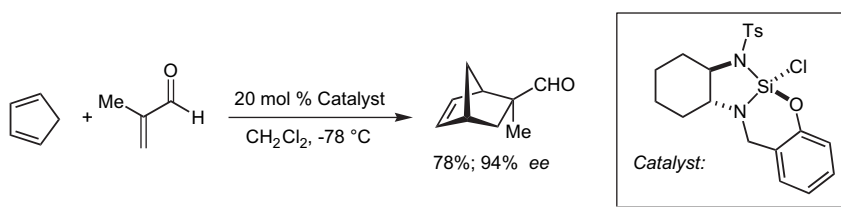
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Yu Yuan, Amy J. Lai, Christina M. Kraml and Chulbom Lee*

**Strained silacycle-catalyzed asymmetric Diels–Alder cycloadditions: the first highly enantioselective silicon Lewis acid catalyst**

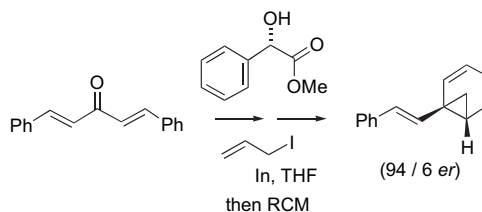
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Katsumi Kubota, Christopher L. Hamblett, Xiaolun Wang and James L. Leighton*

**Enantioselective homoallyl-cyclopropanation of dibenzylideneacetone by modified allylindium halide reagents—rapid access to enantioenriched 1-styryl-norcarene**

pp 11402–11412

Guy C. Lloyd-Jones,* Philip D. Wall, Jennifer L. Slaughter, Alexandra J. Parker and David P. Laffan

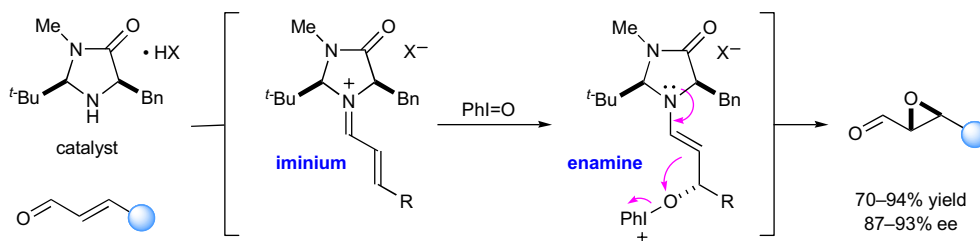


Methyl mandelate has been identified as a simple and inexpensive stoichiometric asymmetric modifier for the homoallyl-cyclopropanation of dibenzylideneacetone. Subsequent Ru-cat. RCM provides rapid entry to enantiomerically enriched 1-styryl-norcarene.

Enantioselective organocatalytic epoxidation using hypervalent iodine reagents

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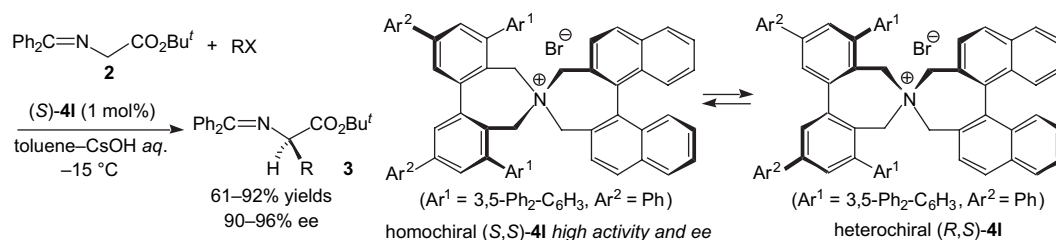
Sandra Lee and David W. C. MacMillan*



Asymmetric phase-transfer catalysis of homo- and heterochiral quaternary ammonium salts: development and application of conformationally flexible chiral phase-transfer catalysts

Takashi Ooi, Yukitaka Uematsu, Minoru Kameda and Keiji Maruoka*

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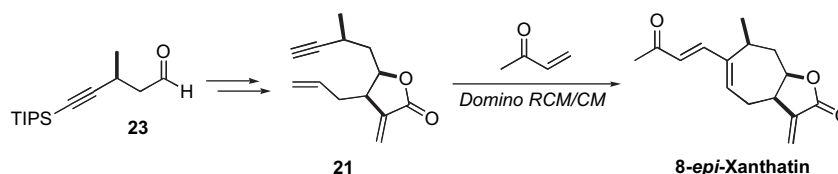


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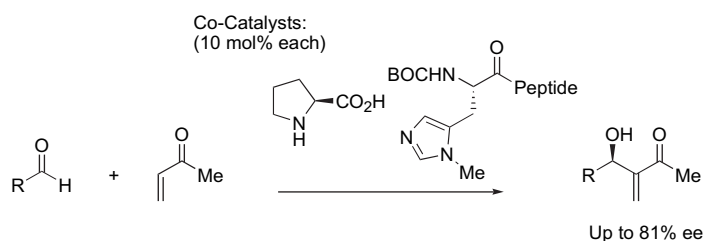
David A. Kummer, Jehrod B. Brenneman and Stephen F. Martin*



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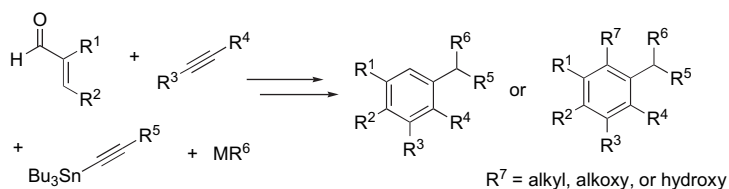
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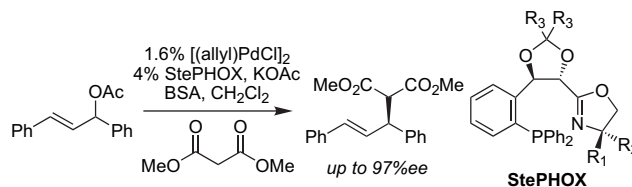
Ahmad Samih ElDouhaibi, Mario Lozanov and John Montgomery*



StePHOX, a new family of optically active, tunable phosphine–oxazoline ligands: syntheses and applications

Stéphane Trudeau and James P. Morken*

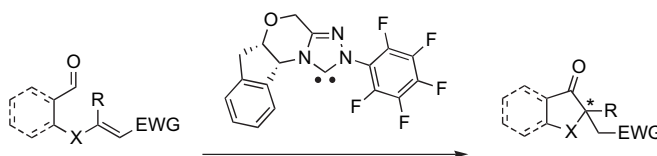
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Enantioselective formation of quaternary stereocenters using the catalytic intramolecular Stetter reaction

Jennifer L. Moore, Mark S. Kerr and Tomislav Rovis*

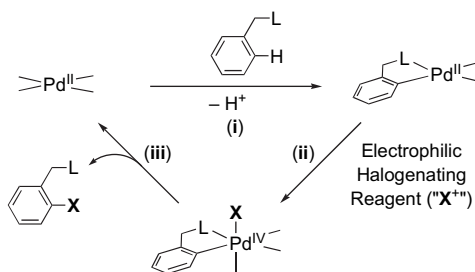
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Scope and selectivity in palladium-catalyzed directed C–H bond halogenation reactions

Dipannita Kalyani, Allison R. Dick, Waseem Q. Anani and Melanie S. Sanford*

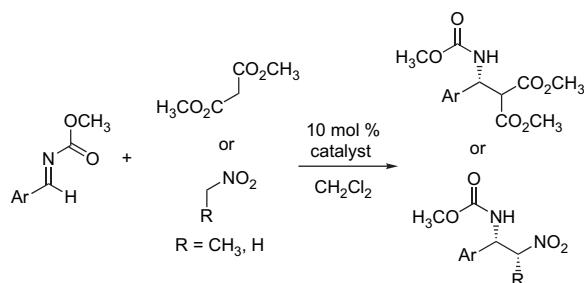
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A general organic catalyst for asymmetric addition of stabilized nucleophiles to acyl imines

Christiane M. Bode, Amal Ting and Scott E. Schaus*

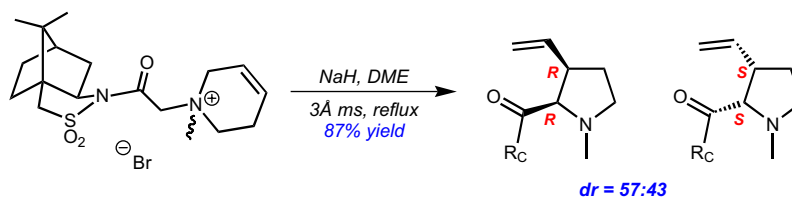
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Asymmetric ammonium ylid rearrangements: the effect of nitrogen asymmetry

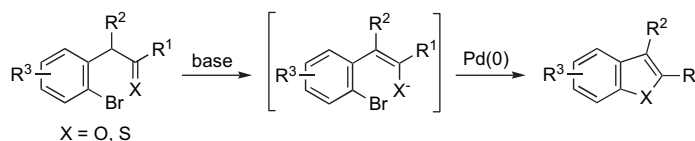
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J. B. Sweeney,* Ali Tavassoli and James A. Workman

**Palladium-catalysed intramolecular enolate *O*-arylation and thio-enolate *S*-arylation: synthesis of benzo[*b*]furans and benzo[*b*]thiophenes**

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Michael C. Willis,* Dawn Taylor and Adam T. Gillmore

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*Corresponding author

i⁺ Supplementary data available via ScienceDirect**COVER**

The graphic illustrates three components which are essential for the success of the iminium catalyzed epoxidation reported in 'Enantioselective organocatalytic epoxidation using hypervalent iodine reagents'. First (a) the defined architecture of activated iminium species derived from the imidazolidinone catalyst **1** that enables high levels of enantioselectivity in a number of organic transformations. Second (b) the need for the slow release of iodosobenzene from an iminoiodinane source under aqueous conditions to ensure optimal levels of catalyst efficiency in the reported epoxidation, and last (c) the compatibility of organic catalysts with air and water.

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