
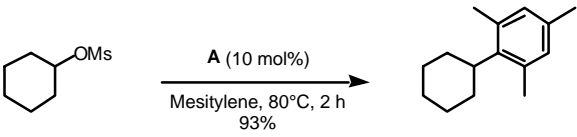
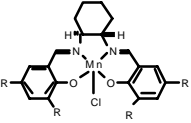
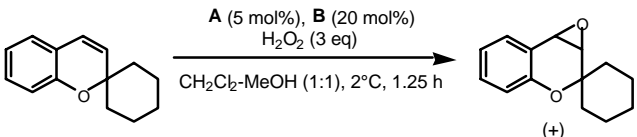
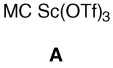
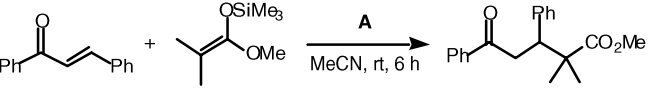


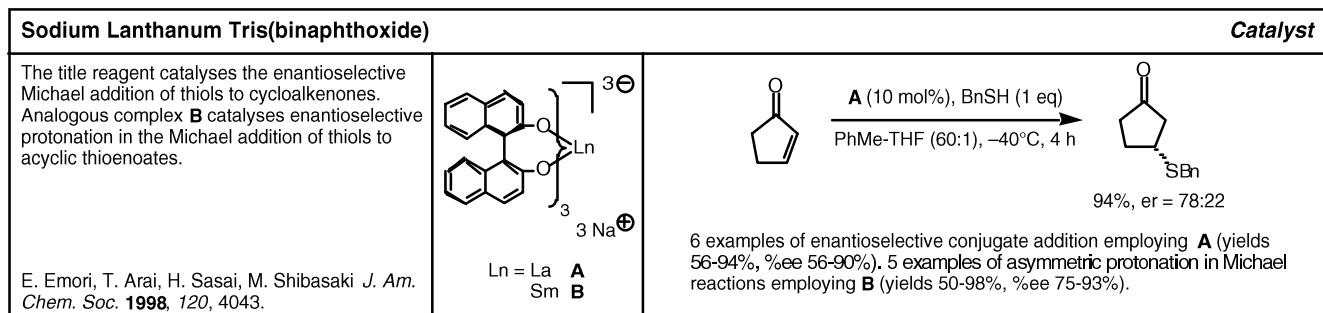
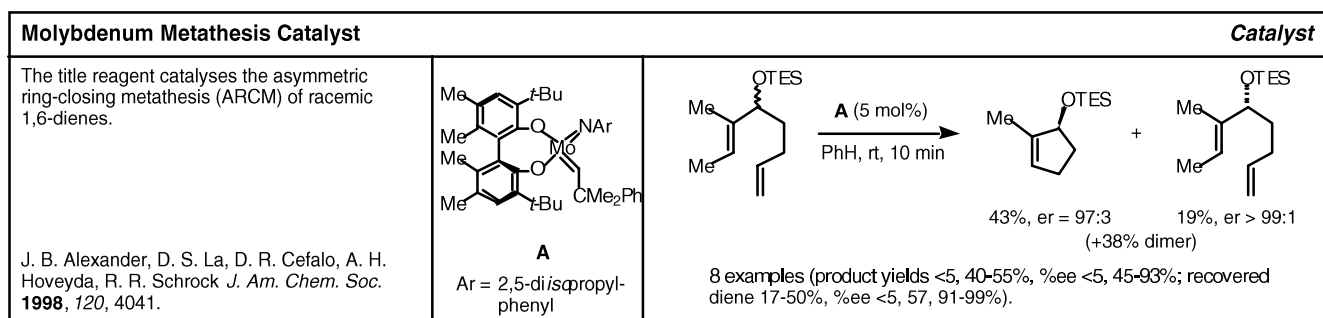
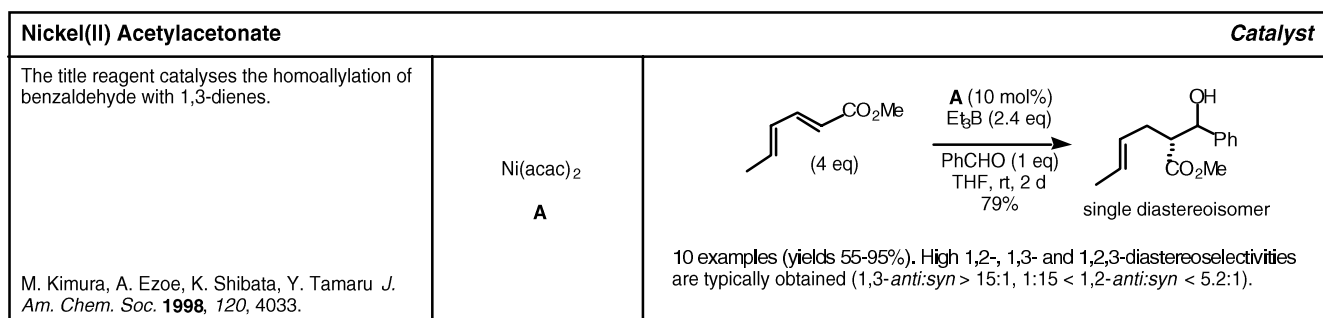
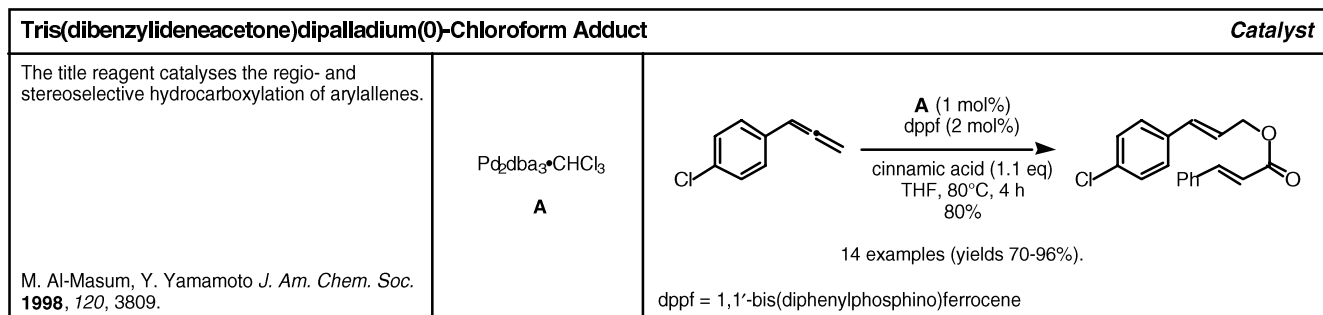
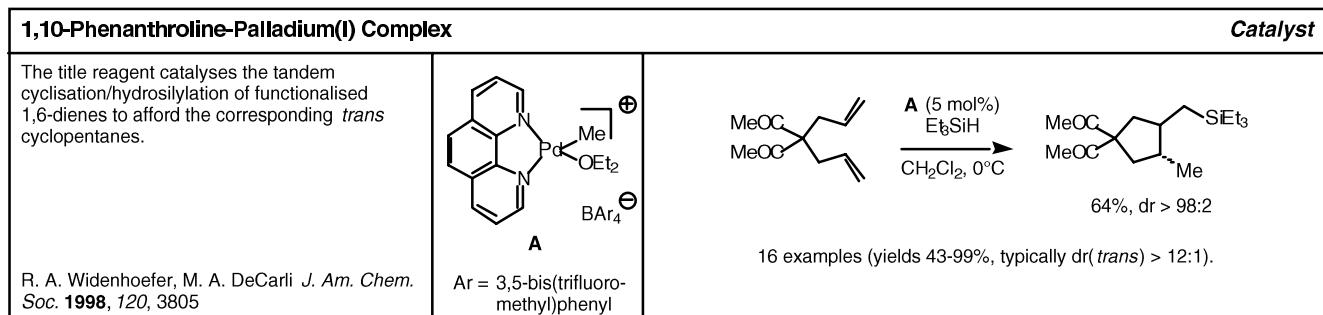
SYNTHESIS ALERTS

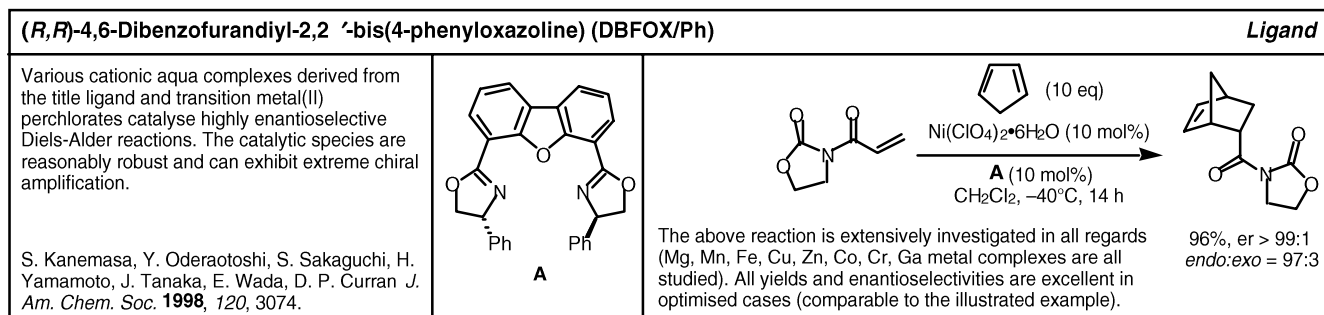
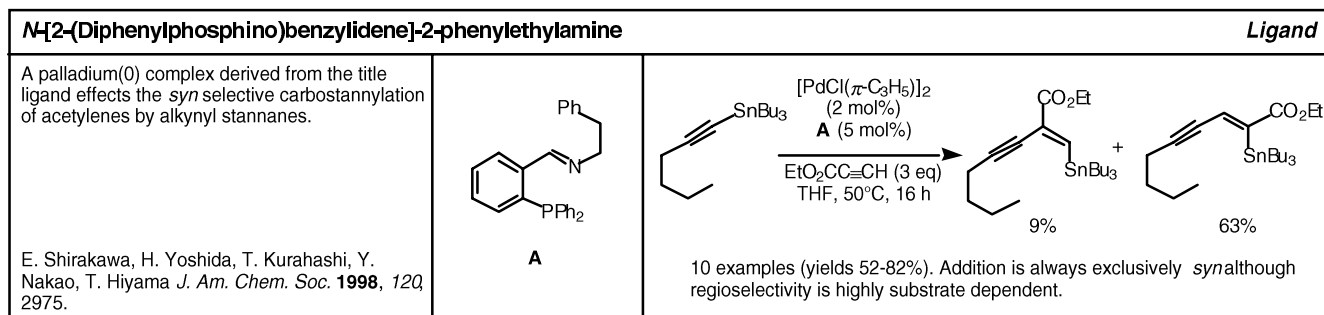
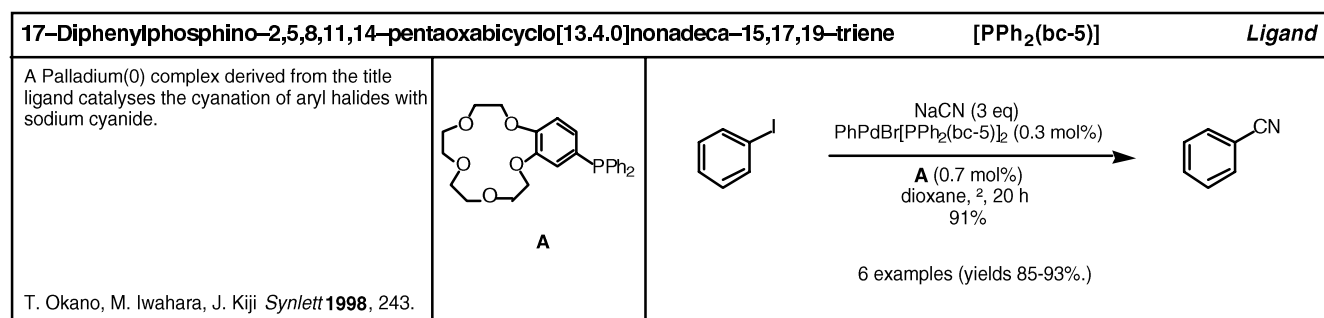
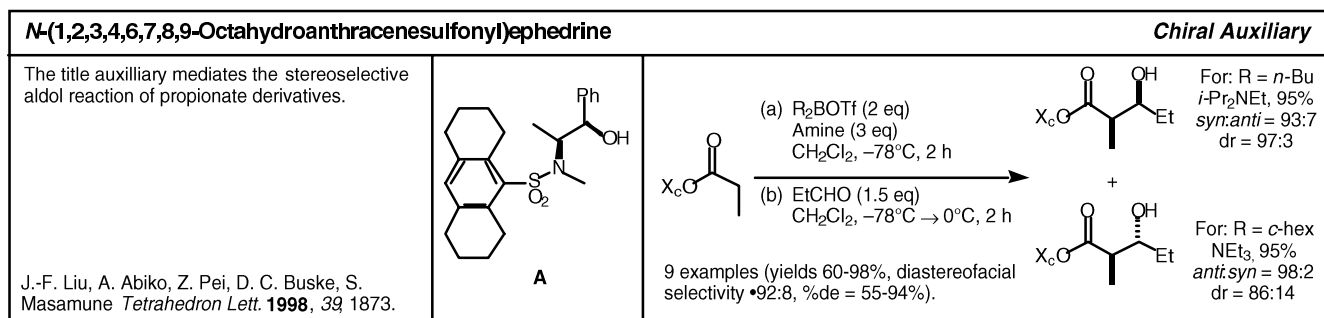
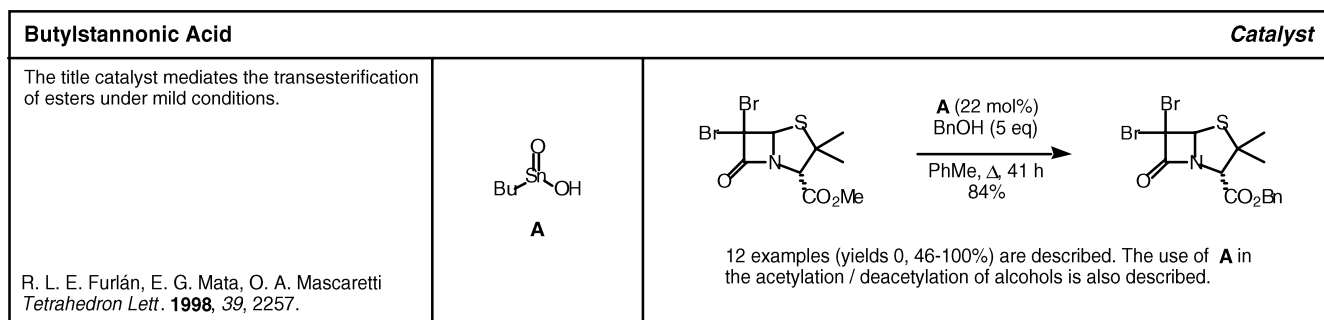
Synthesis Alerts is a monthly feature to help readers of Synthesis keep abreast of new reagents, catalysts, ligands, chiral auxiliaries, and protecting groups which have appeared in the recent literature. Emphasis is placed on new developments but established reagents, catalysts etc are also covered if they are used in novel and useful reactions. In each abstract, a specific example of a transformation is given in a concise format designed to aid visual retrieval of information.

Synthesis Alerts is a personal selection by Paul Blakemore, Stephen Brand, John Christopher, Emma Guthrie, Philip Kocienski, Louise Lea, Graham McAllister, Russell McDonald and Robert Narquizian of Glasgow University. The journals regularly covered by the abstractors are: *Angewandte Chemie International Edition*, *Bulletin of the Chemical Society of Japan*, *Chemistry A European Journal*, *Chemistry Letters*, *European Journal of Organic Chemistry*, *Helvetica Chimica Acta*, *Heterocycles*, *Journal of Organic Chemistry*, *Journal of the American Chemical Society*, *Organometallics*, *Synlett*, *Synthesis*, *Tetrahedron*, *Tetrahedron Asymmetry* and *Tetrahedron Letters*.

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Scandium(III) Trifluoromethanesulfonate		Catalyst
<p>A catalyses the Friedel-Crafts alkylation of a range of aromatic compounds with methanesulfonates derived from secondary alcohols.</p> <p>H. Kotsuki, T. Oshisi, M. Inoue <i>Synlett</i> 1998, 255.</p>	 <p>A</p>	 <p>11 examples (yields 36-98%). The catalyst can be reused without a significant loss of activity.</p>
Chiral (Salen) Mn(III) Complex / Ammonium Acetate		Catalyst
<p>The title reagent pair catalyse the asymmetric epoxidation of various unfunctionalised olefins by hydrogen peroxide.</p> <p>P. Pietikäinen <i>Tetrahedron</i> 1998, 54, 4319.</p>	 <p>R = t-Bu A</p> <p>NH₄OAc B</p>	 <p>3 examples given (yields 71-90%, %ee 84-96%).</p>
Microencapsulated Scandium(III) Trifluoromethanesulfonate		Catalyst
<p>Polystyrene microcapsules (MC) of scandium(III) triflate were found to catalyse a wide variety of reactions (eg. imino aldol, aldol, Mannich, Michael, Friedel-Crafts acylation). The microencapsulated form of the Lewis acid was found to be more active than monomeric material and could be recovered <i>via</i> simple filtration.</p> <p>S. Kobayashi, S. Nagayama <i>J. Am. Chem. Soc.</i> 1998, 120, 2985.</p>	 <p>MC Sc(OTf)₃ A</p>	 <p>1st use of A, 92% 2nd use of A, 97% 3rd use of A, 95%</p> <p>Various reactions are illustrated (yields >76%). In each case no decrease in activity was noted when the catalyst was re-used in subsequent transformations. The simple preparation of the catalyst is described.</p>





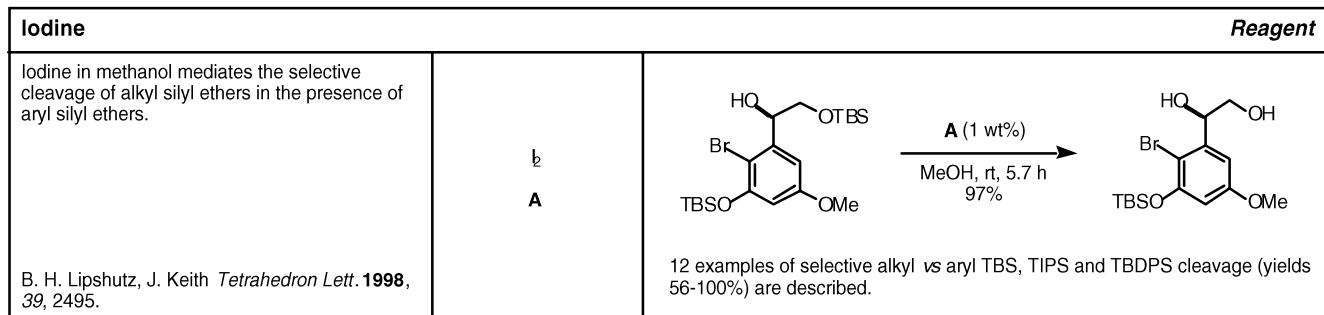
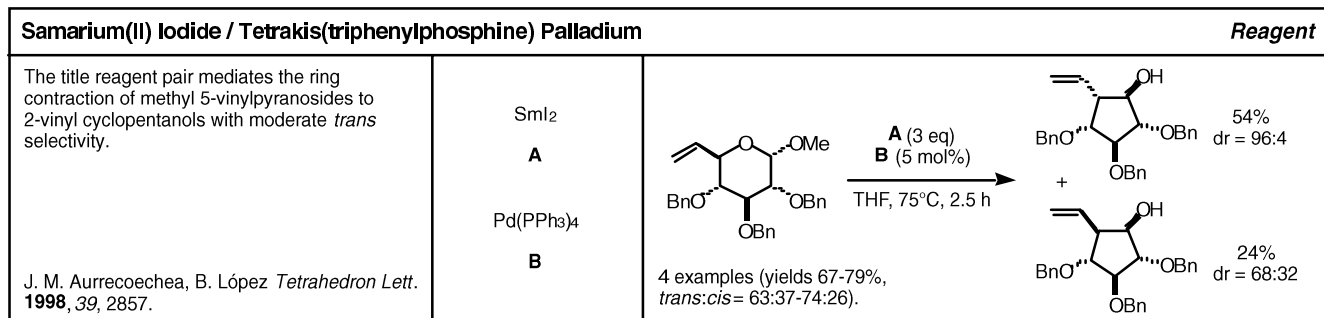
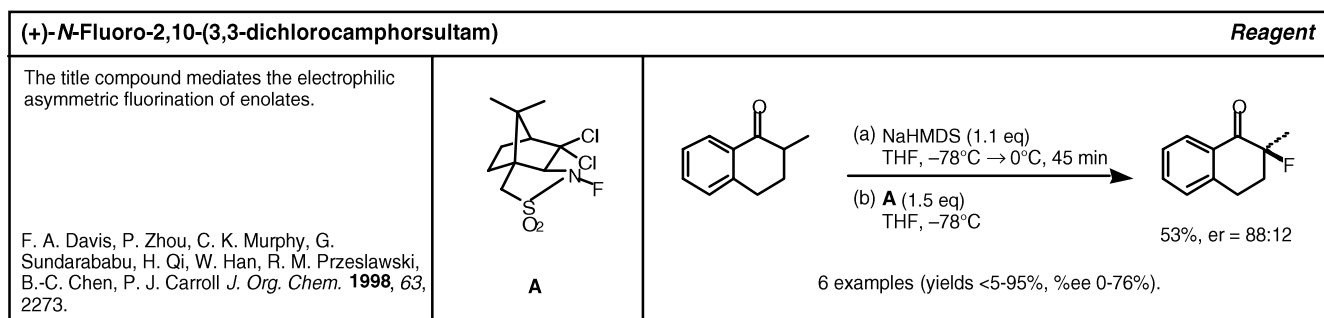
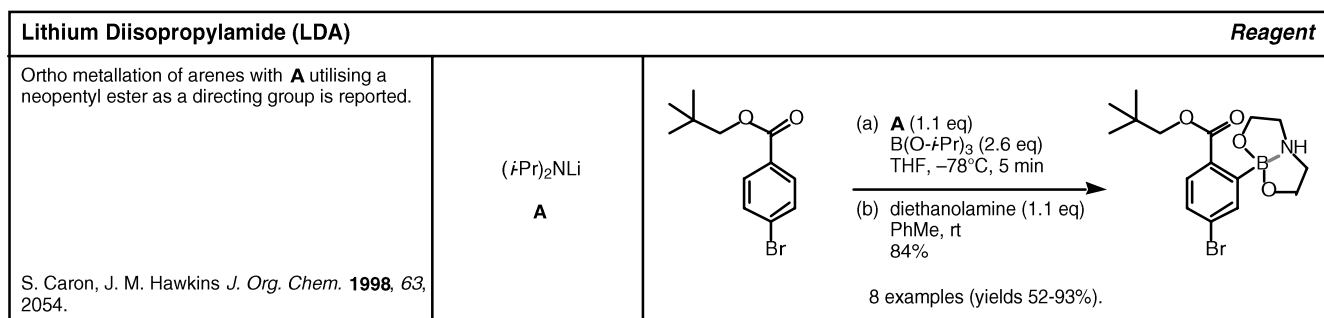
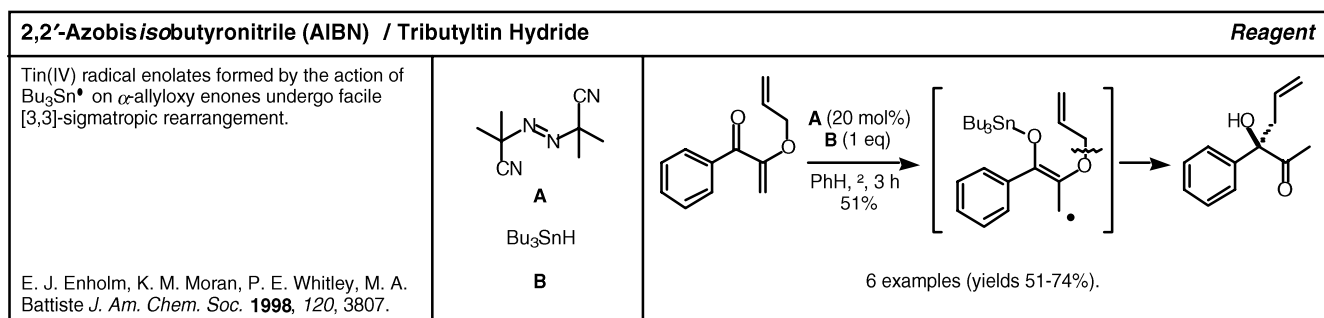
Bis(dihydroquininyl)anthraquinone		Reagent
The title ligands mediate the regioselective aminohydroxylation of cinnamates to phenyl serines with high enantioselectivity.		<p>X = A: 58% (2R,3S) er = 98:2</p> <p>X = B: 62% (2S,3R) er = 96:4</p>
B. Tao, G. Schlingloff, K. B. Sharpless <i>Tetrahedron Lett.</i> 1998 , 39, 2507.	A Alk* = dihydroquininyl B Alk* = quinidinyl	8 enantiocomplementary examples (yields 40-68%, %ee 87-96) are described.

Phenyldimethylsilyllithium		Reagent
Lithium enolates are prepared from silyl enol ethers using the title reagent.		<p>2 examples (yields 74, 77%).</p>
I. Fleming, R. S. Roberts, S. C. Smith <i>J. Chem. Soc., Perkin Trans 1</i> 1998 , 1209.		

Phenyldimethylsilyllithium		Reagent
Toluene- <i>p</i> -sulfonamides of secondary amines and indoles are cleaved by the title reagent in good yield.		<p>7 examples (yields 72-91%). Aziridine toluene-<i>p</i>-sulfonamides are opened by A to give β-silylethyl sulfonamides.</p> <p>Ts = <i>p</i>-toluenesulfonyl</p>
I. Fleming, J. Frackenhof, H. Ila <i>J. Chem. Soc., Perkin Trans 1</i> 1998 , 1229.		

(Trifluoromethyl)trimethylsilane		Reagent
A novel nucleophilic trifluoromethylation of esters with A is reported. The ester functionality is converted into the trifluoromethylcarbonyl group without formation of double addition products and the reaction is applicable to both enolisable and non-enolisable esters.		<p>8 examples (yields 0, 68-95%).</p>
J. Wiedemann, T. Heiner, G. Mloston, G. K. S. Prakash, G. A. Olah <i>Angew. Chem. Int. Ed.</i> 1998 , 37, 820.		

Titanocene Dichloride		Reagent
A 3-step synthesis of indoles is described. Pivotal aryl alkyl dibromide intermediates are realised via regioselective insertion of an olefin into a titanocene benzyne complex.		<p>Subsequent annulation with BnNH₂ under Pd(0) catalysis, followed by deprotection/oxidation affords indole products.</p> <p>10 examples (yields (3-4 steps) 18-54%).</p>
K. Aoki, A. J. Peat, S. L. Buchwald <i>J. Am. Chem. Soc.</i> 1998 , 120, 3068.		



Manganese / Copper(II) Chloride		Reagent
The title reagent pair mediates the homo- and cross-coupling of alkyl halides in aqueous media.	Mn A CuCl ₂ B	<p>8 examples of homo-coupling (yields 52-100%) and 2 examples of cross-coupling with an allyl bromide (yields 62, 79%) are described.</p>
J. Ma, T.-K. Chan <i>Tetrahedron Lett.</i> 1998 , <i>39</i> , 2499.		

Tributyltin Hydride		Reagent
The title reagent mediates the reductive decomplexation of acetylene biscobalthexacarbonyl complexes to form the corresponding <i>cis</i> alkenes.	<i>n</i> -Bu ₃ SnH A	<p>8 examples (yields 35-82%) are described. A similar decomplexation using triethylsilane gives <i>cis</i>-vinylsilanes.</p>
S. Hosokawa, M. Isobe <i>Tetrahedron Lett.</i> 1998 , <i>39</i> , 2609.		

Carbomethoxypropionyl Cyanide		Reagent
The title reagent reacts regioselectively with ketone enolates to form 1,3-dicarbonyl compounds.	 A	<p>6 examples (yields 73-95%) of C-acylation under kinetic and thermodynamic conditions are described.</p>
Q. Tang, S. E. Sen <i>Tetrahedron Lett.</i> 1998 , <i>39</i> , 2249.		

1,1,2,2-Tetraphenyldisilane		Reagent
The title reagent participates in the reduction of alkyl bromides, addition to alkenes and alkylation of heterocyclic bases.	Ph ₂ Hsi-SiHPh ₂ A	 <p>26 examples are described.</p>
O. Yamazaki, H. Togo, S. Matsubayashi, M. Yokoyama <i>Tetrahedron Lett.</i> 1998 , <i>39</i> , 1921.		

Dichloroindium Hydride		Reagent
Dichloroindium hydride mediates the reduction of aldehydes, ketones and alkyl halides.	 A	<p>16 examples (yields 23-99%) are described. Nitro, cyano and ester groups are unreactive.</p>
T. Miyai, K. Inoue, M. Yasuda, I. Shibata, A. Baba <i>Tetrahedron Lett.</i> 1998 , <i>39</i> , 1929.		