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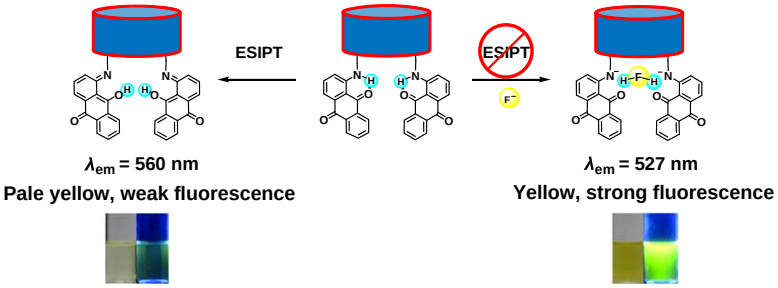
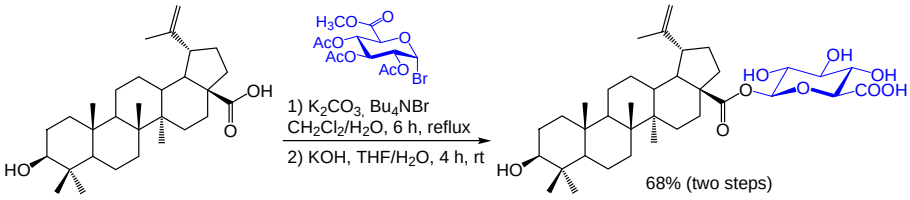
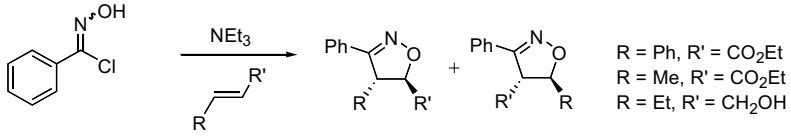
Contents

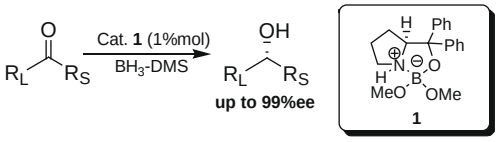
Immobilised BOX and PYBOX metal catalysts have proved active through several cycles in the ene reaction. In some cases, a significant increase in enantioselectivity is observed with the PYBOX catalysts on immobilisation.

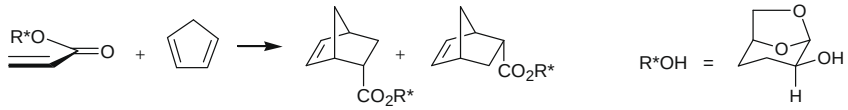


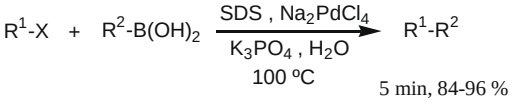


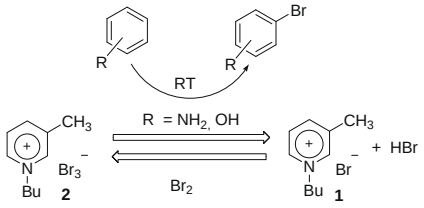


Ionic liquids change the regioselectivity of nitrile oxide cycloadditions in favour of the less sterically hindered isomer and increase the rate of the cycloaddition.

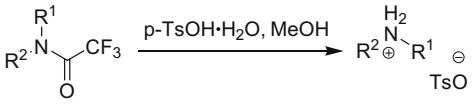




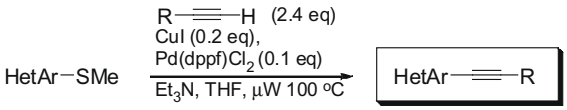


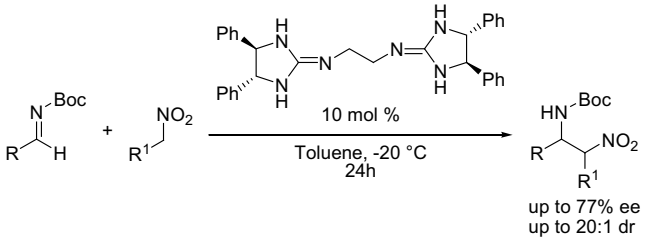


1-Butyl-3-methylpyridinium tribromide, [BMPy]Br_3, proves to be a highly efficient, regioselective reagent/solvent for nuclear bromination of various anilines and phenols. The synthesis and characterization of the room temperature ionic liquid [BMPy]Br_3 (**2**) are described. The bromination was carried out in the absence of organic solvents, and in most cases the only extraction solvent needed was water. The spent 1-butyl-3-methylpyridinium bromide (**1**) was easily recycled.

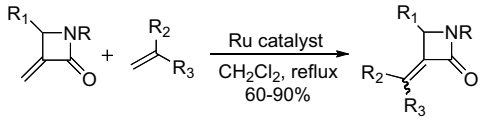


A practical and efficient method to cleave trifluoroacetamides under acidic non-aqueous condition with *p*-TsOH·H_2O was described.

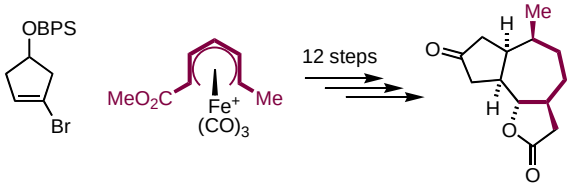


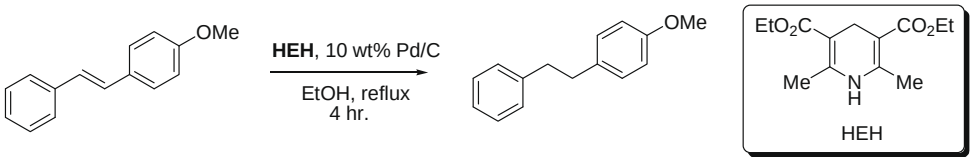


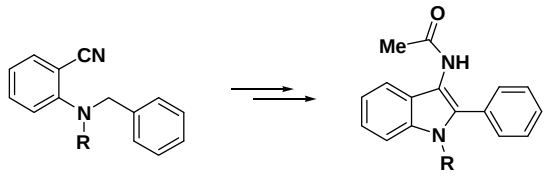
A series of chiral guanidines were synthesized and shown to efficiently catalyze the aza-Henry reaction. Modifications of the catalyst structure revealed important selectivity trends including an intriguing reversal of stereoselectivity with bisguanidine variants.



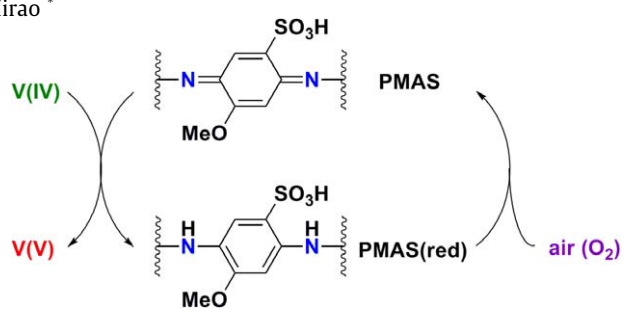
α-Alkylidene-β-lactams have been prepared in good to excellent yields by olefin cross metathesis. Electron poor α-methylene-β-lactams undergo cross metathesis more rapidly and efficiently than more electron rich analogs. Significantly, tetrasubstituted alkenes have for the first time been accessed by CM reactions.



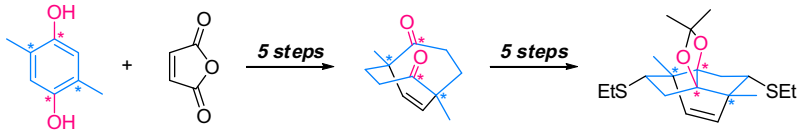


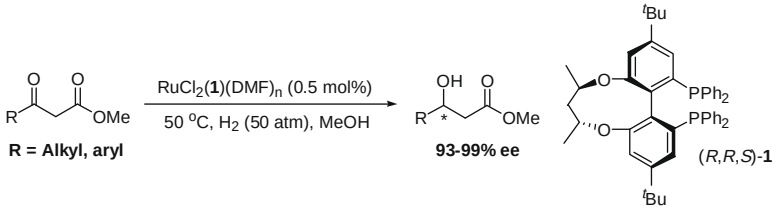


R = Me, Et, *n*-Pro, Ph, Bn

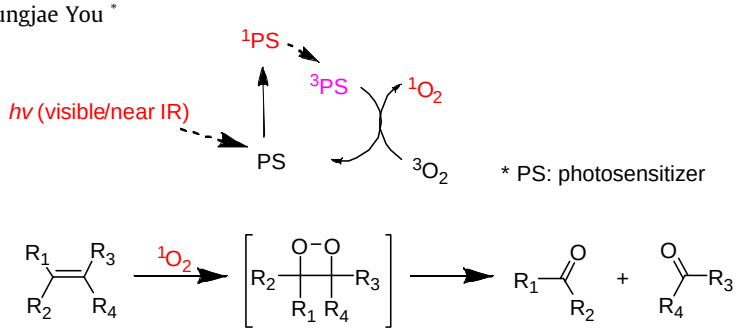


The redox interaction between poly(2-methoxyaniline-5-sulfonic acid) (PMAS, emeraldine form) and V(IV) readily occurred to produce the PMAS(red) and V(V) species in aqueous solutions. Notably, molecular oxygen was able to reoxidize PMAS(red) to form the catalytic redox cycle.

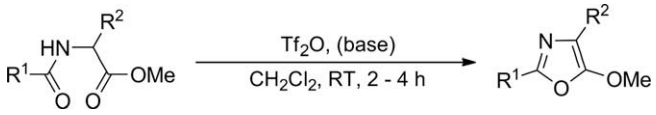




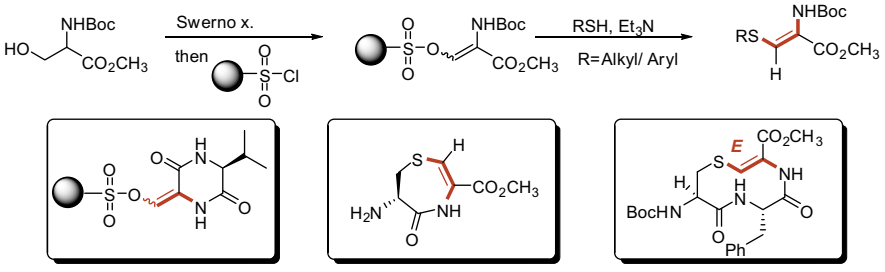
Axially 4,4′-di-*tert*-butyl TunePhos-type chiral diphosphine ligand was designed and synthesized by means of central-to-axial chirality transfer, and its applications in asymmetric hydrogenation were explored. Up to 99% ee was achieved for the highly efficient Ru-catalyzed hydrogenation of β-keto esters.

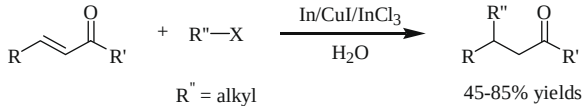


A series of substituted olefins were tested for their reactivity with singlet oxygen as a singlet oxygen-mediated cleavable linker.

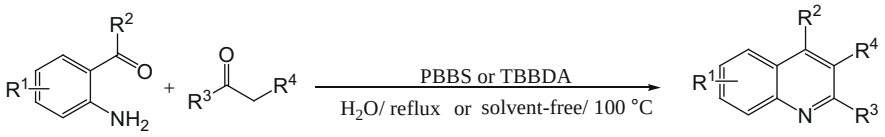


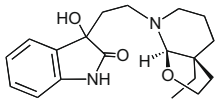
N-Acyl amino acid esters undergo triflic anhydride-mediated cyclodehydration to form oxazoles and bisoxazoles in a simple one-pot transformation.





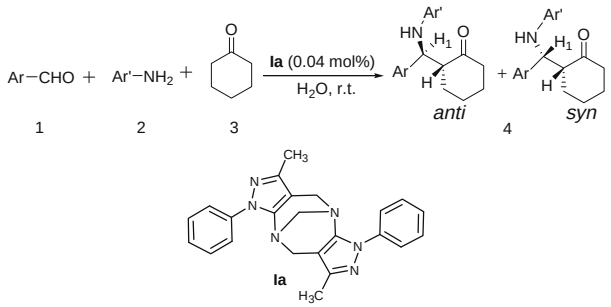
An efficient method for the conjugate addition of unactivated alkyl iodides to α,β-unsaturated carbonyl compounds using indium/copper in water is described. The reactions proceed more efficiently in water than in organic solvents. In, CuI and $InCl_3$ are all essential for efficient reaction. Formation of a symmetrical *vic*-diarylalkane is observed when an aryl-substituted alkene is used as substrate.

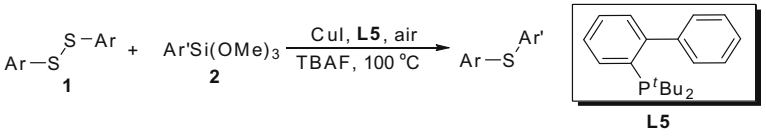


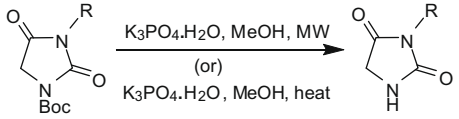


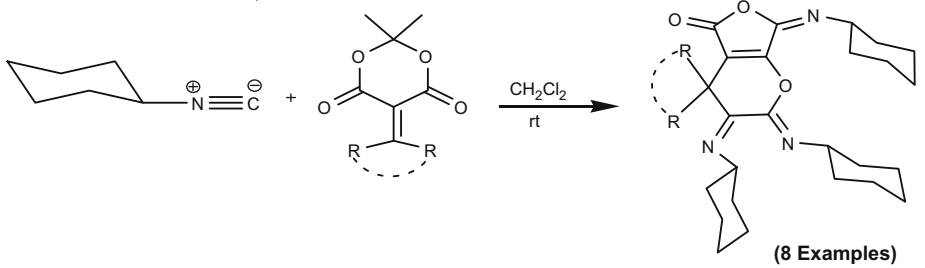
leucolusine

A tetracyclic ring-opened oxindole alkaloid, possessing an unprecedented ring system incorporating fused piperidine-tetrahydrofuran rings, has been isolated from the Malayan species, *Leuconotis griffithii*. The structure was established by analysis of the spectroscopic data, and a possible biogenetic pathway from an *Aspidosperma* precursor is presented.

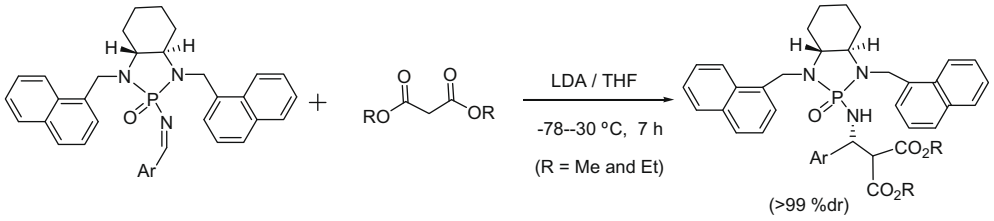


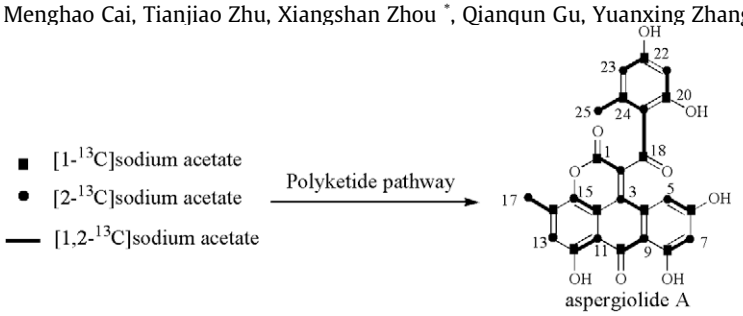






A four-component (3+1) reaction of alkyl isocyanides with alkylidene-substituted Meldrum's acid produces new imino-furopyranone derivatives. The products are structurally similar to 2*H*-furo[2,3-*c*]pyran-2-one natural products.





*Corresponding author
Supplementary data available via ScienceDirect

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