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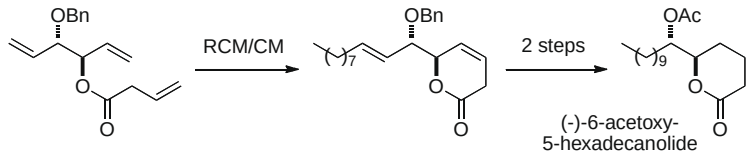
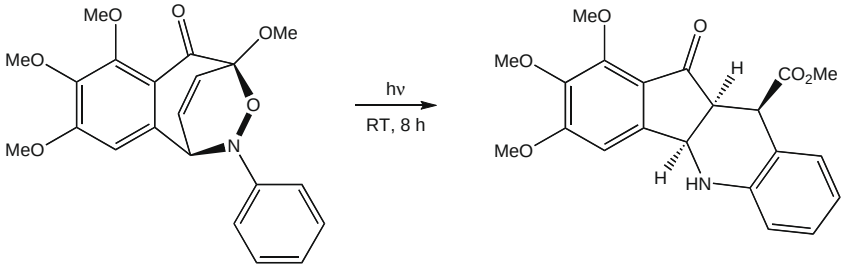
Contents

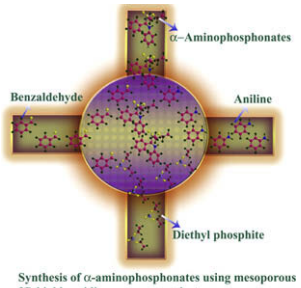
COMMUNICATIONS



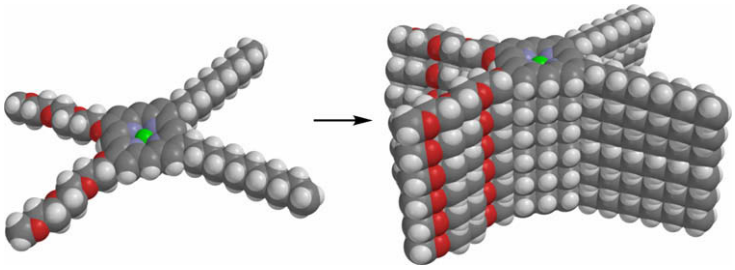


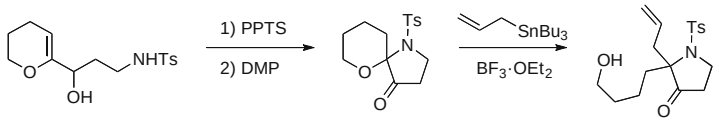
The photoisomerization of hetero Diels–Alder adducts of tetramethylpurpurogallin bearing β,γ-unsaturated ketone chromophores and endocyclic –N–O– or –N–N– groups is described.

Here we demonstrate for the first time the synthesis of α-aminophosphonates through the three-component coupling reaction of aldehydes, amines, and diethyl phosphite by using highly acidic 3D mesoporous aluminosilicate nanocage catalyst, which gave excellent yield with a high selectivity in a short reaction time due to its high acidity, 3D pores, and a huge space in the nanocages.

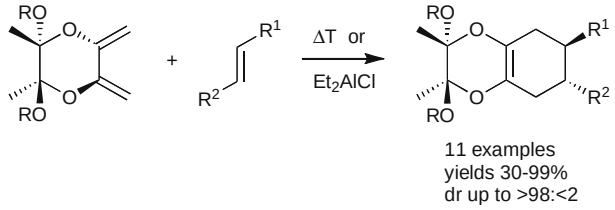


Synthesis of α-aminophosphonates using mesoporous 3D highly acidic nanocage catalyst

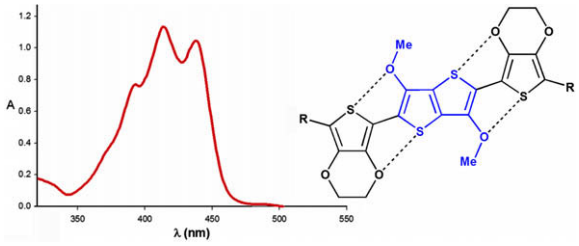




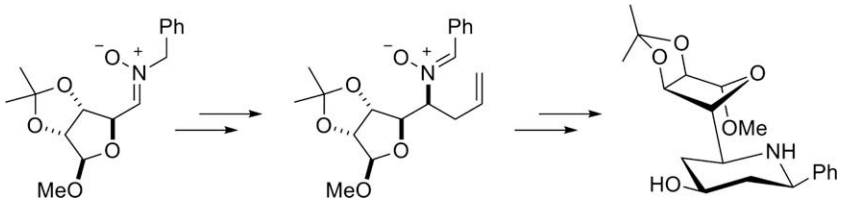
2,2-Disubstituted pyrrolidin-3-ones are prepared in three steps from simple dihydropyran derivatives; the key spiro-*N*,*O*-acetal intermediate is a useful *N*-sulfonylketoiminium ion precursor.

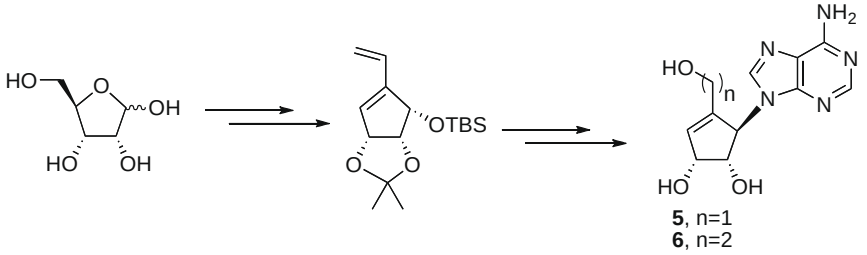


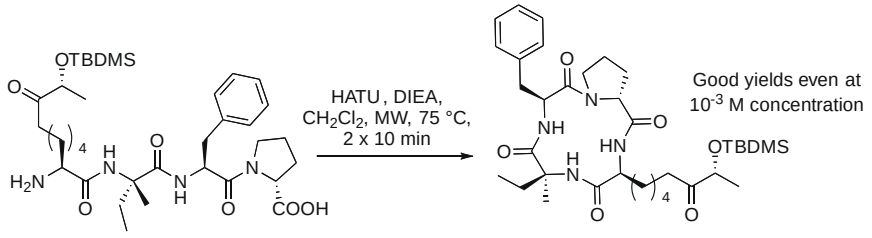
Thermal and Lewis acid-catalysed Diels–Alder reactions of a range of dienophiles with an axially chiral diene results in cycloadducts with moderate to excellent diastereoselectivity.

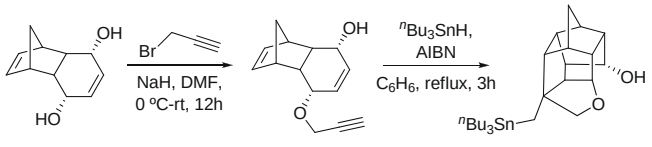


A series of oligomers based on the combination of the 3,6-dimethoxythieno[3,2-*b*]thiophene unit and 3,4-ethylenedioxythiophene (EDOT) moieties have been prepared and studied by UV–vis spectroscopy and cyclic voltammetry.

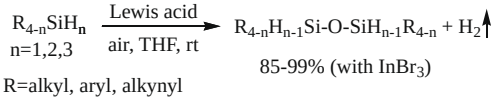


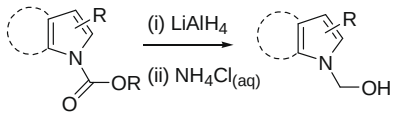


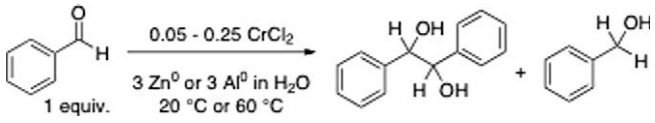




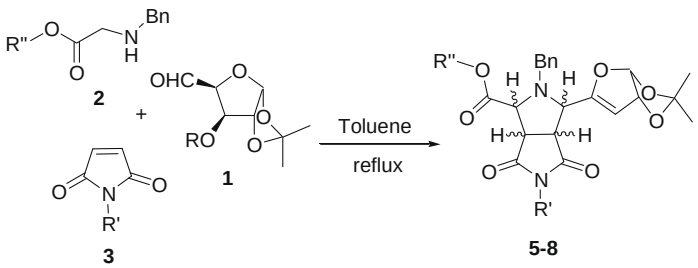
Tandem radical cyclizations involving two or three successive 5-*exo-trig* cyclizations result in the formation of the oxa- and aza-cage compounds.

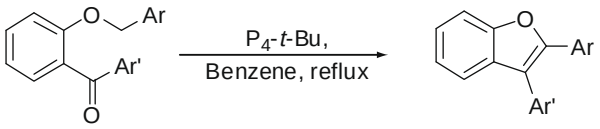




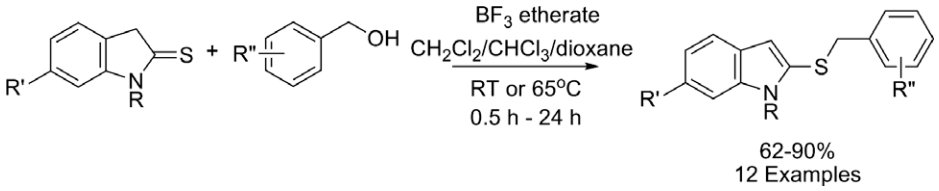


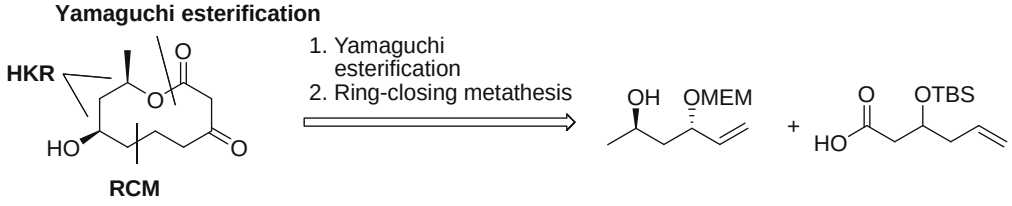
$CrCl_2$ catalyzes the pinacol coupling of benzaldehyde in water in the presence of Zn^0 or Al^0.

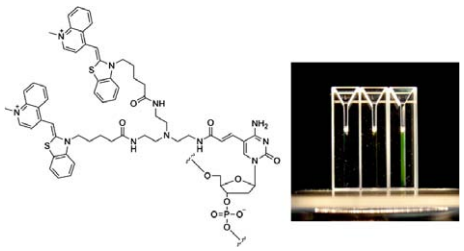




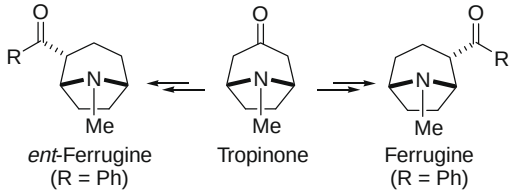
A series of 2,3-diarylbenzofurans are efficiently generated by the cyclization of *ortho*-benzyloxybenzophenones by a novel one-step procedure using phosphazene base P_4-*t*-Bu. This methodology is used toward the successful total synthesis of amurensin H.

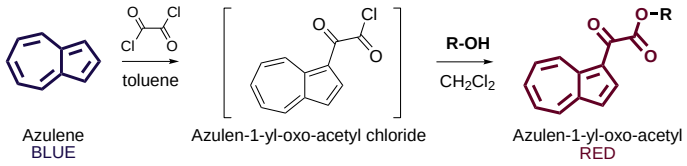


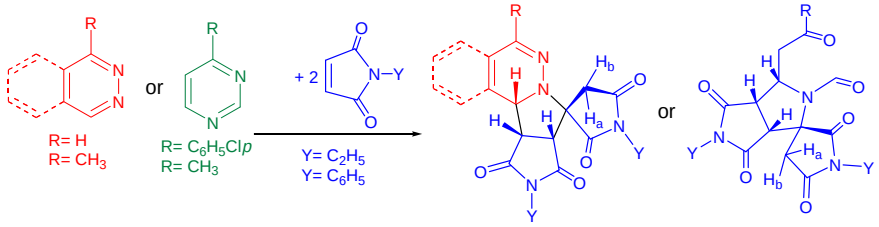


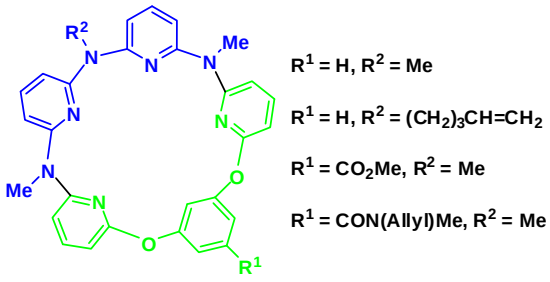


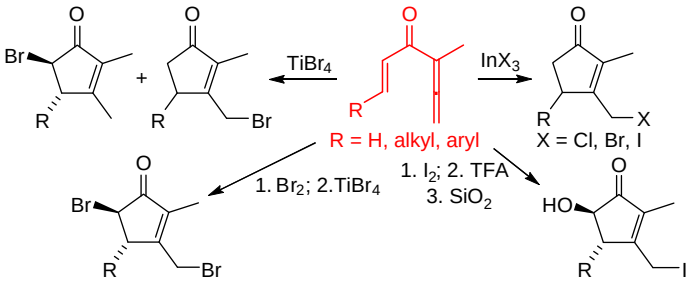
A 2′-deoxycytidine derivative modified by two thiazole orange dyes has been designed for functional expansion of hybridization-sensitive fluorescence probes.

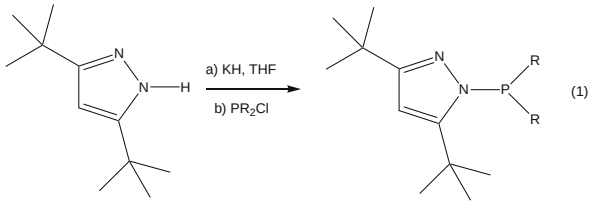






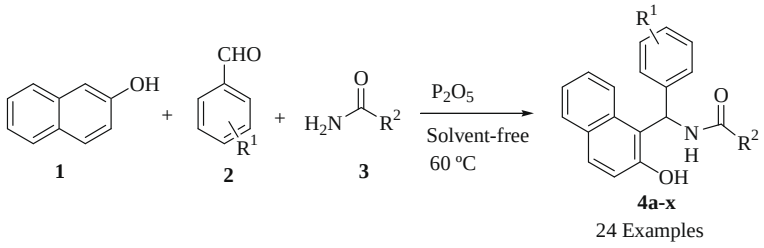






R = cyclohexyl (**2**) or tert-butyl (**3**)

Bulky 1-(3,5-di-*tert*-butyl)pyrazolyl-dicyclohexylphosphine and 1-(3,5-di-*tert*-butyl)pyrazolyl-di-*tert*-butylphosphine were prepared from the reactions of 3,5-di-*tert*-butylpyrazolide and corresponding chlorodialkylphosphines. They were successfully employed as ligands in the Suzuki coupling reactions of phenylboronic acid and various aryl bromides and chlorides.



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Supplementary data available via ScienceDirect

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