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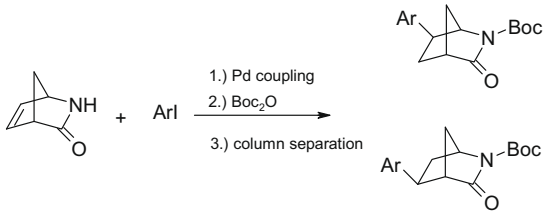
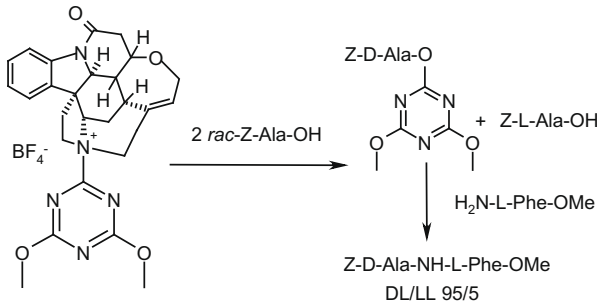
Tetrahedron Letters Vol. 51, No. 1, 2010

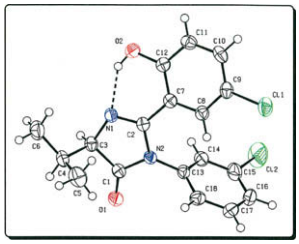
Contents

COMMUNICATIONS

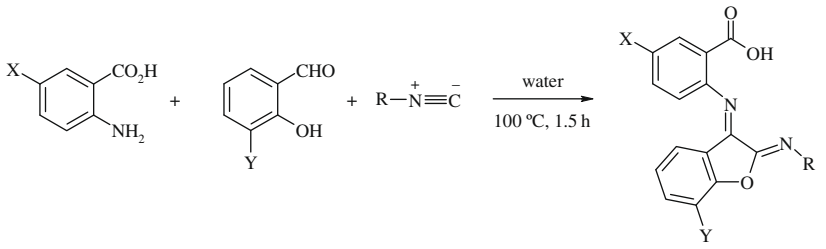


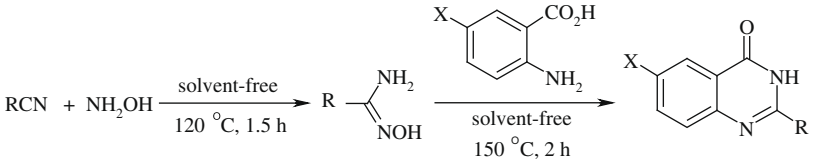
The hydroarylation of 2-azabicyclo[2.2.1]hept-5-en-3-one with a range of aryl iodides is presented.

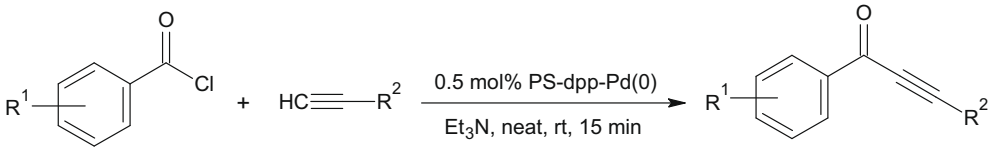




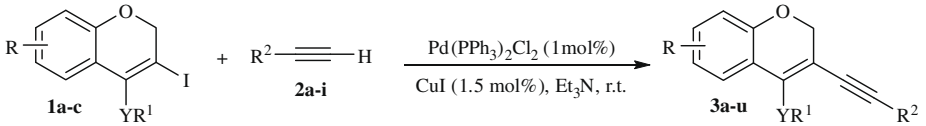
The ORTEP view of 2-(5-chloro-2-hydroxyphenyl)-3-(3-chlorophenyl)-5-isopropyl-3,5-dihydro-4*H*-imidazol-4-one, a dehydrated form of reaction intermediate.



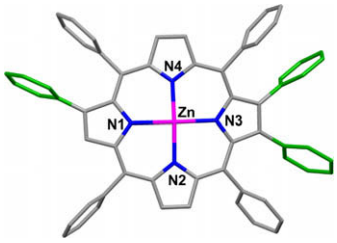




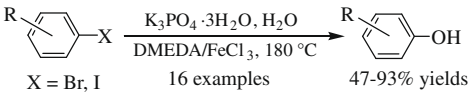
A polystyrene-supported palladium(0) complex [PS-dpp-Pd(0)] is an efficient catalyst for the copper- and solvent-free acylation of terminal alkynes with different acid chlorides in the presence of triethylamine as base, giving the corresponding ynones in good yields.

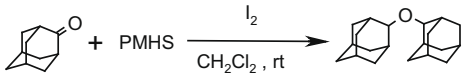


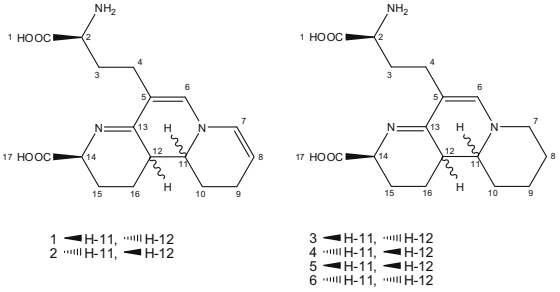
Y = S, Se; R = Me, naphthyl; R^1 = Me, butyl; R^2 =alkyl, aryl, alcohol, ether



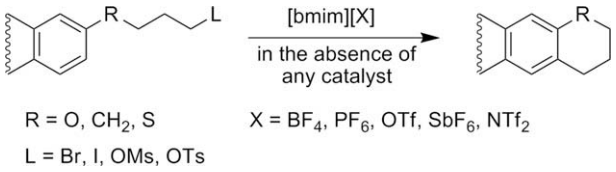
Syntheses of H_2TPPBr_n (n = 2, 3) derivatives and the Suzuki cross-coupled product of H_2TPPBr_3 have been reported. Crystal structures of $ZnTPPR_3$ (R = Br, Ph) showed antipodal substitution at the β-pyrrole positions.



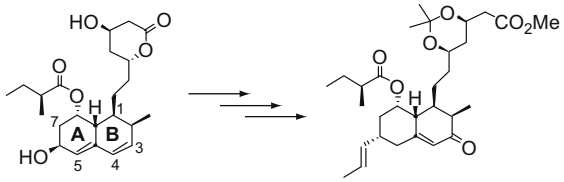


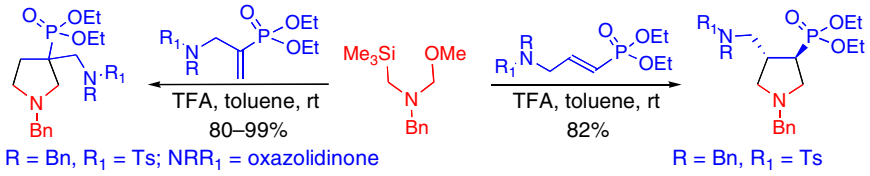


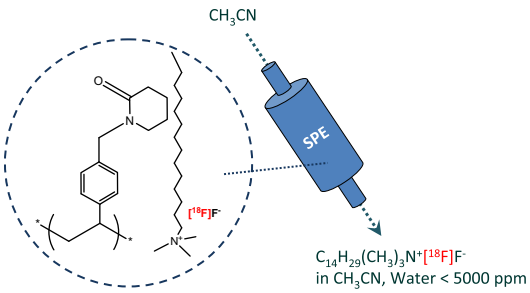
Oryzamutaic acids B–G (**1**–**6**), structurally unique nitrogen-containing heterocyclic alkaloids, were isolated from the endosperm (polished rice) of an *Oryza sativa* mutant.

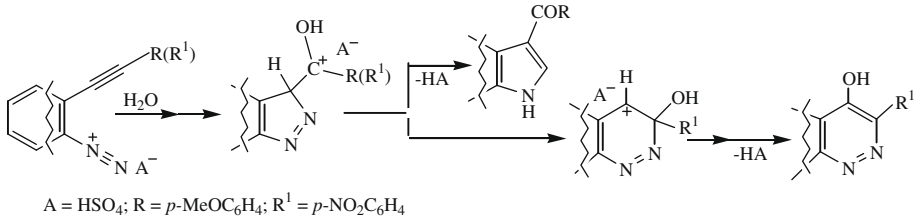


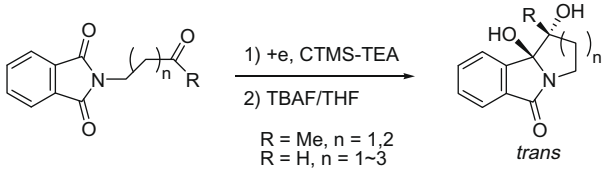
A novel synthetic method using an ionic liquid (IL) for a six-membered ring-closure cyclization is described. The ring-closure cyclization by nucleophilic C-alkylation was achieved with various halo- and alkanesulfonyloxyalkyl aromatic compounds in high yields with minimal byproducts using various ILs as the reaction media in the absence of any catalyst. For example, the cyclization of 2-(3-methanesulfonyloxy-propoxy)naphthalene (**1a**) to 2,3-dihydro-1H-naphtho[2,1-*b*]pyran (**2**) in IL [bmim][PF_6] proceeded selectively at 150 °C for 24 h in 85% yield.

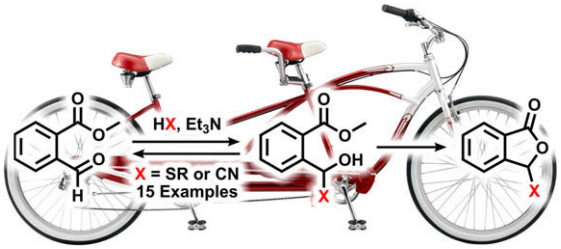




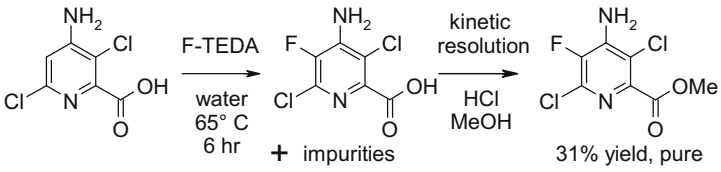




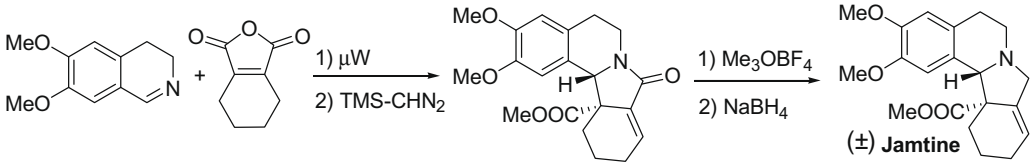


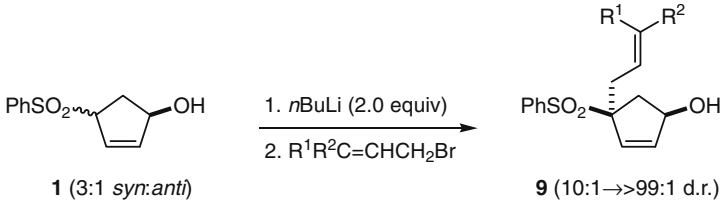


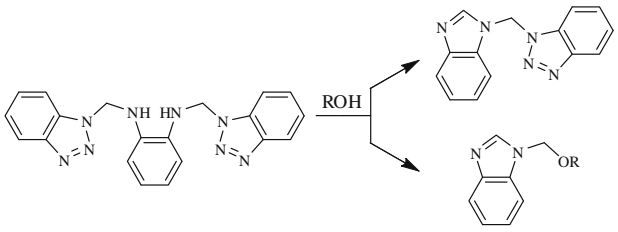
A one-pot tandem reaction for the efficient synthesis of 3-substituted phthalides is presented based on reversible nucleophilic addition to methyl 2-formylbenzoate followed by lactonization.

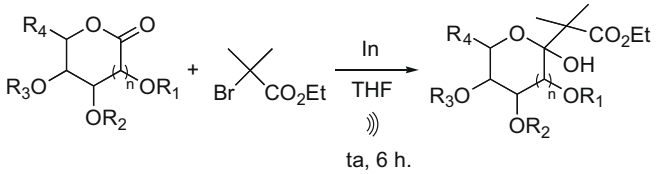


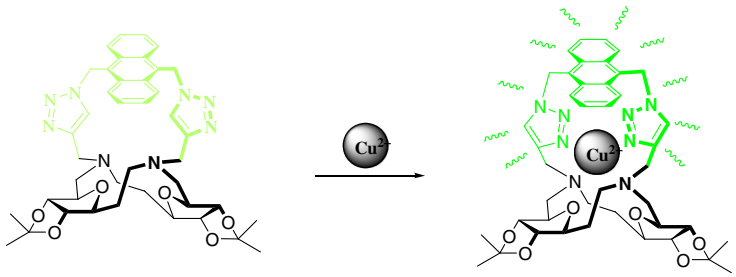
5-Fluoroaminopyralid was prepared on kilogram scale via electrophilic fluorination of aminopyralid using F-TEDA (SELECTFLUOR™) in warm water. It was purified as its methyl ester via an iterative esterification/saponification sequence (kinetic resolution) on the crude.

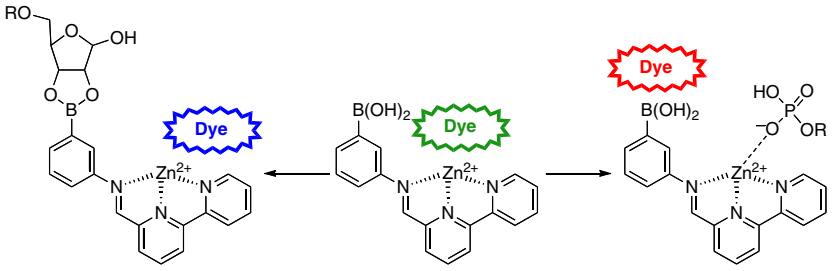


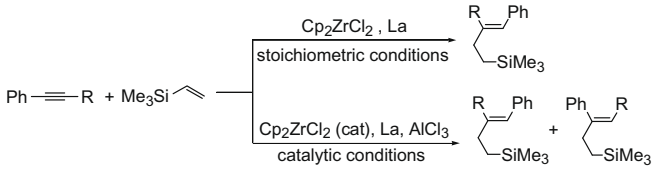


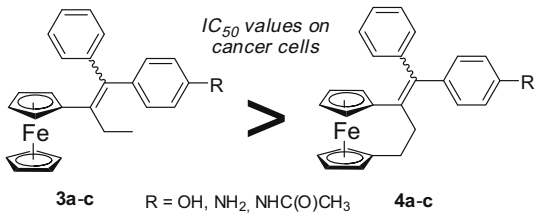




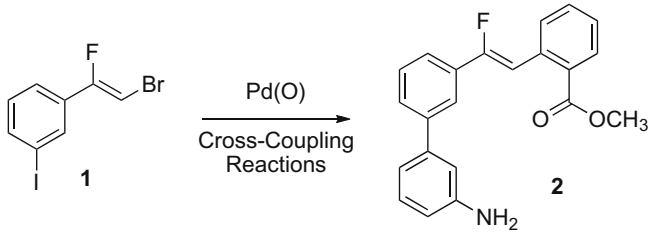


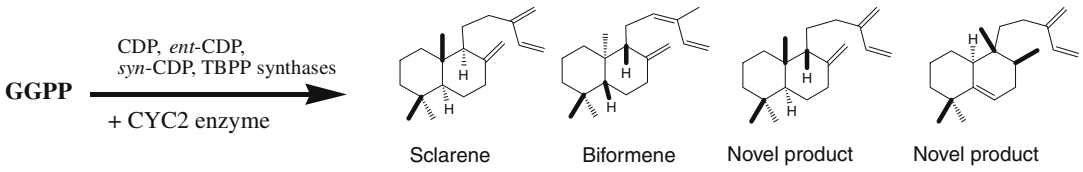


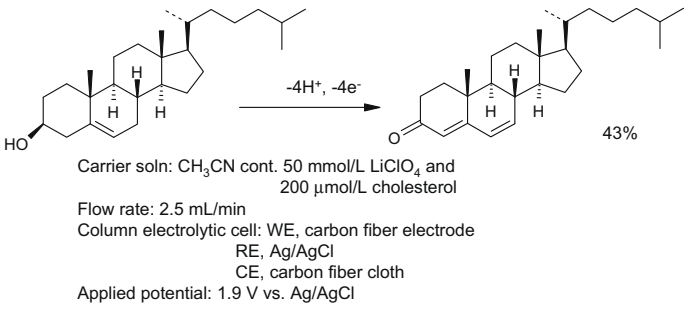


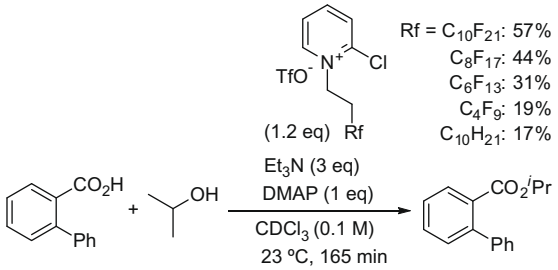


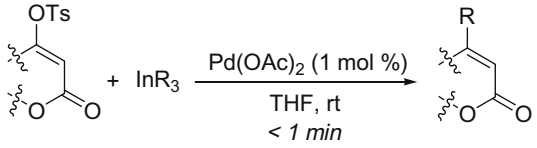
Ferrocene compounds possessing the [3]ferrocenophane motif are strongly toxic against hormone-independent breast cancer cells; more so than their non-cyclic counterparts.



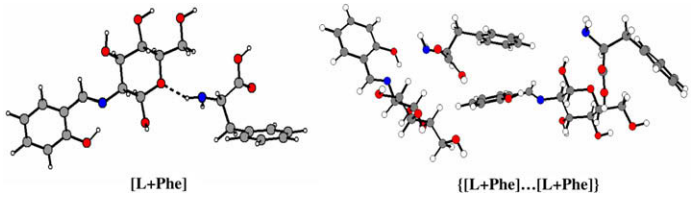


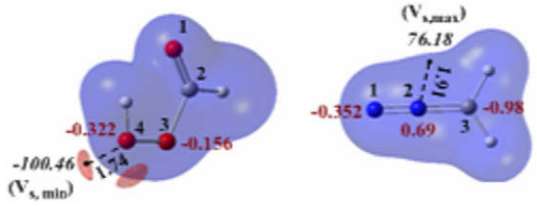




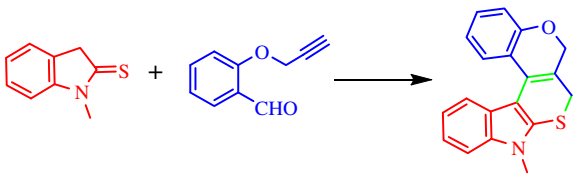


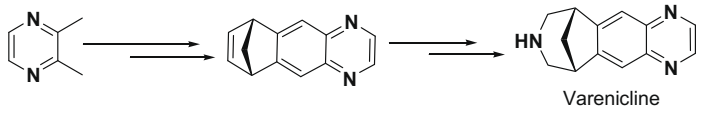
A glucose based C2-glyco-conjugate, viz., 1-(D-glucopyranosyl-2′-deoxy-2′-iminomethyl)-2-hydroxybenzene (**L**), has been synthesized in high yield and characterized. Titration of **L** with all the twenty naturally occurring amino acids resulted in a large fluorescence intensity enhancement only in case of aromatic amino acids, viz., Phe, Trp, His and Tyr and not with the others. This has been attributed to the initial formation of 1:1 hydrogen bonded complex followed by π–π interactions present between the aromatic moieties of such complexes as demonstrated by absorption and computational methods. Thus **L** has been able to recognize aromatic amino acids down to 1.5–3 ppm through switch-on fluorescence behavior.

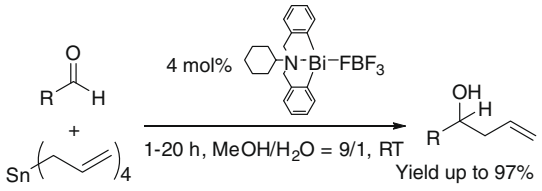




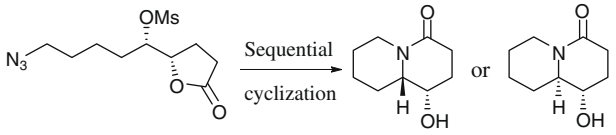
The π-facial selectivity of 5,6-disubstituted bicyclic [2.2.2]oct-2-enes with *m*-cpba and diazomethane has been studied computationally. The reversal of face selectivity with *m*-cpba and diazomethane arises due to an electrostatic effect. The calculations further revealed that an atom centre of an electrophile which is not directly involved in the bond formation can govern the face selectivity.

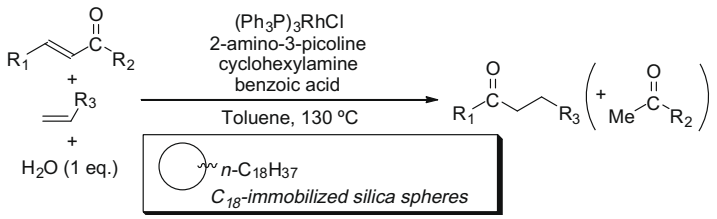


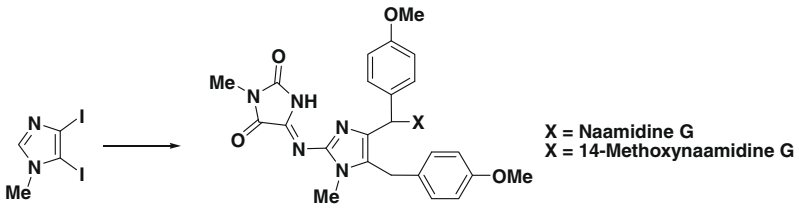


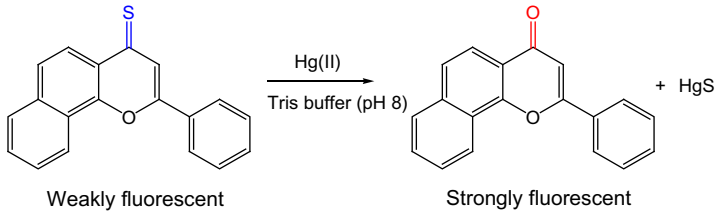


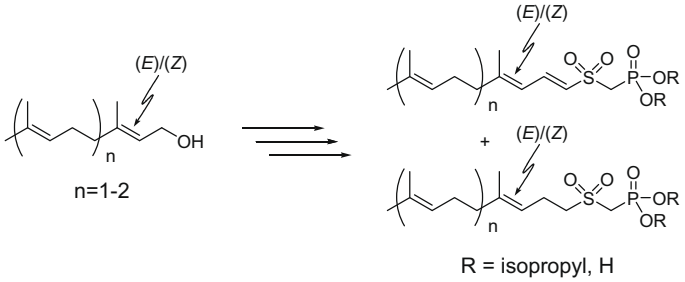
The allylation of different aldehydes with tetraallyltin was successfully operated over hypervalent organobismuth(III) tetrafluoroborate catalyst in a medium of aqueous methanol, giving the corresponding homoallylic alcohols in excellent chemoselectivity and yields.

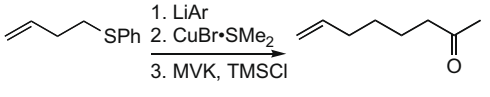




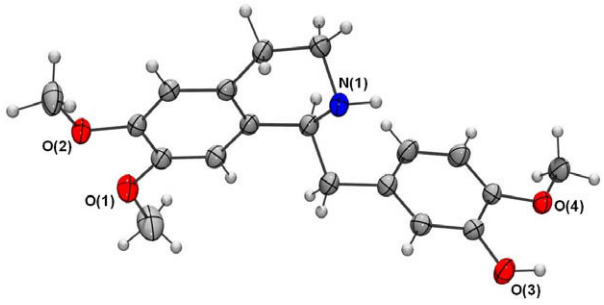


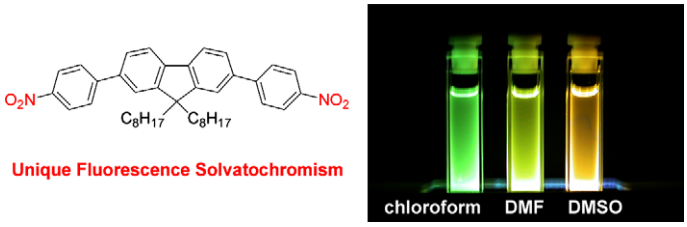




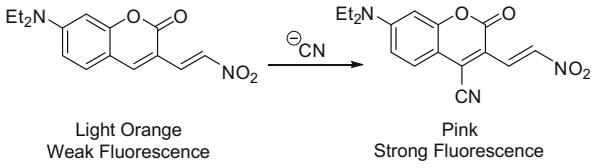


LiAr = lithium *p,p'*-di-*tert*-butylbiphenylide 61%
LiAr = lithium 1-*N,N*-dimethylaminonaphthalenide 87%

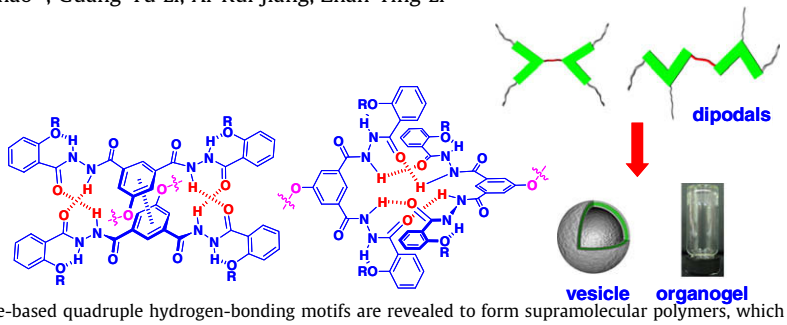




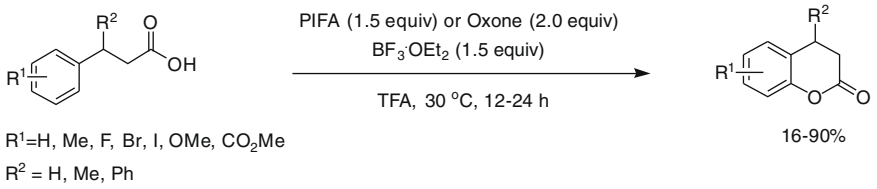
2,7-Di(*p*-nitrophenyl)fluorene has high fluorescence quantum yield (Φ_F = 0.31 in *N*,*N*′-dimethyl-formamide) and exhibits large Stoke's shift with green to orange emission and unique on–off behavior of the emission governed by solvents.

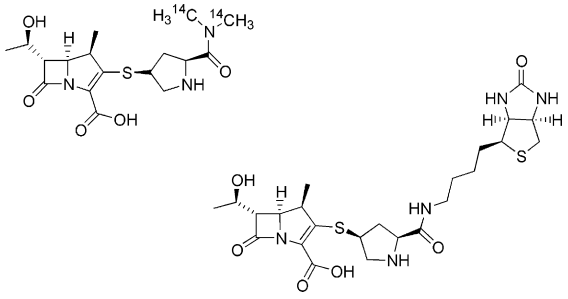


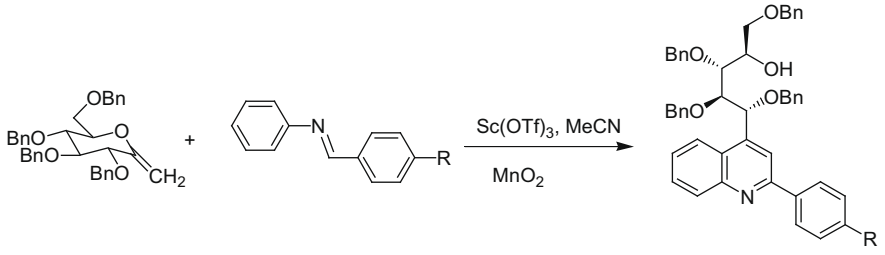
The chemodosimeter shows a selective response to cyanide through the nucleophilic aromatic substitution reaction of **1** by the cyanide anion.

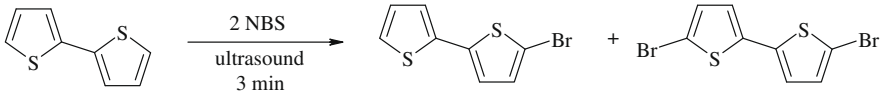


Dipodals based on two new hydrazide-based quadruple hydrogen-bonding motifs are revealed to form supramolecular polymers, which can further aggregate to form vesicles and/or organogels in hydrocarbons.

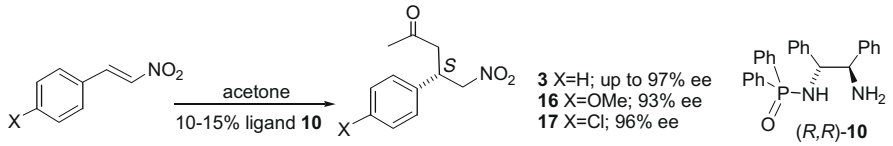








A novel, fast and convenient method for the bromination of thiophenes and oligothiophenes with *N*-bromosuccinimide using ultrasonic irradiation is elaborated.



*Corresponding author
Supplementary data available via ScienceDirect

Abstracted/indexed in: AGRICOLA, Beilstein, BIOSIS Previews, CAB Abstracts, Chemical Abstracts, Chemical Engineering and Biotechnology Abstracts, Current Biotechnology Abstracts, Current Contents: Life Sciences, Current Contents: Physical, Chemical and Earth Sciences, Current Contents Search, Derwent Drug File, Ei Compendex, EMBASE/Excerpta Medica, Medline, PASCAL, Research Alert, Science Citation Index, SciSearch. Also covered in the abstract and citation database SCOPUS®. Full text available on ScienceDirect®

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