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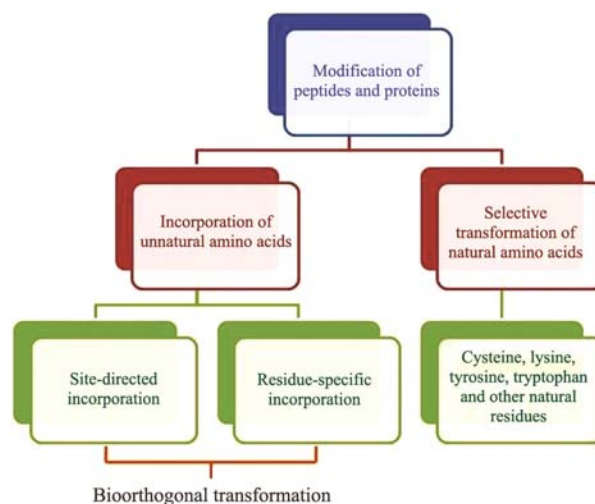
AUG-SEPT 2013

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Advances in Contemporary Research

973 Site-specific chemical modifications of proteins

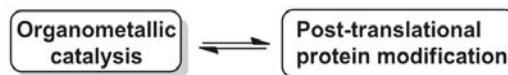
An overview of the chemical and biochemical approaches to functionalize peptides and proteins with the desired molecular components is presented. Site-directed methods to incorporate unnatural groups into biomolecules and the development of bioorthogonal transformations involving unnatural functional groups have been reviewed.



Divya Agrawal* & Christian P R Hackenberger*

992 Organometallic complexes: Catalysis and application in protein modification

Organometallic catalysis has witnessed phenomenal growth with time, and methodologies have been developed to facilitate a variety of chemo-, regio- and stereoselective reactions. The potential of these transformations has been examined to differentiate the reactivity of amino acid residues in a peptide or protein. The efforts *en route* to develop new catalytic approaches in this area have been delineated in this review.

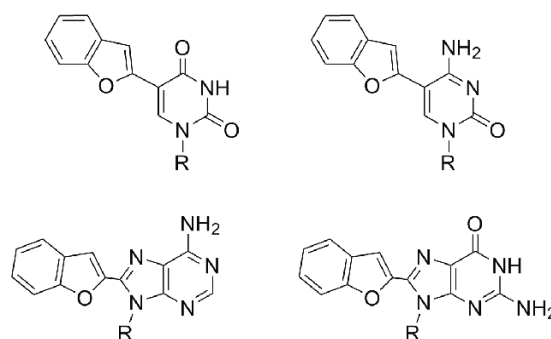


Maheshwerreddy Chilamari & Vishal Rai*

Papers

1004 Synthesis and fluorescence properties of a full set of extended RNA base analogues

Synthesis and fluorescence properties of a full set of environment-sensitive RNA base analogues derived by conjugating benzofuran moiety at the 5- and 8-positions of pyrimidine and purine bases, respectively, are described.



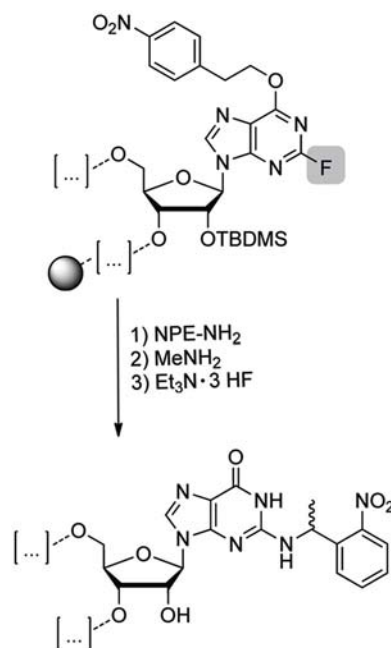
R = ribose sugar

benzofuran-conjugated environment-sensitive fluorescent RNA base analogues

Pramod M Sabale, Ashok Nuthanakanti & Seergazhi G Srivatsan*

1014 Rapid synthetic access to caged RNA

Novel caged RNA is synthesized using a convertible nucleoside approach. The ability of the resulting sequences to destabilize duplex structures is compared.



Alexandre Rodrigues-Correia, Tatjana Stoess, Julia Wilhelm, Beata Berlin & Alexander Heckel*

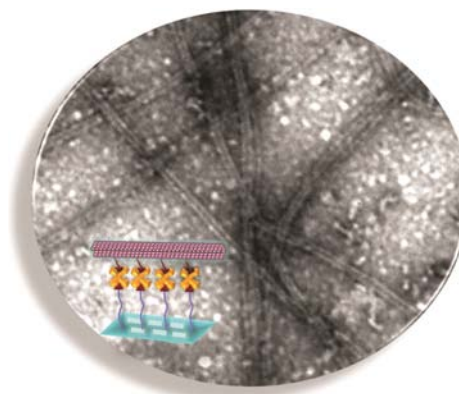
- 1019 Synthetic glutathione peroxidase mimics: Effect of nucleophilicity of the aryl thiol cofactor on the antioxidant activity



Krishna Pada Bhabak, Debasish Bhowmick & Govindasamy Mugesh*

- 1026 Fabrication of biotin functionalised SiO_2 EM grid for studying biotin tagged biomolecules

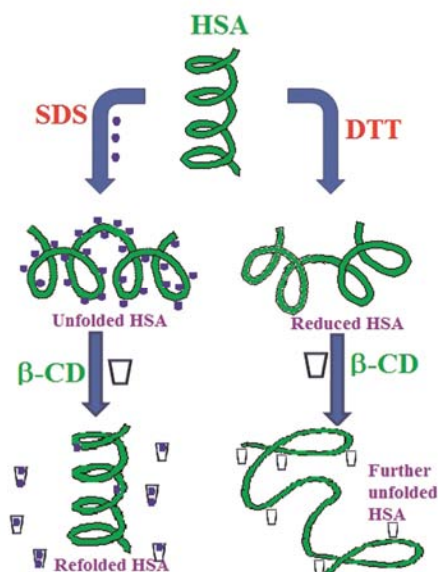
Biotinylated SiO_2 EM grid is fabricated through covalent chemical functionalisation for studying biotin/avidin tagged-biomolecular interaction under electron microscope.



Indrani Chakraborty, Abhijit Saha & Surajit Ghosh*

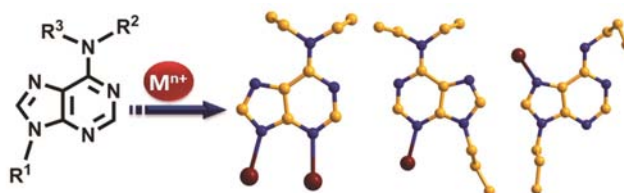
- 1031 Effect of β -CD on refolding dynamics of the unfolded and reduced states of human serum albumin

The behavior of the unfolded and reduced states of HSA is different towards the addition of β -CD; the former can be refolded whereas the latter cannot.



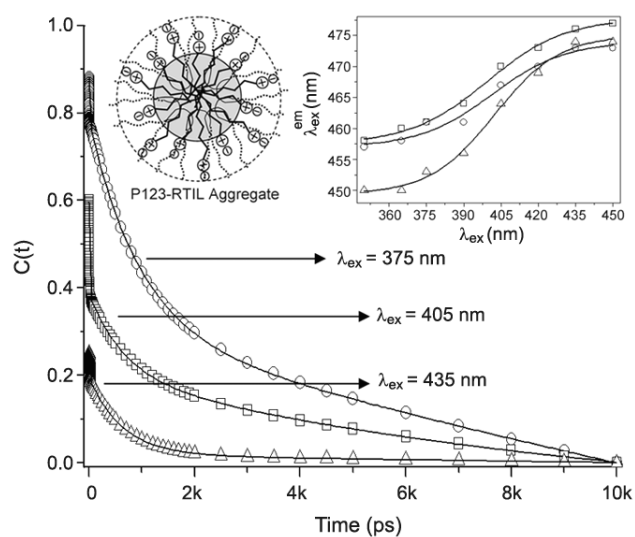
Uttam Anand, Subhadip Ghosh, Nirmal Kumar Das, Narayani Ghosh, Ramakanta Mondal, Arshad Karumbamkandathil & Saptarshi Mukherjee*

- 1041 Coordination site discrimination in substituted bioessential purine ligands



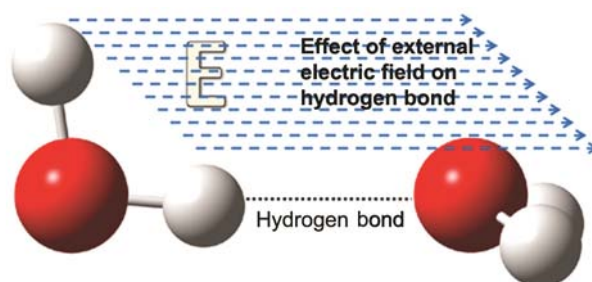
Ashutosh Kumar Mishra, Rajneesh Kumar Prajapati & Sandeep Verma*

- 1047 Effect of room temperature ionic liquids on femtosecond solvation dynamics in a triblock copolymer (P123) gel



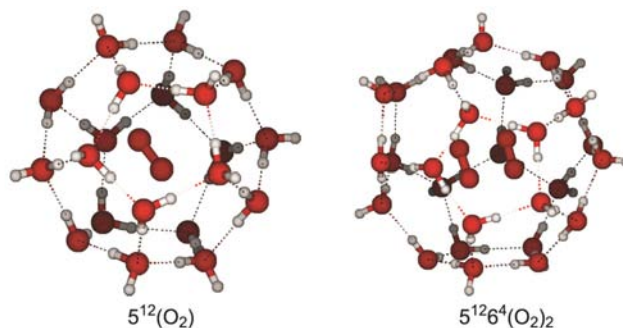
Amit Kumar Mandal, Shirsendu Ghosh, Tridib Mondal, Atanu Kumar Das & Kankan Bhattacharyya*

- 1056 Behavior of water dimer under the influence of external electric fields



Arobendo Mondal, H Seenivasan, Sameer Saurav & Ashwani K Tiwari*

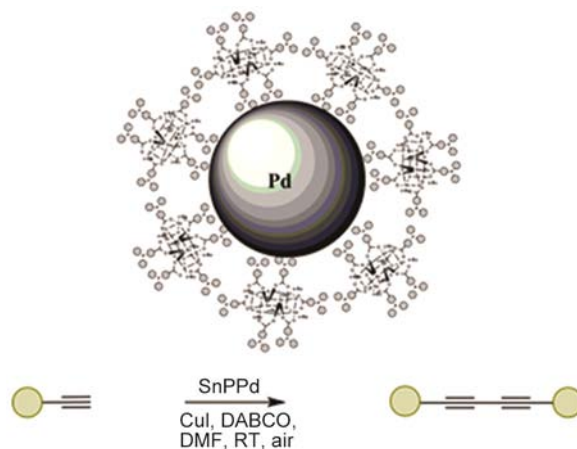
- 1061 Density functional theory study of oxygen clathrate hydrates



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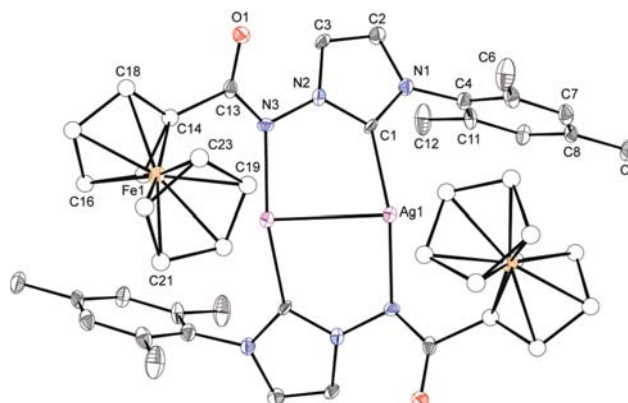
- 1066 Organostannoxane-supported Pd(0) nanoparticles as an efficient catalytic system for alkyne dimerization

Phosphine appended organostannoxane supported palladium nanoparticles are utilized as a reusable catalytic system for the homo-coupling of terminal alkynes.



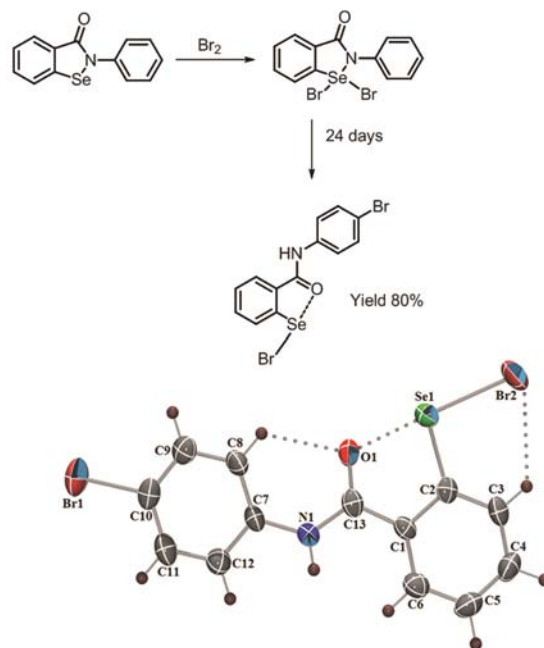
Vadapalli Chandrasekhar* & Ramakirushnan Suriya Narayanan

- 1072 Ferrocene-appended anionic N-heterocyclic carbene and its complex with silver(I): Synthesis, structure and catalytic evaluation



Abir Sarbajna, Nabanita Sadhukhan, Sayantani Saha & Jitendra K Bera*

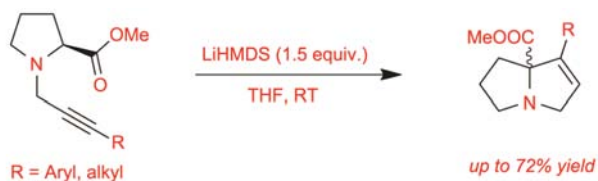
- 1078 Synthesis, characterization and crystal structure of 2-((4-bromophenyl) carbamoyl) phenylselenenyl bromide derived from oxidative addition of bromine to 2-phenyl-1,2-benzoisoselenazol-3-(2H)-one



Shah Jaimin Balkrishna, Amit Kumar, Piyush Panini,
Shailesh Kumar & Sangit Kumar*

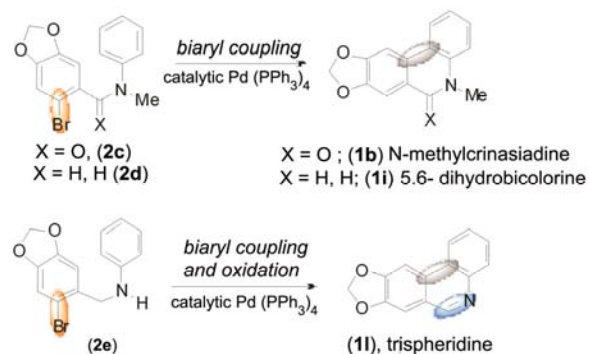
- 1086 Base mediated 5-*endo-dig* cyclization of *N*-propargyl proline derivatives: A facile entry to pyrrolizidine scaffolds

An efficacious and metal-free protocol for the construction of pyrrolizidine core from *N*-propargyl proline derivatives is described.



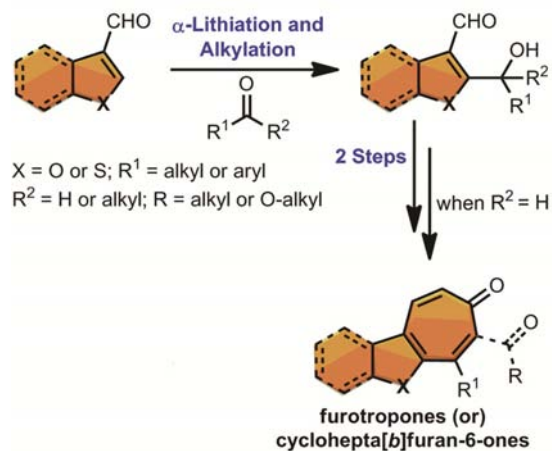
Sriram Mahesh, Manish Pareek,
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- 1093 Expedition approach to the *Amarylidaceae* alkaloids, crinasiadine and its analogues, via a palladium-catalyzed intramolecular direct C-H arylation



Sourabh Mishra, Subhadip De, Badrinath N Kakde,
Dhananjay Dey & Alakesh Bisai*

- 1103 One-step synthesis of 3-formyl-2-furylcarbinols and elaboration to unprecedented furotropones

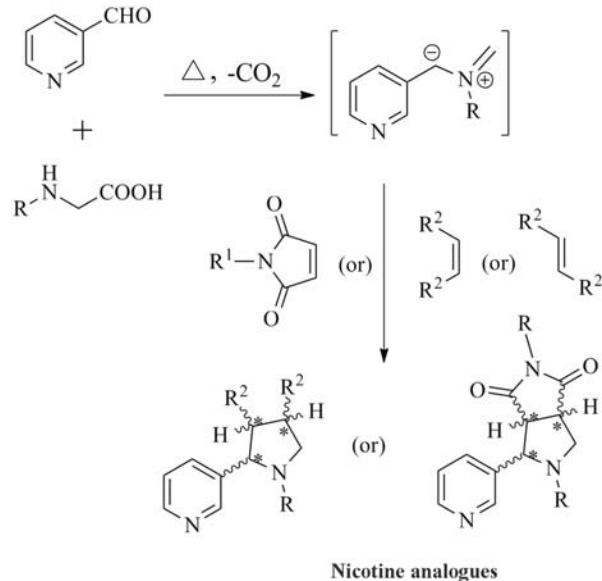


An efficient 3-step approach to furotropones from readily available 3-furancarboxaldehydes

Seema Dhiman & S S V Ramasastry*

- 1113 Diastereoselective construction of a new class of nicotine analogues having contiguous stereocenters via 1,3- dipolar cycloaddition of azomethine ylides

Diastereoselective synthesis of a new class of nicotine derivatives is accomplished through azomethine ylide cycloaddition.



Vadla Rajkumar & Srinivasarao Arulananda Babu*