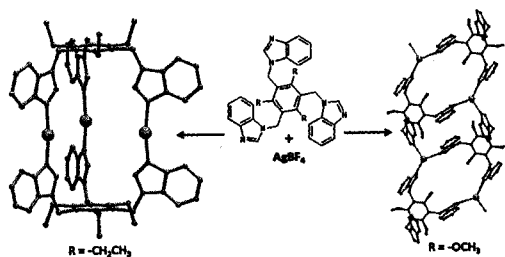


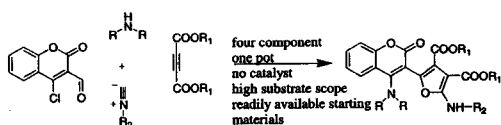
Conformation driven complexation of two analogous benzimidazole based tripodal ligands with Ag(I) resulting in a trigonal prism and a coordination polymer



Suman Bhattacharya and Binoy K Saha 207–216

Complexation of silver(I) tetrafluoroborate with two analogous benzimidazole based tripodal ligands namely 1-Et and 1-OMe, led to the formation of a zero dimensional trigonal prism in case of the former, whereas a one dimensional coordination polymeric ladder in case of the latter. The complexation reactions in respective cases were found to depend on the conformation of the ligating center of the two ligands.

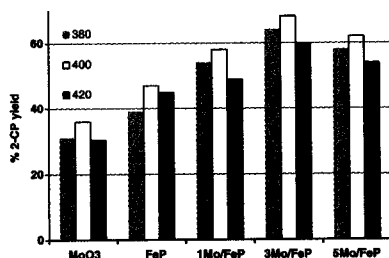
One-pot four component synthesis of novel 3-furyl coumarin derivatives



Venkata Prasad Jalli, Suvratha Krishnamurthy, Tetsuji Moriguchi and Akihiko Tsuge 217–226

Synthesis of 3-furyl coumarin derivatives have been achieved by reaction of 4-chloro-3-formylcoumarin, secondary amines, dialkyl acetylenedicarboxylates and diversely substituted isocyanides using four component, one-pot reaction.

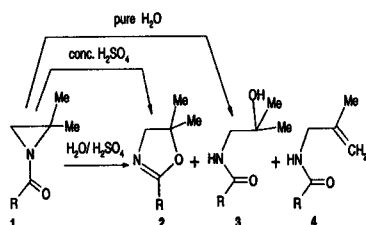
Amoxidation of 2-methyl pyrazine to 2-cyano pyrazine on MoO₃/FePO₄ catalysts



Nagaraju Pasupulety, Hafedh Driss, Yahia Abobakor Alhamed, Abdulrahim Ahmed Alzahrani, Muhammad A Daous, Lachezar Petrov, N Lingaiah and P S Sai Prasad 227–234

The influence of a small amount of Mo=O (1, 3 and 5 wt.% MoO₃) impregnated on FePO₄ and its resultant effect on the acidity was studied for the amoxidation of 2-methyl pyrazine (2-MP) to 2-cyano pyrazine (2-CP) in the temperature range of 380–420°C.

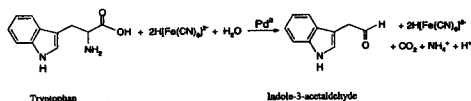
Experimental and theoretical rearrangement of N-acyl-2,2-dimethylaziridines in acidic medium



Madiha Kamoun Mhiri, Firas Aboumessaad, Mohamed Lotfi Efrif, Youssef Arfaoui and Néji Besbes 235–245

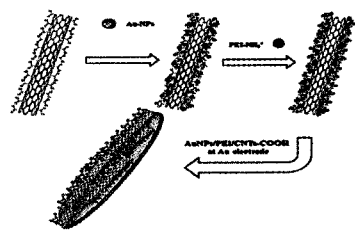
The acidic aqueous solutions of the N-acyl-2,2-dimethylaziridines 1 lead to a mixture of oxazolines 2, amidoalcohols 3 and methallylamides 4. The mechanism proposed to explain the formation of products 2–4 have been confirmed by the quantum chemical calculations using the DFT/B3LYP method and 6-311++G(2d,2p) basis set.

Palladium(II)-catalyzed oxidation of L-tryptophan by hexacyanoferrate(III) in perchloric acid medium: a kinetic and mechanistic approach



Ahmed Fawzy, 247–256

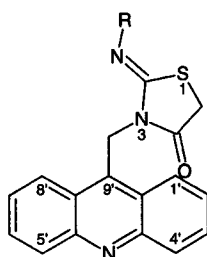
Palladium(II)-catalyzed oxidation of L-tryptophan by hexacyanoferrate(III) in aqueous perchloric acid medium has been investigated. The effect of temperature on the reaction rate has been studied and the activation parameters have been evaluated and discussed. The final oxidation products are identified as indole-3-acetaldehyde, ammonium ion and carbon dioxide.



Acriflavine immobilized onto polyethyleneimine-wrapped carbon nanotubes/gold nanoparticles as an electrochemical sensing platform

Azadeh Azadbakht and Amirreza Abbasi. 257–268

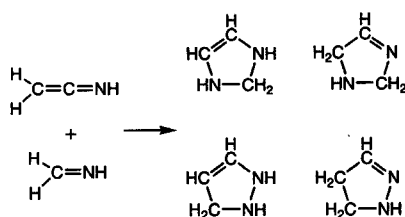
Polyethyleneimine wrapped, multi-walled carbon nanotubes functionalized with a carboxylic acid group and gold nanoparticles has been utilized as a platform to immobilize poly(acriflavine) and used as electrochemical sensor for H₂O₂.



Unexpected regiospecific formation and DNA binding of new 3-(acridin-9-yl)methyl-2-iminothiazolidin-4-ones

Ján Imrich, Danica Sabolová, Mária Vilková and Júlia Kudláčová. 269–277

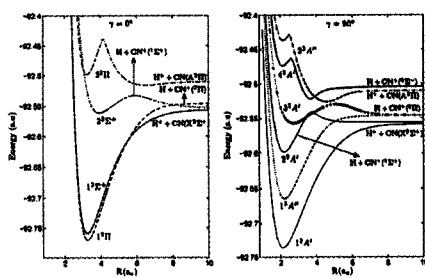
New DNA-binders 3-(acridin-9-yl)methyl-2-R-imino-1,3-thiazolidin-4-ones were regiospecifically synthesized from unstable (acridin-9-yl)methyl thioureas and methyl bromoacetate (MBA) or bromoacetyl bromide (BAB) by a mechanism involving a transient spiro 9,10-dihydroacridine intermediate.



Theoretical insights into the cycloaddition reaction mechanism between ketenimine and methyleneimine: An alternative approach to the formation of pyrazole and imidazole

Nana Wang, Xiaojun Tan, Weihua Wang, Fangfang Wang and Ping Li. 279–285

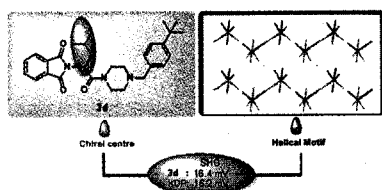
The cycloaddition reaction mechanism between interstellar molecules, ketenimine and methyleneimine, has been systematically investigated theoretically. The products of this reaction are pyrazole and imidazole compounds, respectively.



Ab initio adiabatic and quasidiabatic potential energy surfaces of H⁺ + CN system

Bhargava Anusuri and Sanjay Kumar. 287–296

We present *ab initio* three dimensional potential energy surfaces for H⁺ + CN system. The calculations were performed at the internally contracted multi-reference configuration interaction (*icMRCI*) level of theory using Dunning's correlation consistent polarized valence triple zeta (*cc-pVTZ*) basis set. Adiabatic and quasidiabatic surfaces were computed for ground and first excited electronic states for the collinear and perpendicular approaches of H⁺. Nonadiabatic effects arising from radial coupling have been analyzed in terms of nonadiabatic coupling matrix elements (NACME) and coupling potentials.



Functionalized organic frameworks explored as second order NLO agents

Anil K Singh, Brijesh Rathi, Volodymyr V Medvediev, Oleg V Shishkin, Vijay Bahadur, Taruna Singh, Brajendra K Singh, N Vijayan, V Balachandran and Nikolay Yu Gorobets. 297–309

New chiral phthalimides possessing terminal arylpiperazines have been studied for their solid-state properties. The second order NLO response of all the listed phthalimides was substantiated with the aid of computational study and crystal engineering approach.

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Flies swarm the head and mate the nest of this Rüppell's vulture, photographed in the Selenge National Park in Mongolia.



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Vultures seem vile, dining on the dead. But Earth desperately needs these birds.

By Elizabeth Royte Photographs by Charlie Hamilton James

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In disused machines and abandoned buildings, a photographer sees the overreach of technology.

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On the Cover Research ship *Lamont* makes its way "down" after a chisel-shaped iceberg breaks a trail, leaving long scar fractures in the ice system. This page by Nick Cobbing.

Corrections and Clarifications Go to [http://ngm.com/corrections](#)

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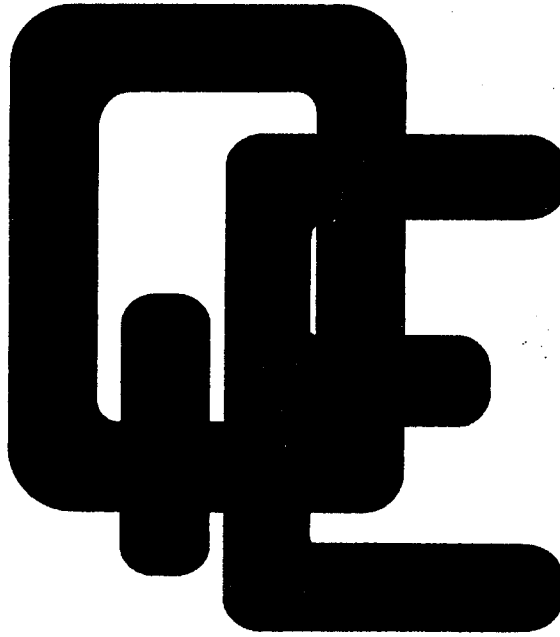
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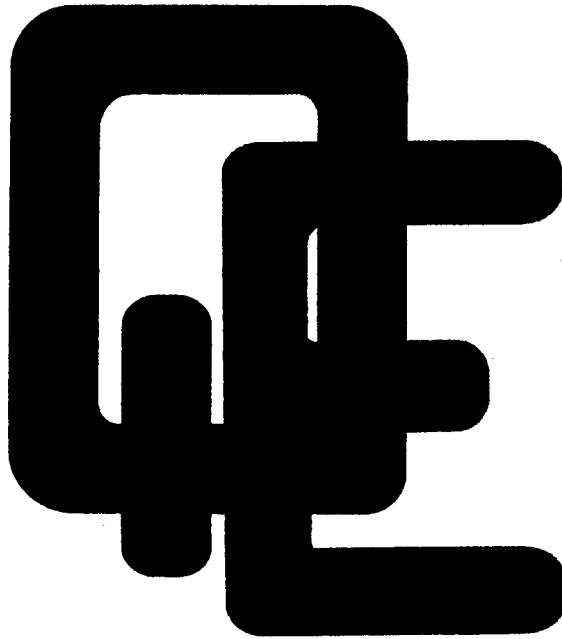
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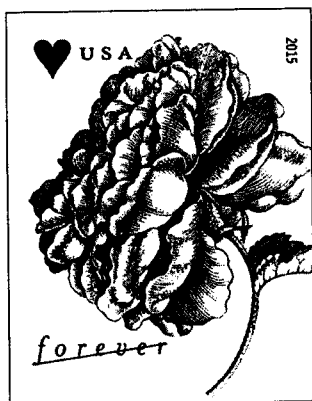
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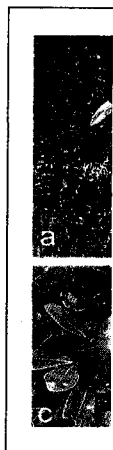
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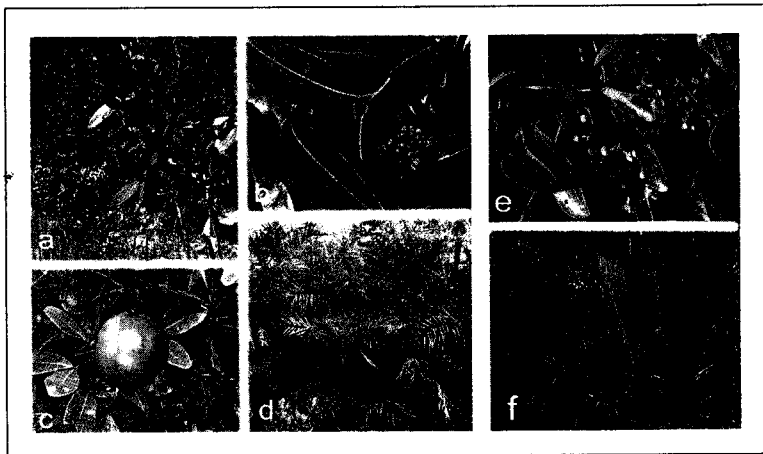
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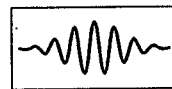
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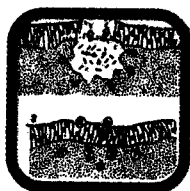
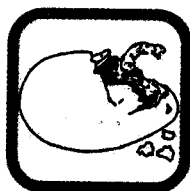
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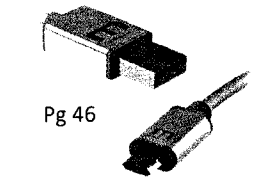
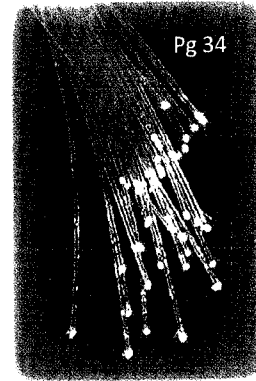
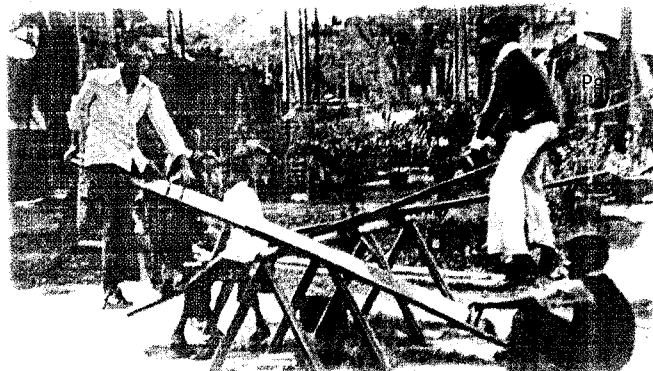
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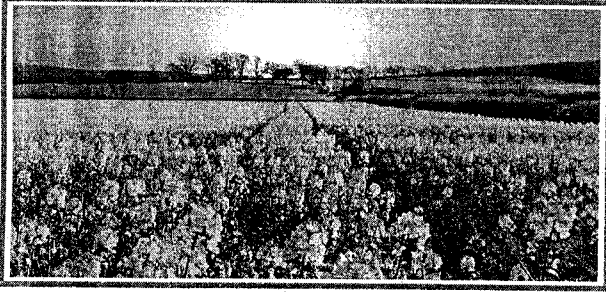
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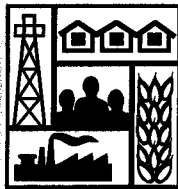
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