

Recent Publications (2010 – present)

1. Hydrogenation of CO₂, carbonyl and imine substrates catalyzed by [IrH₃(^{Ph}PN^HP)] complex- A. Ramaraj, M. Nethaji , B. R. Jagirdar, *J. Organomet. Chem.* **2019**, 883, 25-34.
2. Capping agent dissolution method for the synthesis of metal nanosponges and their catalytic activity towards nitroarene reduction under mild conditions - S. Ghosh; B. R. Jagirdar, *Dalton Trans.* **2018**, 47(48), 17401-17411
3. Digestive Ripening Facilitated ‘Nano-Engineering’ of Diverse Bimetallic Nanostructures - C. Bhattacharya, N. Arora, B. R. Jagirdar, *Langmuir* **2018**, Article ASAP (DOI : 10.1021/acs.langmuir.8b02208)
4. Temperature-dependent elongation of the H-H bond in dihydrogen complexes of Ru(II) bearing an NHC ligand: Effect of the NHC and trans ligands" - D. Mala, B. R. Jagirdar, Y. P. Patil, M. Nethaji, *Inorg. Chim. Acta* **2018**, 483, 411-424.
5. Synthesis and Mechanism of Formation of Metal Nanosponges and their Catalytic and Hydrogen Sorption Properties- S. Ghosh, B. R. Jagirdar, *ChemistrySelect* **2018**, 3, 7184.
6. Au/CdS Nanocomposite through Digestive Ripening of Au and CdS Nanoparticles and Its Photocatalytic Activity- Bhaskar, S. P.; Karthika, M. S.; Jagirdar, B. R. *ChemistrySelect* **2018**, 3(23), 6638-6646.
7. Effect of the Crystallographic Phase of Ruthenium Nanosponges on Arene and Substituted-Arene Hydrogenation Activity- S. Ghosh, B.R. Jagirdar, *ChemCatChem* **2018**, 10, 3086.
8. Monodisperse Colloidal Metal Nanoparticles to Core–Shell Structures and Alloy Nanosystems via Digestive Ripening in Conjunction with Solvated Metal Atom Dispersion: A Mechanistic Study- C. Bhattacharya, B.R. Jagirdar, *J. Phys. Chem. C*, **2018**, 122 (19), 10559–10574
9. Synthesis of mesoporous iridium nanosponge: a highly active, thermally stable and efficient olefin hydrogenation catalyst– S. Ghosh; B. R. Jagirdar *Dalton Trans.* **2017**, 46, 11431-11439.

10. Approaches to Sigma Complexes via Displacement of Agostic Interactions: An Experimental and Theoretical Investigation– A. Ramaraj; K.H.K Reddy; H. Keil; R. Herbst-Irmer; D. Stalke; E.D. Jemmis; B. R. Jagirdar *Organometallics* **2017**, *36*, 2736-2745.
11. Homobimetallic hydride and dihydrogen complexes of ruthenium bearing N-heterocyclic carbene ligands– Deep Mala; B. R. Jagirdar; Y.P. Patil; M. Nethaji, *J. Organomet. Chem.* **2016**, *830*, 203-211.
12. Small molecule binding and activation on a cationic ruthenium center of a pincer complex– A. Ramaraj; B. R. Jagirdar; M. Nethaji, *J. Organomet. Chem.* **2016**, 825-826, 114-124.
13. A journey from bulk brass to nanobrass: A comprehensive study showing structural evolution of various Cu/Zn bimetallic nanophases from the vaporization of brass– S. P. Bhaskar; B. R. Jagirdar. *J. Alloys Compd.* **2016**, *694*, 581-595.
14. Colloidal europium nanoparticles via a solvated metal atom dispersion approach and their surface enhanced Raman scattering studies– Ancila Urumese; Ramesh Naidu Jenjeti; S. Sampath; B. R. Jagirdar. *J. Colloid Interface Sci.* **2016**, *476*, 177–183
15. Implication of a σ -Methane Complex en Route to Elimination of Methane from a Ruthenium Complex: An Experimental and Theoretical Investigation – R. Kumar; S. Ramakrishnan; E. D. Jemmis; B. R. Jagirdar. *Organometallics* **2015**, *34*(7), 1245 – 1254.
16. Morphological Evolution in Air-Stable Metallic Iron Nanostructures and Their Magnetic Study – N. Arora; S. Amsarajan; B. R. Jagirdar. *J. Phys. Chem. C* **2015**, *119* (1), 665-674.
17. Size Modulation of Colloidal Au Nanoparticles via Digestive Ripening in Conjunction with a Solvated Metal Atom Dispersion Method: An Insight Into Mechanism – S. P. Bhaskar; M. Vijayan; B. R. Jagirdar, *J. Phys. Chem. C* **2014**, *118*, 18214–18225.
18. Digestive ripening facilitated atomic diffusion at nanosize regime: Case of AuIn₂ and Ag₃In intermetallic nanoparticles – N. Arora; B. R. Jagirdar; K. J. Klabunde, *J. Alloys Compd.* **2014**, *610*, 35–44.
19. Contrasting reactivity behavior of the [RuHCl(CO)(PNP)] complex with electrophilic reagents XOTf (X = H, CH₃, Me₃Si) – A. Ramaraj; M. Nethaji; B. R. Jagirdar, *Dalton Trans.* **2014**, *43*, 14625-14635.

20. Synthesis, characterization and reactivity studies of electrophilic ruthenium(II) complexes: a study of H₂ activation and labilization – K. S. Naidu; Y.P. Patil; M. Nethaji; B. R. Jagirdar, *Dalton Trans.* **2014**, *43*, 13410-13423.
21. From (Au₅Sn + AuSn) physical mixture to phase pure AuSn and Au₅Sn intermetallic nanocrystals with tailored morphology: digestive ripening assisted approach – N. Arora; B. R. Jagirdar, *Phys. Chem. Chem. Phys.* **2014**, *16*(23), 11381-11389.
22. Approaches toward (η^2 -HX) (X = H, SiR (R = Me₃ or Me₂Ph), CH₃) sigma-complexes of ruthenium – K. S. Naidu; B. R. Jagirdar, *J. Organomet. Chem.* **2014**, *762*, 9-18.
23. Dynamics of H-atom Exchange in Stable cis-Dihydrogen/Hydride Complexes of Ruthenium(II) Bearing Phosphine and N-N Bidentate Ligands – B. Bera, Y. P. Patil, M. Nethaji, B. R. Jagirdar, *Dalton Trans.* **2014**, *43*, 4726-4733.
24. Bimetallic Core-shell Nanocomposites Using Weak Reducing Agent and Their Transformation to Alloy Nanostructures – U. Sanyal, D. T. Davis, B. R. Jagirdar, *Dalton Trans.* **2013**, *42*, 7147-7157.
25. B–H Bond Activation using an Electrophilic Metal Complex: Insights into the Reaction Pathway – R. Kumar, B. R. Jagirdar *Inorg. Chem.* **2013**, *52*, 28-36.
26. Digestive Ripening: A Synthetic Method par excellence for Core-Shell, Alloy, and Composite Nanostructured Materials – S. P. Bhaskar, B. R. Jagirdar *J. Chem. Sci.* **2012**, *124*, 1175-1180.
27. Metal and Alloy Nanoparticles by Amine-Borane Reduction of Metal Salts by Solid-Phase Synthesis: Atom Economy and Green Process – U. Sanyal, B. R. Jagirdar *Inorg. Chem.* **2012**, *51*, 13023-13033.
28. Carbonization of Solvent and Capping Agent Based Enhancement in the Stabilization of Cobalt Nanoparticles and their Magnetic Study – N. Arora, B. R. Jagirdar *J. Mater. Chem.* **2012**, *22*, 20671-20679.
29. Monodispersity and stability: case of ultrafine aluminium nanoparticles (<5 nm) synthesized by the solvated metal atom dispersion approach – N. Arora, B. R. Jagirdar *J. Mater. Chem.* **2012**, *22*, 9058-9063.

30. Towards sustainability: A new solid state synthetic route for supported metal nanocatalysts – U. Sanyal, S. B. Kalidindi, S. Nair, B. R. Jagirdar *Current Science*, **2012**, *102*, 78-84.
31. Green Chemistry by Nanocatalysis – S. B. Kalidindi, B. R. Jagirdar *Chem. Sus. Chem.* **2012**, *5*, 65-75.
32. Colloidal calcium nanoparticles: digestive ripening in presence of a capping agent and coalescence of particles under an electron beam – U. Sanyal, R. Datta, B. R. Jagirdar *RSC Adv.* **2012**, *2*, 259-263.
33. Hydrolysis of Ammonia Borane as Hydrogen Source, Fundamental Issues and Potential Solutions towards Implementation – U. Sanyal, U. B. Demirci, B. R. Jagirdar, P. Miele *Chem. Sus. Chem.* **2011**, *4*, 1731-1739.
34. Ag@Pd Core–Shell Nanoparticles – D. Jose, B. R. Jagirdar *Ind. J. Chem.* **2011**, *50A*, 1248-1256.
35. A Homobimetallic Complex of Chromium(0) with a σ -Borane Component – B. Bera, B. R. Jagirdar *Dalton Trans.* **2011**, *40*, 10592-10597.
36. Electrochemical Oxidation of Boron Containing Compounds on Titanium Carbide and its Implications to Direct Fuel Cells – V. Kiran, S. B. Kalidindi, B. R. Jagirdar, S. Sampath *Electrochim. Acta* **2011**, *56*, 10493-10499.
37. Chemical Synthesis of Metal Nanoparticles Using Amine-boranes – S. B. Kalidindi, U. Sanyal, B. R. Jagirdar *Chem. Sus. Chem.* **2011**, *4*, 317-324.
38. Photolysis of arene chromium tricarbonyl complexes in presence of amine-boranes: observation of η^5 -borane complexes – B. Bera, B. R. Jagirdar *Inorg. Chim. Acta* **2011**, *372*, 200-205.
39. Synthesis and Characterization of Pd(0), PdS, and Pd@PdO Core-Shell Nanoparticles by Solventless Thermolysis of a Pd-Thiolate Cluster – D. Jose, B. R. Jagirdar *J. Solid State Chem.* **2010**, *183*, 2059-2067.
40. Hydrogen Generation from Ammonia Borane Using Nanocatalysts – S. B. Kalidindi, B. R. Jagirdar *J. Ind. Inst. Sci.*, **2010**, *90*, 181-187.
41. Nature of Hydrogen Atom Trapped Inside Palladium Lattice – D. Jose, B. R. Jagirdar *Int. J. Hydrogen Energy* **2010**, *35*, 6804-6811.

42. Metal Nanoparticles via Atom Economy Green Approach – S. B. Kalidindi, U. Sanyal, B. R. Jagirdar *Inorg. Chem.* **2010**, *49*, 3965-3967.
43. Reactivity Studies of Highly Electrophilic Ruthenium Complexes – C. M. Nagaraja, K. S. Naidu, M. Nethaji, B. R. Jagirdar *Inorg. Chim. Acta* **2010**, *363*, 3017-3022.
44. Dehydrogenation of Ammonia Borane in Fluoro Alcohols – S. B. Kalidindi, M. Nethaji, B. R. Jagirdar *Int. J. Hydrogen Energy* **2010**, *35*, 10819-10825.
45. Synthesis and Structural Characterization of a New Ruthenium Hydride Ethylene Complex – C. M. Nagaraja, M. Nethaji, B. R. Jagirdar *Ind. J. Chem. Sec. A* **2010**, *49*, 167-170.