Dr. KALLURI V.S. RANGANATH

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ACADEMIC QUALIFICATIONS/EXPERIENCE

S.No	Degree	Institution	Year
1	B.Sc	Nagarjuna University, Guntur	1993
2	M.Sc	Sri Venkateswara University, Tirupati (**Physical Chemistry**)	1996
3	Ph.D	IICT (JNTU) (Hyderabad) (Mentor: Dr. B.M. Choudary)	2005
4	Postdoctoral Fellowship	Kyushu University, Japan (Mentor: Prof. Junji Inanaga)	2006-2008
5	Postdoctoral Fellowship	University of Muenster, Germany (Mentor: Prof. Frank Glorius)	2008-2011

Research

We have been actively engaged in the area of surface modification of nanomaterials and their application in heterogeneous and electro catalysis. Development of new materials is of our major focus. We successfully developed some systems based on metal oxide, carbon nanotubes, nanofibers, graphene, for novel application in catalysis.

Awards

- *Dr. K.V. Rao Scientific Society* award by KVRSS Society-**2004 (during Ph.D)**
- *JSPS* Fellowship - **2006-2008**
- *Alexander von Humboldt* Fellowship- **2008-2011**
- Visiting Professor to Kyushu University, Japan **2011**
- Ramanujan Fellowship from DST-**2012**

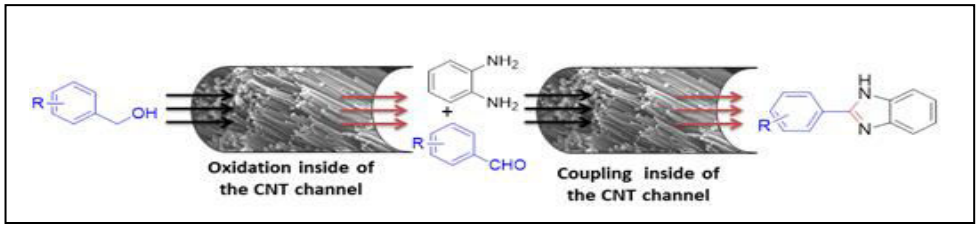
Teaching: Physical Chemistry for UG and PG

Projects Undertaken as PI:

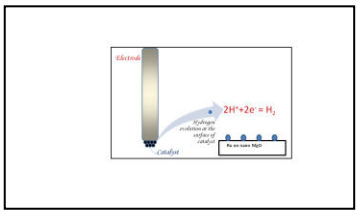
S.No	Name of the Project	Duration	Source of funding	Sanctioned amount
1	Asymmetric and electro catalysis using functionalized materials	2014-2018	DST-SERB	Rs.41,50,000/-
2	Entrapment of nanoparticles: Bridge the Gap in Catalysis	2015-2018	DST-Nanomission	Rs. 31,50,000/-

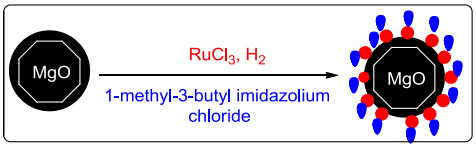
Research and Publications:

1. Remarkable Confinment Effect of Nanofiber in Carbon Nanotubes for Dehydrogenative Coupling of Alcohols with Diamines: A New Route for Synthesis of Benzimidazoles. Melad Shaikh, Richa Yadav, Pawan K. Tyagi, L. Mishara, Kalluri V.S. Ranganath*. ***ChemNanoMat*** 2018, 4, 542-545. [**https://doi.org/10.1002/cnma.201700363**]

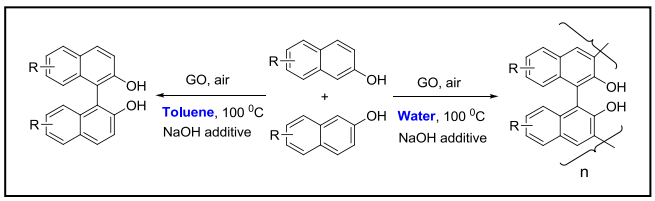


2. Graphene Oxide as a sustainable metal and solvent free catalyst for the dehydration of fructose: A New and Green Protocol. M. Shaikh, S. K. Singh, S. Khilari, M. Sahu, Kalluri V.S. Ranganath* ***Catal. Commun*** 2018, 106, 64-66. [https://doi.org/10.1016/j.catcom.2017.12.018].
3. Ruthenium Nanoparticles Stabilized on Nano Magnesium Oxide in the Presence of Ionic Liquids: A Highly Active and Efficient Catalyst for Hydrogen Evolution Reaction. Mahendra Sahu, Melad Shaikh, S. Khilari and K.V.S. Ranganath*. **CatalGreenChemEng**. 2018, 1 (2), 105-111 [**DOI: 10.1615/.2017021126**]

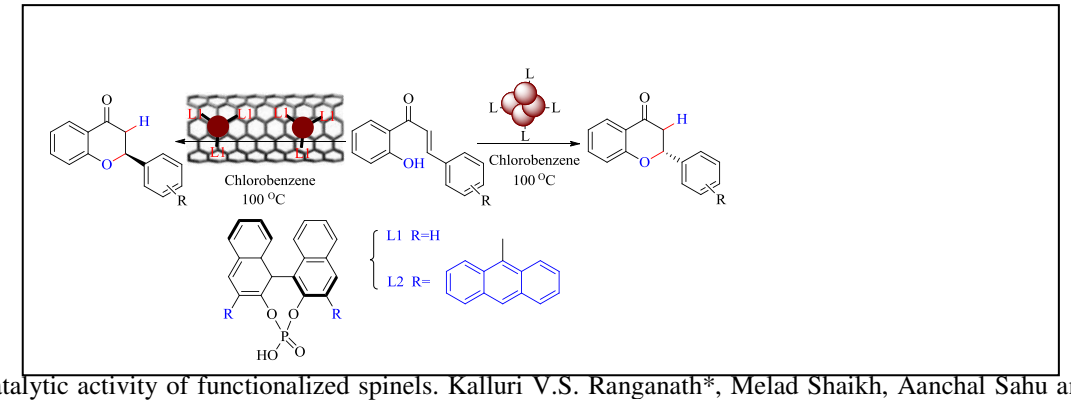




4. Metal Free Carbon as a Catalyst for Oxidative Coupling: Solvent Enhance Poly-coupling with Regioselectivity. Melad Shaikh, Aanchal Sahu, A. Kiran Kumar, Mahendra Sahu, S. K. Singh and Kalluri V.S. Ranganath*. ***Green. Chem*** 2017, 19, 4533-4537.[**DOI: 10.1039/c7gc02227a**]
(Highlighted in Synfacts)

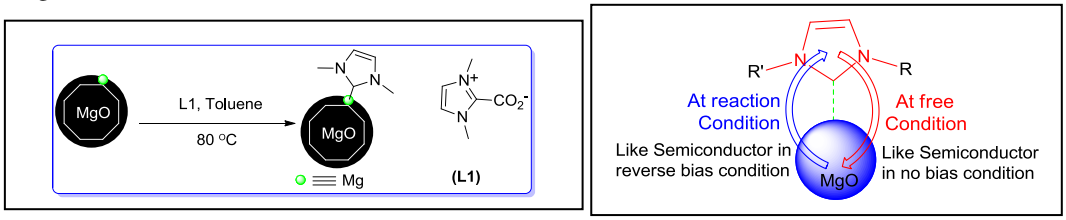


5. Enhanced Reactivity and Selectivity of Asymmetric oxa Michael Addition of 2'-hydroxychalcones in Carbon Confined Space. Melad Shaikh, A. Kiran Kumar, Mahendra Sahu and Kalluri V.S. Ranganath*. ***Chem. Commun*** 2017, 53, 6029-6032.[**10.1039/C7CC01096F**]

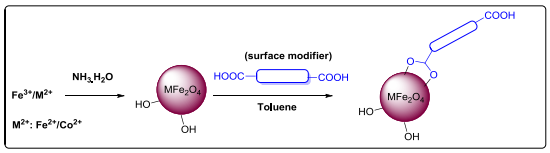


6. Catalytic activity of functionalized spinels. Kalluri V.S. Ranganath*, Melad Shaikh, Aanchal Sahu and G. Sarvani. ***Curr. Org. Chem***. 2017, 21, 2573-2584. [**https://doi.org/10.2174/1385272821666170517144231**]

7. Surface modification of polyhedral nanocrystalline MgO with imidazolium carboxylate for dehydration reactions: A new approach
Melad Shaikh, Mahendra Sahu, Santimoy Khilari, A. Kiran Kumar, Pathik Maji and Kalluri V.S. Ranganath* ***RSC Advances*** 2016, 6, 82591-82595. [**10.1039/C6RA16358K**]

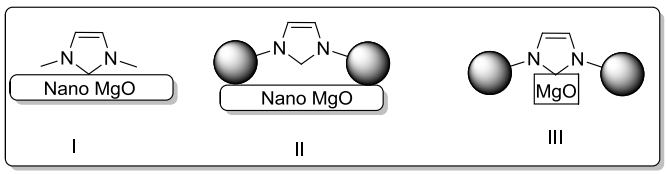


8. Ferrite decorated dicarboxylic acids for the synthesis of 5-hydroxymethylfurfural: A novel and Green Protocol
M. Shaikh, M. Sahu, A. Kiran Kumar and K.V.S. Ranganath*, ***RSC Advances*** 2016, 6, 76795 [**10.1039/C6RA13354A**]

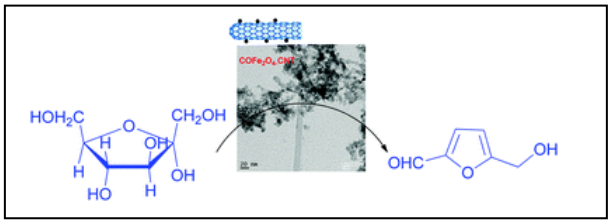


Reactivity:
Flexible ligands > rigid ligands

9. Mg-NHC complex on the surface of nano MgO for catalytic Application
M. Shaikh, M. Sahu, P.K. Gavel, T.G. Reddy, S. Khilari, D. Pradhan and K.V.S. Ranganath*, ***Cat. Commun*** 2016, *84* 89-92. [**https://doi.org/10.1016/j.catcom.2016.06.007**]

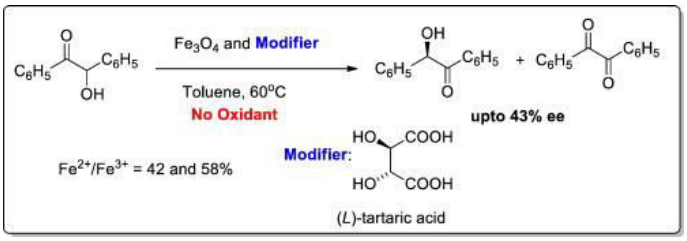


10. $CoFe_2O_4$ Decorated Carbon Nanotubes for Dehydration of Glucose and Fructose.
K.V.S. Ranganath*, M. Sahu, M. Shaikh, P. K. Gavel, S. Khilari and P. Das. ***New J. Chem*** *2016*, 40, 4468-4471 [**10.1039/C6NJ00501B**]



Inverse spinels show higher reactivity than normal spinels when decorated on CNTs!

11. Ferrites Catalyzed Aerobic Oxidation of Benzoin and its Extention to Enantioselective version Melad Shaikh, Mahendra Sahu and Kalluri V.S. Ranganath*. ***Cat. Commun*** 2015, *64*, 18-21 [**https://doi.org/10.1016/j.catcom.2015.01.019**]



12. Efficie erable Catalysts. Melad Shaikh, Mansi , 91-93.

13. Recent Progress of N-Heterocyclic Carbenes in Heterogeneous Catalysis. Kalluri V. S. Ranganath*, S. Onitsuka, A. Kiran Kumar and J. Inanaga. ***Catalysis Science and Technology*** 2013**,** 3, 2161-2181

14. Enantioselective α-arylation of cyclic ketones catalyzed by a combination of an unmodified cinchona alkaloid and a Pd complex. C. Richter, Kalluri V.S. Ranganath, F. Glorius. ***Adv.Synth. Catal***. 2012, 354, 377-382.
15. Comparison of Superparamagnetic Fe_3O_4-Supported N-Heterocyclic Carbene-Based Catalysts for Enantioselective Allylation. Kalluri V.S. Ranganath, A. H. Schafer, F. Glorius. ***ChemCatChem*****.** 2011, 3, 1889-1891.
16. Asymmetric NanoCatalysis using N-Heterocyclic Carbenes as chiral modifiers. Kalluri V.S. Ranganath, K. Johannes, A.Schafer, F. Glorius ***Angew. Chem. Int. Ed.*** 2010**,** 49, 7786
Highlighted in SYNFACTS 2011, 1, 109

17. Super paramagnetic Materials for Asymmetric Catalysis-A Perfect Match. Kalluri V.S. Ranganath, Frank Glorius. ***Catalysis Science and Technology*** 2011, 1, 13.

18. Recent Progress in Asymmetric catalysis on nanoparticle surfaces. Kalluri V.S. Ranganath, Satoaki Onitsuka, Junji Inanaga. ***Trends in Organic Chemistry*** 2010*,* 14, 37

19. Asymmetric catalysis using rare earth nano particles or rare earth ion-doped montmorillonites in combination with chiral modifiers. Kalluri V. S. Ranganath, S. Onitsuka, H. Furuno, J. Inanaga. ***Kidorui*** 2009, 54 198. (Japanese Journal)

20. Asymmetric Michael addition of malonates to enones catalyzed by nanocrystalline MgO. M. L. Kantam, Kalluri V S. Ranganath, K. Mahender, L. Chakrapani, B. M. Choudary. ***Tetrahedron. Lett***. 2007, *48*, 1369-1371.

21. The one-pot Wittig reaction: A facile synthesis of α,β- unsaturated esters and nitriles by using nanocrystalline magnesium oxide. B.M. Choudary, K. Mahender, Kalluri V.S Ranganath, M. L Kantam, T. Athar. ***Adv. Synth. Catal***. 2006, 348, 1977.

22. Catalytic asymmetric epoxidation of unfunctionalised olefins using silica, LDH and resin-supported sulfonato-Mn(salen) complex. B. M. Choudary, T. Ramani, H. Maheswaran, L. Prasanth, Kalluri V.S. Ranganath, B. Sreedhar. ***Adv.Synth.Catal***. 2006, 348, 493.

23. Asymmetric Epoxidation of Olefins by Manganese (III) Complexes Stabilised on Nanocrystalline MgO**.** B. M. Choudary, U.Pal, M. L. Kantam, Kalluri V.S. Ranganath, B. Sreedhar. ***Adv.Synth.Catal***. 2006, 348, 1038-1042.

24. Reductive N-acylation of nitroarenes by Fe^{3+}-montmorillonite. B. M. Choudary, Kalluri V S Ranganath, M. Sateesh, M. L. Kantam, B. Sreedhar. ***J.Mol.Cat A*****.** 2006, 244, 213.

25. Nanocrystalline MgO for asymmetric Henry and Michael reactions. B. M. Choudary, Kalluri V S Ranganath, U. Pal, B. Sreedhar ***J. Am. Chem. Soc*** 2005, 124, 13167.

26. Wadsworth-Emmons reactions catalyzed by nanocrystalline MgO. B. M. Choudary, K. Mahender, Kalluri VS Ranganath. ***J. Mol.Cat A*.** 2005, 234, 25.

27. Synthesis of flavanones using nanocrystalline MgO. B. M. Choudary, Kalluri V S Ranganath, J. Yadav, M. L. Kantam. ***Tetrahedron. Lett***. 2005, 46, 1369.

28. Friedel-Crafts acylation of aromatics and heteroaromatics by beta zeolite. B. M. Choudary, Kalluri V S Ranganath, M. Sateesh, K. B. Shiva kumar, B. Sreedhar. ***J. Mol. Cat A***.2005, 225, 15.

29. Hydrogen Processing by Fe^{3+}-montmorillonite. B. M. Choudary, M. L. Kantam, Kalluri VS Ranganath, K.K Rao ***Angew. Chem Int. Ed*.** 2005, 44, 322.

30. Bifunctional Nanocrystalline MgO for Chiral Epoxy Ketones via Claisen-Schmidt Condensation-Asymmetric Epoxidation Reactions. B. M. Choudary, M. L Kantam, Kalluri VS Ranganath, K. Mahender, B. Sreedhar ***J.Am.Chem.Soc*.** 2004, 126, 3396.

31. Selective acetylation of 5-numbered aromatic heterocycle compounds using metal-exchanged clay catalysts. B. M. Choudary, M. Sateesh, M. L. Kantam, Kalluri VS Ranganath, K. V. Raghavan, ***Catal.Lett***. 2001, 76, 231.

List of Patents granted

1. Process for the separation of racemic mixtures using nanoporous silica. B. M. Choudary, Kalluri V.S Ranganath, M. Lakshmi Kantam. **US Patent 6 709 597 (2004).**

2. Method of processing of hydrogen for reductive acylation of nitro, azido and cyano arenes. B. M. Choudary, Kalluri V.S Ranganath, M. Lakshmi Kantam. **US Patent 6 673 967 (2004).**

3. Selective Nitration of thiophene to 2-nitrothiophene using metal exchanged clay catalysts. M. Lakshmi Kantam, KalluriV.S Ranganath, B.M.Choudary, K. V. Ramprasad. **US Patent 6 794 521(2004**).

4. Process for the preparation of 4'-isobutylacetophenone. B. M. Choudary, M.Sateesh, M. Lakshmi Kantam, Kalluri VS Ranganath, K. V. Raghavan. **US Patent 6 215 024 (2002)**

5. An improved process for acylation of naphthyl ethers. B. M. Choudary, M.Sateesh, M. Lakshmi Kantam, Kalluri V.S Ranganath, K. V. Raghavan. **US Patent 6 320 082 (2001)**