



## Application of Modified Iron Oxide Nanoparticles in Functional Group Transformations in Organic Molecules

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### Abstract:

Over the decade, nanomaterials have drawn considerable interest due to their wide variety of potential applications to environmental health, mechanics, biomedical sciences, chemical and space industries, drug gene delivery, catalysis and optics. With the development of nanoscience and nanotechnology, a phenomenal breakthrough has been achieved by exploiting the properties of materials at nanoscale dimension. In our day to day life, titanium dioxide and zinc oxide nanoparticles are used in sunscreens as they reflect/scatter ultra violet light more effectively than larger particles. Nanoparticles are of immense scientific significance as they are a link between bulk materials and atomic or molecular structure. Nanoparticles are the essential component of nanoscience because of their unprecedented and unexpected properties, mainly due to the large surface area of the material. At nanoscale they exhibit novel and unpredictable features such as extraordinary strength, chemical reactivity, super paramagnetic behaviour and conductivity. Today these materials can be synthesized and modified with various chemical functional groups which allow them to be conjugate with ligands and make them suitable for innovative technological applications such as catalysis, sensor data storage and optical devices etc.

### Biography:

Prof Alka Agarwal is working in Department of Medicinal Chemistry, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India 221005. She did M.Sc. and Ph.D in medicinal chemistry. She is teaching graduate and post graduate medical students of Ayurveda. Her



research area of specialization is synthesis of newer antimicrobials and their binding studies with HSA using UV, fluorescence, CD, molecular docking and DFT techniques. Our group is also working on XRD studies and molecular docking studies of small molecules.

### Publication of speakers:

1. D.W. Gu, X.X.Guo, *Tetrahedron*, 71(2015) 9117-9122.
2. A. C. shekhar, A. R. kumar, G. Sathaiah, V. L. paul, M. Sridhar, P. S. rao, *Tetrahedron Lett.* 50 (2009) 7099-7101.
3. M. H. Sarvari, H. Sharghi, *J. Org. Chem.* 71 (2006) 6652-6654.
4. J. G. Kim, D. O. Jang, *Synlett.* 8(2010) 1231-1234.
5. M. Sajadi, M. Maham, A.Rezaei, *Lett. Org. Chem.* 11 (2014), 49-54.

### Webinar on Nano-Engineering and Its Applications

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