

28<sup>th</sup> International Conference on  
**Advanced Materials, Nanotechnology and Engineering**

June 13, 2022 | Webinar

Harshita Sachdeva, J Material Sci Eng 2022, Volume 11

## **Synthesis of biologically-relevant heterocyclic compounds using transition metal-based nanoparticles as green catalyst**

**Harshita Sachdeva**

Department of Chemistry, University of Rajasthan

The design and development of cutting-edge environmentally benign synthetic approaches using well-organized catalytic systems has gained significant attention in recent years to mitigate the toxic effects of pollutants. Many interesting catalysts have recently been implemented in this context and are rapidly growing at a faster pace to meet the ecological demands. Although homogeneous catalysts bestow advantages of excellent selectivity and high catalytic activity and have been employed in petrochemical industry for the manufacture of several significant value-added consumer products, they still possess several disadvantages of low thermal stability, non-reusability and, hence, non-recyclability. Application of selective, highly active and energy-efficient heterogeneous catalyst in organic synthesis is a thought-provoking area and is a key to sustainable development. Among these are metal oxide nanoparticles (NPs) which are well-recognized to catalyze various organic transformations. The use of transition-metal nanoparticles in catalysis is crucial as they mimic metal surface activation and catalysis at the Nano scale and thereby bring selectivity and efficiency to heterogeneous catalysis. Metal oxide nanoparticles in the form of Nano catalyst have emerged as viable alternatives to conventional materials in various fields of chemistry and attracted marvelous interest of chemists. Moreover, they are known to be promising heterogeneous catalysts in a variety of organic transformations. Keeping in view of above observations and our interest in the synthesis of bioactive heterocyclic compounds using green methods, bioactive heterocycles have been prepared using transition-metal based nanoparticles as green catalysts under the framework of green chemistry.

**Keywords:** Nano catalysts, Organic synthesis, Heterocycles, Biologically-active.

### **Biography**

Dr Harshita Sachdeva is presently working as Associate Professor in the Department of Chemistry, University of Rajasthan, Jaipur Rajasthan, India. She received her Ph.D. in 2000 from the Department of chemistry, University of Rajasthan, Jaipur, on the topic "Synthesis of Some Potentially Biodynamic Heterocycles. She has teaching and research experience of around 22 Years. Her current research interests include Green Chemistry, Nano catalysis, Medicinal Chemistry and Synthetic Organic Chemistry. She has around 45 research papers and review articles to her credit in Journals of National and International repute and she has supervised 3 Ph. D students; presently 4 students are doing Ph. D under her supervision. She is a member of Indian Society for Technical Education, Association of Chemistry Teachers, and Society for Materials Chemistry.

**Received:** May 2, 2022; **Accepted:** May 4, 2022; **Published:** June 13, 2022