

Fluorescent Supramolecular Assemblies: A search for new catalytic/photocatalytic Systems

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Abstract:

Our research work aims at development of fluorescent supramolecular assemblies which served as nanoreactors for the preparation of metal NPs. During the reduction process, supramolecular nanoassemblies are themselves oxidized to generate supramolecular polymeric species. We further utilize the as prepared polymeric assemblies in combination with metal/metal oxide NPs for carrying out various organic transformations in aqueous/mixed aqueous media. Recently, we have utilized same strategy for preparation of alloy metal NPs. We have developed hybrid Cu₂O-Fe₂O₃ NPs¹, AgCu₂O NPs², Ag@Fe₃O₄ nanoclusters³, Au-Fe₃O₄ nanodots⁴⁻⁶ stabilized by supramolecular assemblies based on hexaphenylbenzene derivatives for carrying out Ullman Goldberg coupling, three component click reaction, preparation of indazole derivatives and C-C/C-N bond formation reactions.⁷⁻⁹

References and Notes:

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Bio-Sketch of Speaker



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Vandana Bhalla received her Ph.D from the Department of Chemistry, Guru Nanak Dev University in 1998. She was JSPS postdoctoral fellow for two years at Tohoku University, Sendai, Japan, and JST researcher in Aida Nanospace project with Prof. Takuzo Aida of University of Tokyo, Japan. She is presently working as associate professor at Department of Chemistry, Guru Nanak Dev University, Amritsar, India. She received various prestigious awards: Bronze Medal awarded by Chemical Research Society of India (CRSI), Bangalore, Thomson Reuters Research Excellence India Citation Award 2015, Bhagya-Tara award by Panjab University for contribution in organic chemistry 2015, First Shiv Nath Rai Kohli Mid-Career Best Scientist Award for contribution in Chemical Sciences by Panjab University, Chandigarh 2018, Prof. S.S. Sandhu Award, Rajib Goyal Award 2018 and INSA Teacher Award 2020. Her current interest includes development of fluorescent probes and nano-catalysis. She has published more than 200 research papers in international journals.