



## Nano-materials and some of their catalytic applications

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### Abstract:

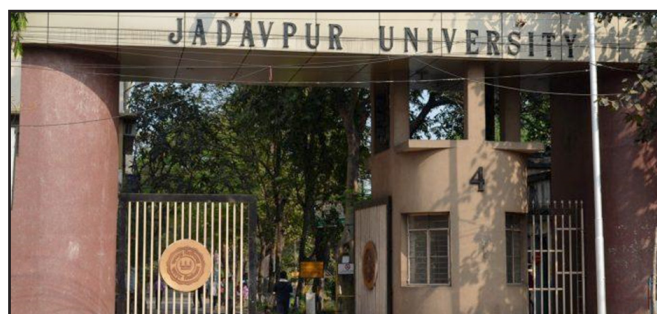
Like extensive activity in diverse fields, nanomaterials have evoked wide application in the fields of catalysis. This is because the properties of nanomaterials can be tailored by monitoring their size, shape, morphology, crystallinity, nature and content of capping agents, synthesis protocol etc [1-3]. Efficient catalysis helps in the development of different devices like fuel cells, photochemical solar cells, sensors etc. Moreover, it helps in chemical synthesis of useful compounds and degradation of certain pollutants like phenol, Rhodamine-B dye [4] etc for environmental remediation. In the lecture, the effects of various parameters for syntheses and use of nano-catalysts, eg, strength and nature of redox and capping agents, agitation, precursor ratio, heat treatment, surface exposition etc. will be talked about. Moreover the applications of these nanoparticles in reference to some chemical, photochemical and electrochemical important reactions will be discussed. The fate of catalysts during reaction and recyclability and mechanism of certain reactions will also be stated.

### Biography:

Swapan Kumar Bhattacharya is working as a Chemistry professor in Jadavpur University

### Publication of speakers:

1. P. S. Roy, S. K. Bhattacharya. *Catal. Sci. Technol.*, 2013, 3, 1314-1323.



2. P. Mukherjee, P. S. Roy, K. Mandal, D. Bhattacharjee, S. Dasgupta, S. K. Bhattacharya, *Electrochimica Acta.* 2015, 154, 447-455.
3. S. Banik, A. Mahajan, A. Ray, D. Majumdar, S. Das, S. K. Bhattacharyaa *FlatChem* 2019, 16, 100111.
4. K. K. Bera, R. Majumdar, M. Chakraborty, S. K. Bhattacharya. *J. Hazard. Mater.*, 2018, 352, 182-191.

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