



Effect of graphitic carbon nitrides (g-C₃N₄) prepared from different precursors on photocatalytic activity of TiO₂/Bentonite Nanocomposite

Amit Mishra

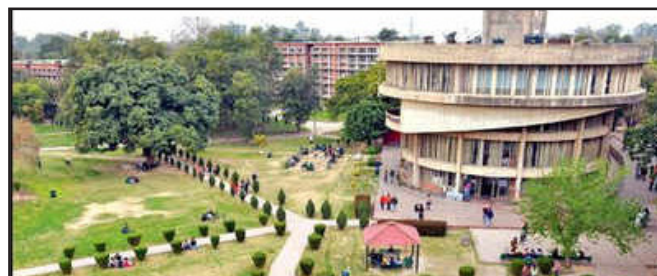
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Abstract:

The nanocomposites of g-C₃N₄/TiO₂/bentonite have been synthesized from three different precursors (urea, thiourea and their 1:1 mixture). The variation in the thermal decomposition and condensation pathways led to the formation of g-C₃N₄ with different morphological (sheets or tubes like structures) and photophysical aspects which affect the photocatalytic activity of g-C₃N₄/TiO₂/bentonite nanocomposite. The composite synthesized from urea precursor was highly effective in degrading (90%) an industrial dye (reactive brilliant red) under visible light irradiation. The high activity was attributed due to formation of tubular g-C₃N₄ which leads to the generation of high surface area, and uniform pore distribution in the nanocomposite.

Biography:

Dr. Amit Mishra did his masters in Nanoscience and Nanotechnology, from Panjab University, Chandigarh, India in the year 2013. Recently, He completed his P.hD under the supervision of Dr. Soumen Basu from School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology University, Patiala. His research interests include Photocatalysis, Energy Materials, and Sensors.



Publication of speakers:

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3. H. Li, X. Wu, S. Yin, K. Katsumata, Y. Wang, Effect of rutile TiO₂ on the photocatalytic performance of g-C₃N₄/brookite-TiO₂-xNy photocatalyst for NO decomposition, *Appl. Surf. Sci.*, 392 (2017) 531-539.

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