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## Enhanced Photocatalytic Degradation of Methylene Blue Using LaTiO<sub>3</sub> Nanoparticles

A sol-gel (citric acid) technique was used to synthesize LaTiO<sub>3</sub> at 3 different temperatures. The structural, morphological, and compositional analyses were implemented by making use of X-ray diffraction, scanning electron microscopy, energy-dispersive X-ray, transmission electron microscope, and ultraviolet-visible spectroscopy. The XRD studies aid the synthesis of the perovskite-type LaTiO<sub>3</sub> nanoparticles formed and the nature of the crystallinity were shown to enhance with rise in annealing temperature. The morphology of the samples shows a grain-like particle with the proper weight proportion of component elements. In addition, we have tested the samples photocatalytic activity by degrading a methylene blue dye solution. An improved photocatalytic activity was found at an elevated calcination temperature in particular samples.

Keywords : Sol-gel, Perovskite, LaTiO<sub>3</sub>, Photocatalytic, Dye degradation

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