

## عنوان مقاله:

An experimental study on photocatalytic degradation to free river water from toxic dye pollutant using Zn doped TiO<sub>2</sub> nanoparticles

## محل انتشار:

مجله بین المللی فناوری نانو در آب و محیط زیست, دوره 8, شماره 3 (سال: 1402)

تعداد صفحات اصل مقاله: 9

## نویسندگان:

Sarathi R - *Research Scholar, PG and Research Department of Physics, Sri Paramakalyani College Alwarkurichi, Tamilnadu, India*

Sheeba N. L. - *Research Scholar, PG and Research Department of Physics, Sri Paramakalyani College Alwarkurichi, Tamilnadu, India*

Selva Esakki E - *Research Scholar, PG and Research Department of Physics, Sri Paramakalyani College Alwarkurichi, Tamilnadu, India*

Renuga Devi L - *Research Scholar, PG and Research Department of Physics, Sri Paramakalyani College Alwarkurichi, Tamilnadu, India*

Meenakshi Sundar S - *Principal, Sri Paramakalyani College, Alwarkurichi, Tamilnadu, India*

## خلاصه مقاله:

Water pollution by organic pollutants is an ever increasing problem for the global concern. The present study is aimed at synthesizing Titanium di oxide nanoparticles under two different concentrations of Zinc as dopant material. The synthesized nanoparticles are used as a catalyst in degrading malachite green dye an organic pollutant. The morphological studies of zinc doped Titanium di Oxide nanoparticles were carried out using different spectroscopic and microscopic tools. From the XRD Spectra average crystallite size, lattice parameters, volume of unit cell are studied. The bandgap of the material was found by using UV-Vis absorbance Spectroscopy. Fourier Transform Infrared Spectroscopy confirms the functional group present in the sample. Under light illumination, metal oxide nanoparticles act as a good photocatalyst in converting a harmful material into a less harmful one. In this aspect the malachite green dye prepared from river water is degraded under the illumination of visible light. Almost above ۹۵% of .degradation in ۶۰ min is observed reporting the Zinc doped Titanium dioxide as an eminent photocatalyst

## کلمات کلیدی:

Zinc, Titanium di Oxide, Photocatalysis, Malachite green dye, Concentration

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1801024>



