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## Tin oxides nanostructures: Synthesis, characterization and their photocatalytic application.

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**Abstract content** (Max 300 words) **Formatting & Special chars**

Contamination of waste water by dyes from textile industries is a major concern. Due to the disposal of dyes plants and animals are under hazardous threat. Some of these dyes colour the waste water and as a result they block the penetrating role of sunlight thus affecting the respiratory properties of aquatic animals. Semiconductors nanomaterials have a huge role to play in addressing this matter. In this respect, the semiconductor, Tin Oxide ( $\text{SnO}_2$ ) nanoparticles was synthesized and capped with different agents such as Arginine, Hexamethylenetetramine (HMT) and Sodium hexametaphosphate (SHMP). The purpose of the latter compounds was to reduce its band gap and improvement of its photocatalytic properties. The hydrothermal and co-precipitation methods were used for the synthesis process. The nanoparticles were characterized using X-ray diffraction (XRD), Transmission Electron Microscopy (TEM), Scanning electron microscopy (SEM), UV-VIS Spectroscopy, Fourier Transform Infrared spectroscopy. The photocatalytic degradation of dyes was investigated using the UV-Vis spectroscopy. The dyes which were employed in monitoring the photocatalytic degradation activity are the azo dyes such as Congo red and methyl red. It was noticed that photocatalytic properties were dependent on morphologies and band gap of  $\text{SnO}_2$  nanostructures. Furthermore, the detail result of evolved morphologies and catalytic study will be discussed in the presentation.

**Apply to be considered for a student award (Yes / No)?**

yes

**Level for award (Hons, MSc, PhD, N/A)?**

MSc

**Main supervisor (name and email) and his / her institution**

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**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

yes

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yes

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