

## **E2-18 Photomineralization of textile dyes**

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Photoassisted oxidation of organic contaminants in water has been studied in order to improve the quality of water. Wide band gap semiconductor materials such as TiO<sub>2</sub>, ZnO are widely used for this purpose as they produce highly potent oxidant (holes) upon illumination at the semiconductor surface. The technical limitation of separating the dispersed unsupported catalyst has led to a search of inert supports for easy removal of the catalyst. Studies on TiO<sub>2</sub> coated on solid supports such as nafion membranes, glass beads, clays and metal support have been reported with varying degrees of success. It was found that commercially available soda glass plates can be used as inert supports and TiO<sub>2</sub> coated on these glass plates are photocatalytically active. The present study was carried out to find the photocatalytic activity of the immobilized catalyst on the degradation of textile dye wastes. Dye waste was subjected to photolysis with a mercury arc lamp (λ = 365 - 366 nm) and chemical oxygen demand was measured as a function of time. Results indicate that total mineralization can be achieved after 7h. This method is a low cost process and plates can be reused. The major drawback is the requirement of uv irradiation for water decontamination.

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