

**PHOTOCATALITICAL DEGRADATION OF DYE POLLUTANTS UNDER
VISIBLE IRRADIATION**

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ABSTRACT

The TiO₂-assisted photodegradation of dyes have been examined under visible light irradiation (>420 nm) by UV-Visible, proton-NMR, ESR and GC-MS spectroscopies, and by chemical oxygen demand (COD) methods. The major component of the peroxides produced is H₂O₂. We have also confirmed that in addition to CO₂ and to smaller carbonyl species, the dyes degraded to many intermediates (such a phthalic acid) which are unable to degrade further because they do not absorb the actinic visible light radiation. Mechanisms for the photo-assisted degradation of dyes mediated by TiO₂ particles under visible light radiation are proposed.