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Photocatalytic Degradation of Organic Compounds on TiO₂ Powders —FT-IR Investigation of Surface Reactivity and Mechanistic Aspects—

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This review examines a series of studies investigating the molecular phenomena occurring on the surface of TiO₂, in the dark and under ultra violet spectroscopy (UV) irradiation, in processes intended to achieve the photocatalytic abatement of organic pollutants (*e.g.* phenols, VOCs, acetonitrile) of air and water. The investigation technique was fourier transform infrared spectroscopy (FT-IR), applied under simulated operating conditions, augmented with high resolution transmission electron microscopy for the elucidation of the surface structure and morphology of the TiO₂ particles. The results indicate the key role of surface hydroxyl groups as adsorbing/reacting centres (under UV irradiation) and the possibility that basic surface centres (hydroxyl groups and/or surface O²⁻ of the TiO₂ lattice) also affect the surface chemical processes.

Keywords: [Photodegradation](#), [Organics](#), [Titanium \(IV\) oxide](#), [FT-IR](#), [TEM](#)[\[PDF \(789K\)\]](#) [\[References\]](#)Download Meta of Article[\[Help\]](#)[RIS](#)[BibTeX](#)

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