

**Photodegradation of methyl green using  
visible irradiation in ZnO suspensions  
Determination of the reaction pathway and  
identification of intermediates by a  
high-performance liquid  
chromatography–photodiode  
array-electrospray ionization-mass  
spectrometry**

麥富德

**Mai FD;Chen CC;Chen JL;Liu SC**

摘要.

**Abstract**

Heterogeneous photocatalytic treatment of a dye called methyl green (MG), which was simulating textile wastewater from associated auxiliary chemicals, was investigated using ZnO. A detailed investigation of the photodegradation of MG has been carried out in the ZnO suspension irradiated with visible light. The effects of various factors - viz. pH values, amount of catalyst, initial dye concentration, and the presence of NaCl, Na<sub>2</sub>CO<sub>3</sub>, H<sub>2</sub>O<sub>2</sub>, and Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub> - on the degradation efficiency were studied. Thirty-two intermediates were separated, identified, and characterized by high-performance liquid chromatography-photodiode array-electrospray ionization-mass spectrometry (HPLC-ESI-DAD-MS) technology, giving us insight into the pathways of the degradation process.