

Study on the ZnO photocatalytic activities by hydrogen treatment and annealing treatment.

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Zinc oxide is a good candidate as a photocatalyst having many advantages for photocatalysis. When the ZnO nanoparticles exposed to UV light, REDOX reaction occurs on the surface of the ZnO. As a result, harmful organic materials were decomposed and converted CO₂ and water. We used as the photocatalyst that have synthesized the ZnO nanoparticles by spray-pyrolysis method using a Zn(CH₃COO)₂ · 2H₂O source.

Synthesized ZnO nanoparticles were treated annealing and thermal hydrogen treatment. In this study, we have observed the photocatalytic activities of ZnO nanoparticles with increasing the annealing temperature and thermal hydrogen treatment temperature.

We analyzed characteristic of treated ZnO nanoparticles by the X-ray Diffraction(XRD), Fourier transform infrared (FT-IR) spectroscopy, Scanning Electron Microscopy (SEM), Energy Dispersive Spectrometer (EDS). And the photocatalytic activities of treated ZnO nanoparticles were measured by UV-VIS spectroscopy through the degradation of methylene blue solution.