

Low Cost Production Method of CdS Based Photocatalysts

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In order to produce visible active photocatalysts for water splitting [1] in the presence of sulfide ions, a cheap and environmentally friendly method was developed. Thus, efficient PdS/

Cd_{1-x}Zn_xS type photocatalysts [2] were obtained in a single step by hydrothermally converting cadmium hydroxide originated from Ni-Cd battery wastes in the presence of zinc sulphide. The influence of pH and ultrasonic field on photocatalysis reaction was investigated. The pH was controlled by the addition of NaOH in solution. Photocatalysis experiments were also performed in monochromatic (470 nm) and simulated solar light. The photocatalysts reactivation by hydrothermal treatment was also investigated. The photocatalysts were characterized by X-ray powder diffraction (XRD), transmission electron microscopy (TEM), scanning electron microscopy (SEM), UV-visible spectroscopy, photoluminescence spectroscopy (PL) and energy-dispersive X-ray (EDX).

References

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