

Preparation and Enhanced Visible-Light Photocatalytic H₂-Production Activity of CdS Quantum Dots-Sensitized Zn_{1-x}Cd_xS Solid Solution

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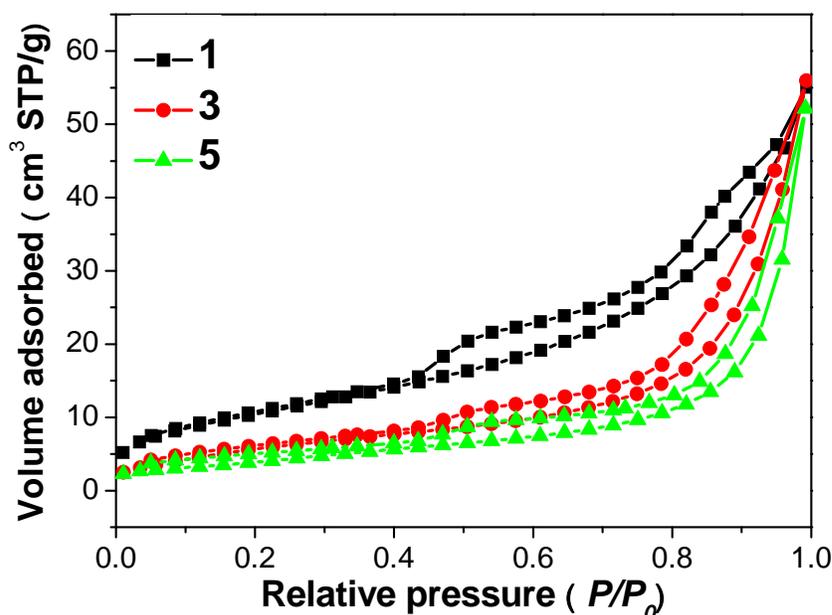


Figure S1. Exemplary nitrogen adsorption-desorption isotherms for ZnS (sample 1) and CdS QDs-sensitized Zn_{1-x}Cd_xS solid solutions (samples 3 and 5 with Cd/Zn ratios = 5 and 20, respectively). These isotherms show hysteresis loops at the relative pressures above 0.45 (hysteresis in this range is characteristic for type IV isotherms, which are observed for mesoporous materials) and a steady increase in adsorption at the relative pressures above 0.9 (such behavior is characteristic for type II isotherms, which are obtained for macroporous or non-porous samples). Thus, the samples studied exhibit enlarged specific surface area due to the presence of some mesopores and macropores.

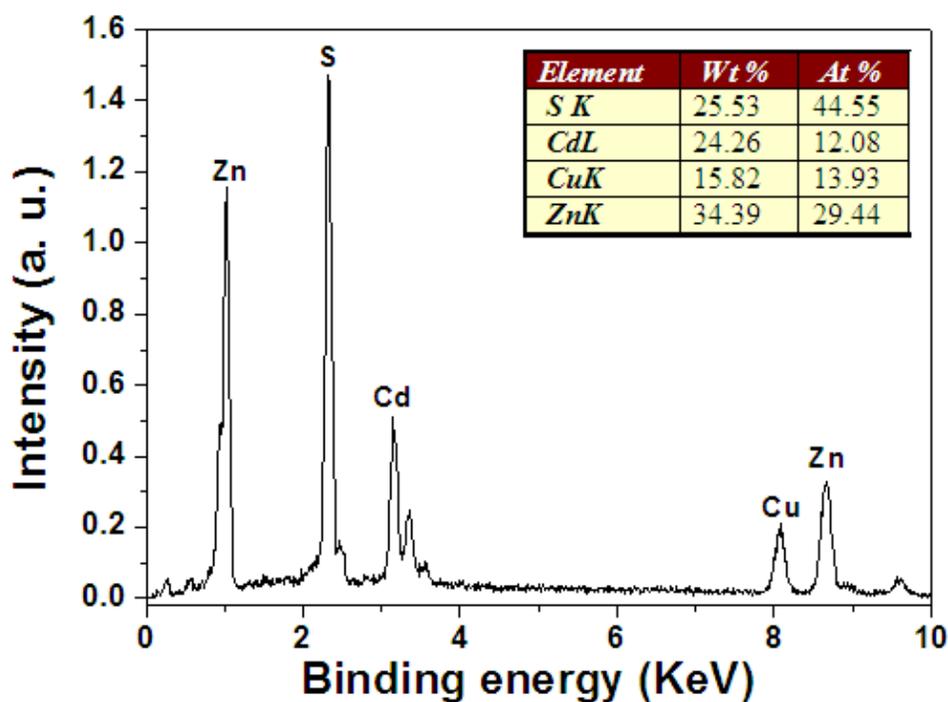


Figure S2. The electron dispersive X-ray (EDX) spectrum for $Zn_{1-x}Cd_xS$ solid solution with CdS quantum dots (sample 3 obtained at Cd/Zn ratio = 5); this spectrum was recorded by using an Oxford Instruments X-ray analysis system. The Cu peak originates from the EM copper grid used as a sample holder.