

Synthesis of Na doped ZnO Hollow Spheres with Improving Photocatalytic Activity for Hydrogen Production

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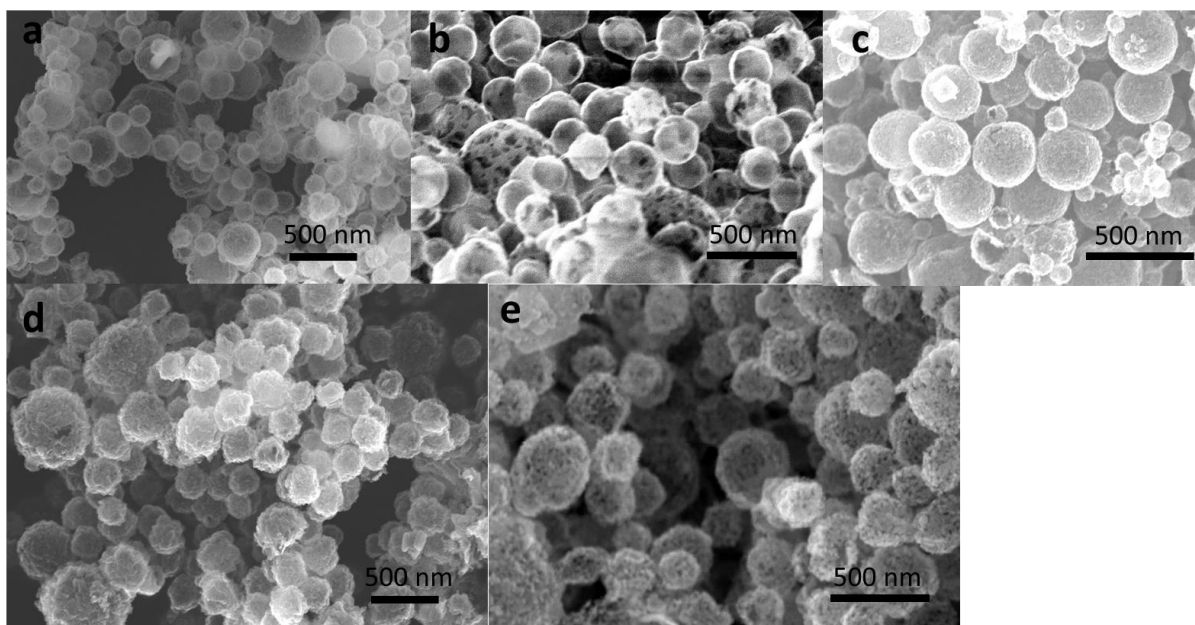


Figure S1. (a)-(e) were the SEM images of the pure Na doped ZnO hollow spheres with 0, 0.2, 0.7, 2 and 4 at% Na doping concentration, respectively.

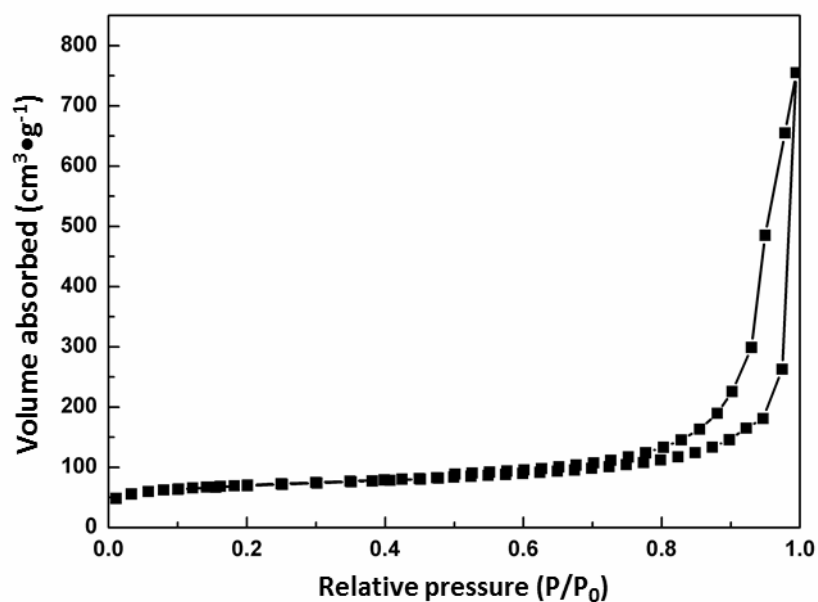


Figure S2. The nitrogen adsorption/desorption isotherms of 0.7% Na-ZnO hollow spheres.

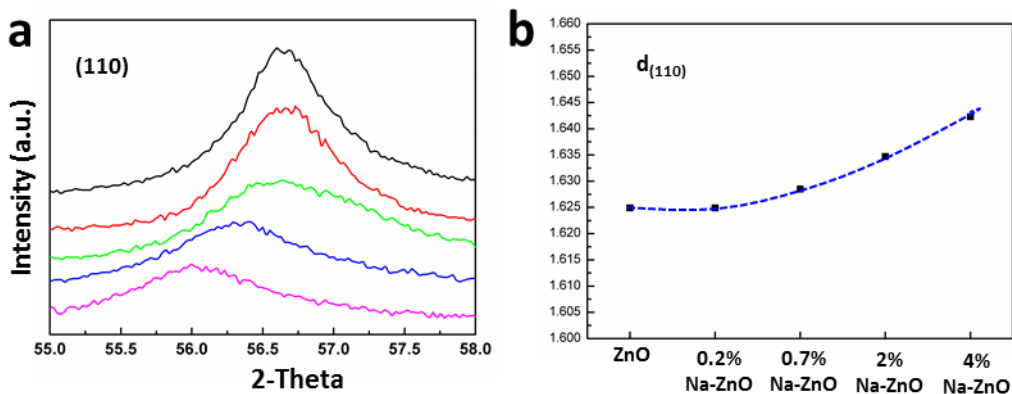


Figure S3. (a) was the enlarged view of the (110) peak shows a peak shift of Na doped ZnO and (b) showed the (110) lattice parameter change determined from positions of (110) peaks in (a). Reference patterns for wurtzite ZnO (PDF#36-1451).

The (110) lattice spacing was 1.6249, 1.6249, 1.6285, 1.6347, 1.6423 Å for ZnO with 0, 0.2%, 0.7%, 2%, 4% Na doped concentration.

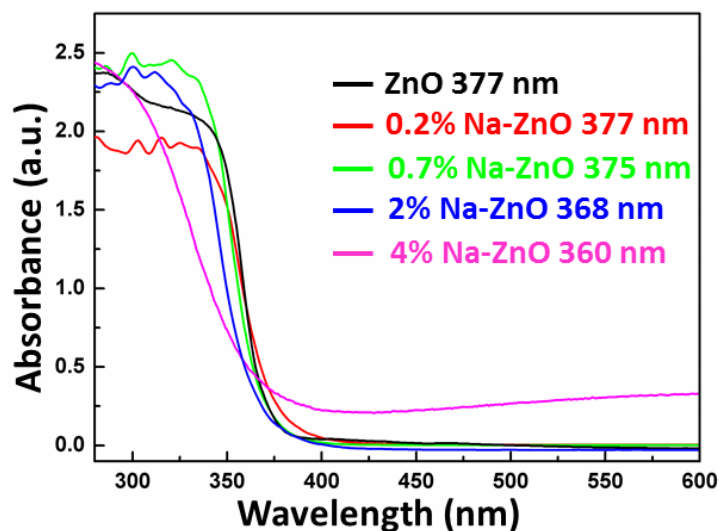


Figure S4. The UV adsorbance spectra (calculated from diffuse reflectance spectra) of the Na-ZnO hollow spheres with 0, 0.2, 0.7, 2 and 4 at% Na doping concentration.

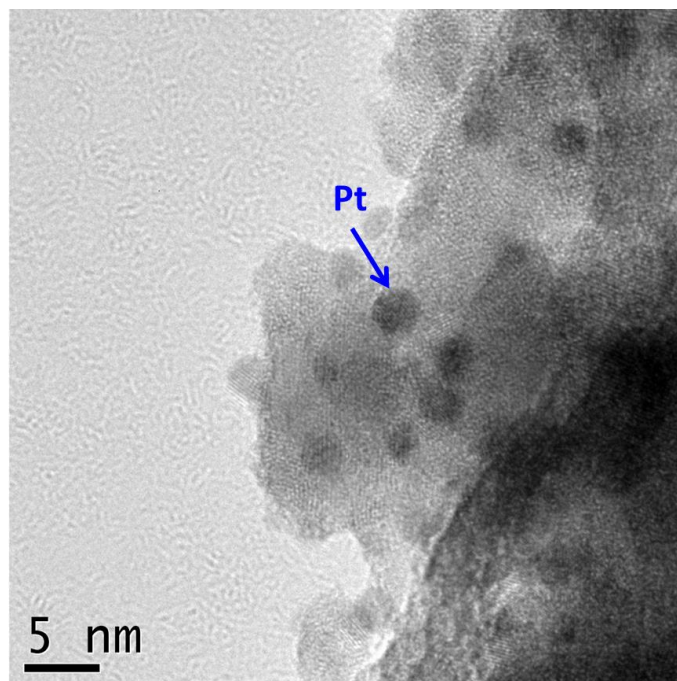


Figure S5. TEM image of 0.7% Na-ZnO/Pt hollow spheres.

The TEM image of the typical 0.7% Na-ZnO hollow spheres decorated with Pt nanoparticles. It recorded that the Pt nanoparticles were attached on the shells. We detected that the size of Pt nanoparticles was in 3 nm level.

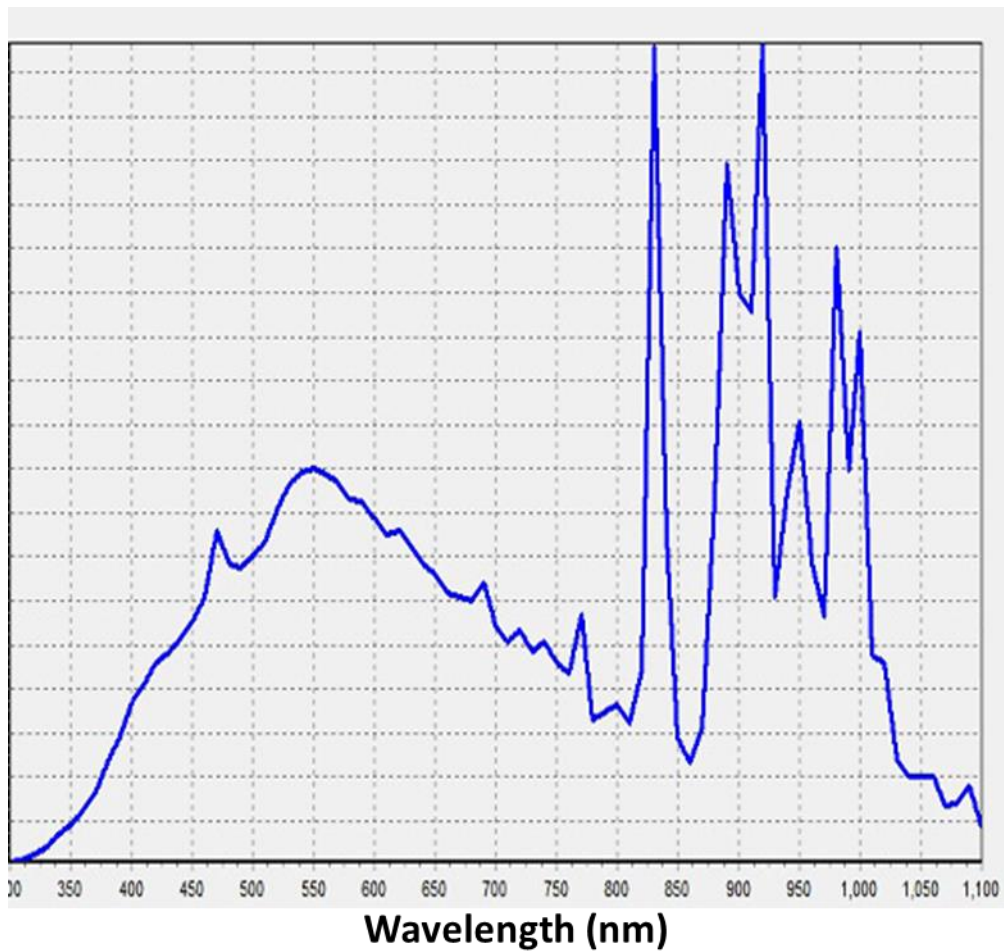


Figure S6. The energy distribution of our xenon lamp provided by manufacturers.