

Supporting Information

Azobenzene-modified Ag/Ag₂O/CN photocatalyst with photoresponsive performance for controllable photodegradation of tetracycline

2.2. Characterization of as-prepared samples

The crystalline properties of as-prepared photocatalysts were characterized via X-ray diffraction (MAC Science, Japan) with Cu-K α radiation. Surface electronic states and the elements on the surface of photocatalysis were measured on X-ray photoelectron spectroscopy (XPS) by Thermo ESCALAB 250X (America) electron spectrometer. The functional groups of the as-synthesized photocatalysts were tested by Fourier transform infrared spectroscopy (FT-IR). The morphology of as-prepared samples and energy dispersive spectrometer (EDS) images were observed by scanning electronic microscopy (SEM) on an S-4800 field emission. The transmission electron microscopy (TEM) and high-resolution TEM (HRTEM) of as-prepared samples were obtained on JEM-2010 electron microscope with accelerating voltage of 200kV. The mode of Brunauer-Emmett-Teller (BET) technique was Nova3000e. And it can detect specific surface area of catalysts. Optical properties of the obtained catalysts were measured by UV–vis diffuse reflectance spectroscopy (DRS) with a wavelength range from 200 to 800 nm. The photoluminescence (PL) spectra were detected on a F4500 (Hitachi, Japan) photoluminescence detector. Electrochemical Properties were tested with an electrochemical system (VersaSTAT3). Transient photocurrent response used

Na₂SO₄ solution (0.5 mol/L) as a supporting electrolyte in the voltage of 0.5 V. Electrochemical impedance spectroscopy (EIS) analysis were measured by using a CHI 760E electrochemical workstation.

3.2 XPS

In order to research the elemental composition and chemical valence of Azo@Ag/Ag₂O-10/CN, Ag/Ag₂O-10/CN, Ag₂O and CN, the XPS surveys are presented in Fig.1S.

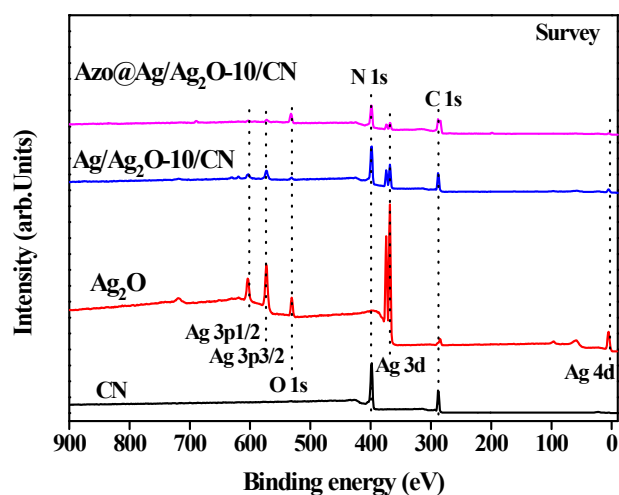


Fig. 1S. XPS survey scan of of Azo@Ag/Ag₂O-10/CN, Ag/Ag₂O-10/CN, Ag₂O and CN photocatalysts.

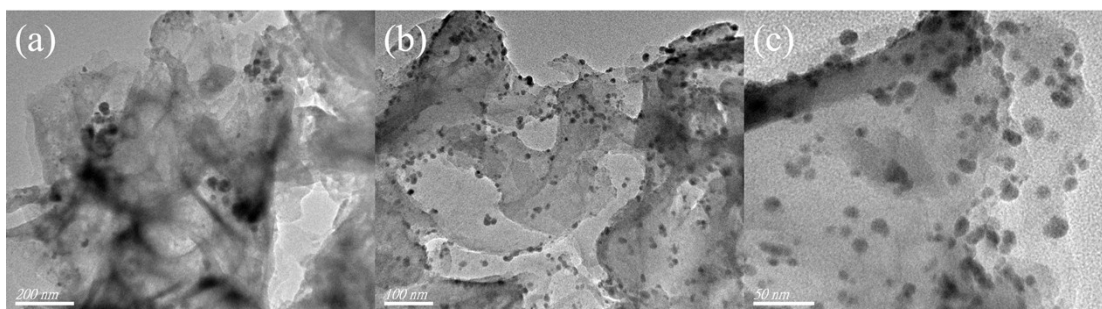


Fig.S2 The different magnifications TEM images of Azo@Ag/Ag₂O/CN

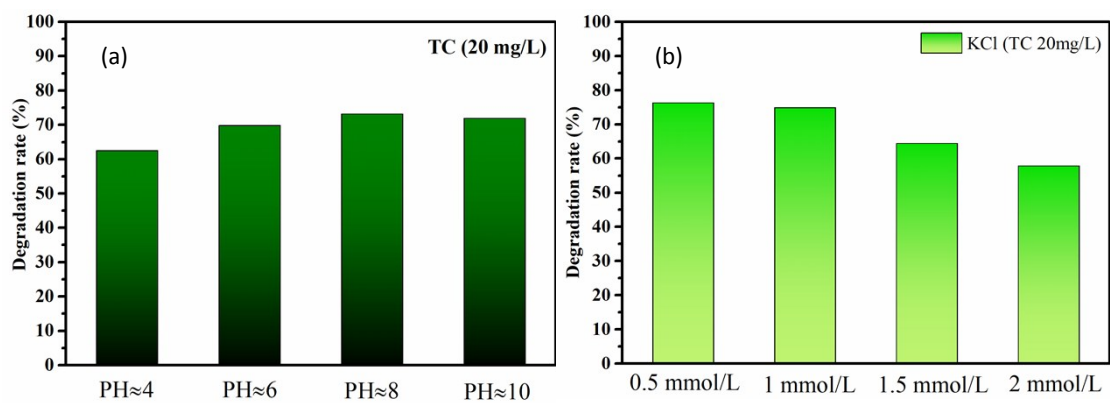


Fig.S3 The degradation effects of pH (a) and ion strength (b)

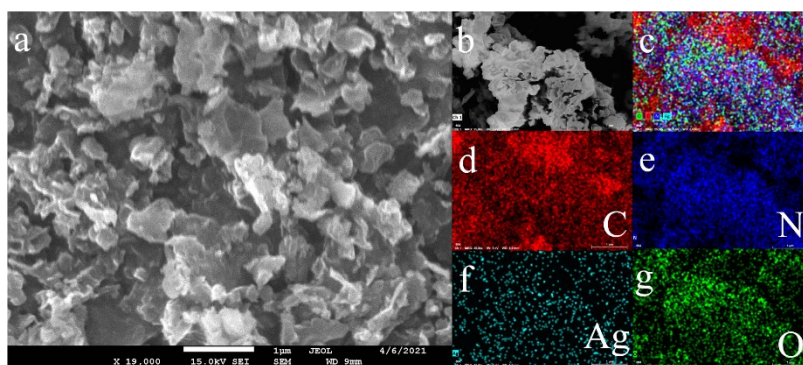


Fig.S4 the SEM-mapping of the samples after reaction