

Electronic Supplementary Information for
Tailoring sulfur doped carbon nitride skeleton with
elevating photocatalytic hydrogen evolution activity

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Chemicals and instruments

Urea, dithizone, triethanolamine (TEOA) and chloroplatinic acid hexahydrate ($\text{H}_2\text{PtCl}_6 \cdot 6\text{H}_2\text{O}$) were obtained in Macklin Reagents Co., Ltd. The crystallization properties and functional groups of CN and x-TACN were recorded via X-ray diffraction (XRD, RIGAKU, D/max-2500) and fourier transform infrared spectroscopy (FTIR, thermoscientific Nicolet 4700), respectively. The structure and morphology were tested by field emission scanning electron microscopy (FESEM, Hitachi regulus 8100) and transmission electron microscopy (TEM, JEM-2100F). X-ray photoelectron spectroscopy (XPS) and UV-vis diffuse reflectance spectrum (UV-vis DRS) were obtained by ESCALAB250XI electronic spectrometer (VG scientific, USA) and Cary 500 spectrometer (Shimadzu UV-2550, Japan), respectively. Photoluminescence (PL), time-resolved PL (TR-PL) spectra, photocurrent response (PCR) and electrochemical impedance spectroscopy (EIS) were characterized by F4500 (Hitachi, Japan) photoluminescence detector, IBH-TemPro (HORIBA JobinYvon, France), CHI760E electrochemical workstation (Shanghai Chenhua Instrument Co., Ltd.) and PGSTAT-302N (metrohm China Ltd.) electrochemical workstation, respectively.