Electronic supporting information

Synthesis of silicate-bridged ZnO/g-C_3N_4 nanocomposites as efficient photocatalysts and mechanism

Chong Liu,[a,b] Chengming Li,[a] Xuedong Fu,[a] Fazal Raziq,[a] Yang Qu,[a] Liqiang Jing[a,]*

[a]Key Laboratory of Functional Inorganic Materials Chemistry (Heilongjiang University), Ministry of Education, School of Chemistry and Materials Science, Harbin 150080, P. R. China.

[b]College of Environmental and Chemical Engineering, Heilongjiang University of Science and Technology, Harbin 150027, P. R. China.

*Corresponding author, E-mail: jinglq@hlju.edu.cn (L. Jing).

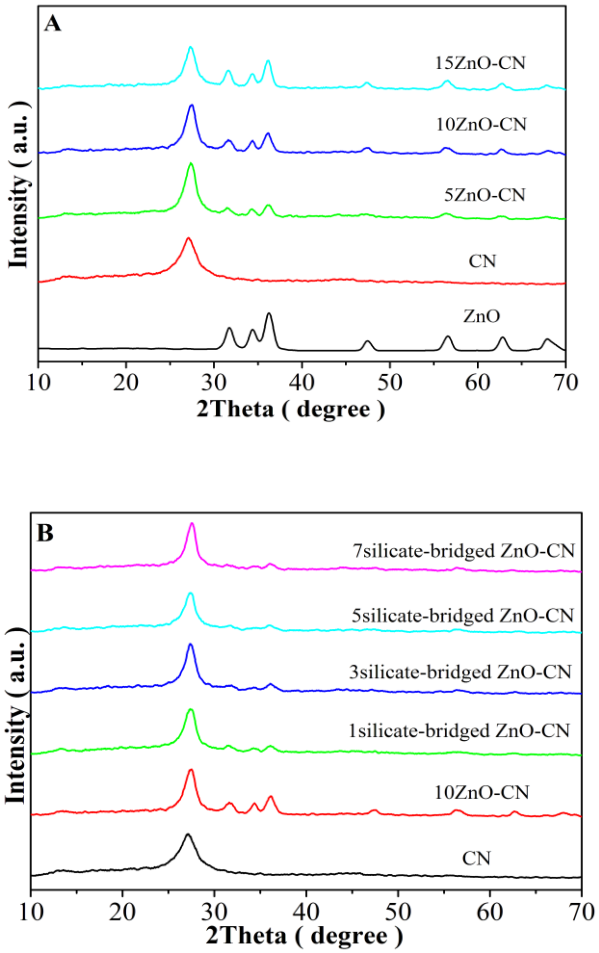


Fig. S1 XRD patterns of XZnO-CN (A) and Ysilicate-bridged ZnO-CN (B).

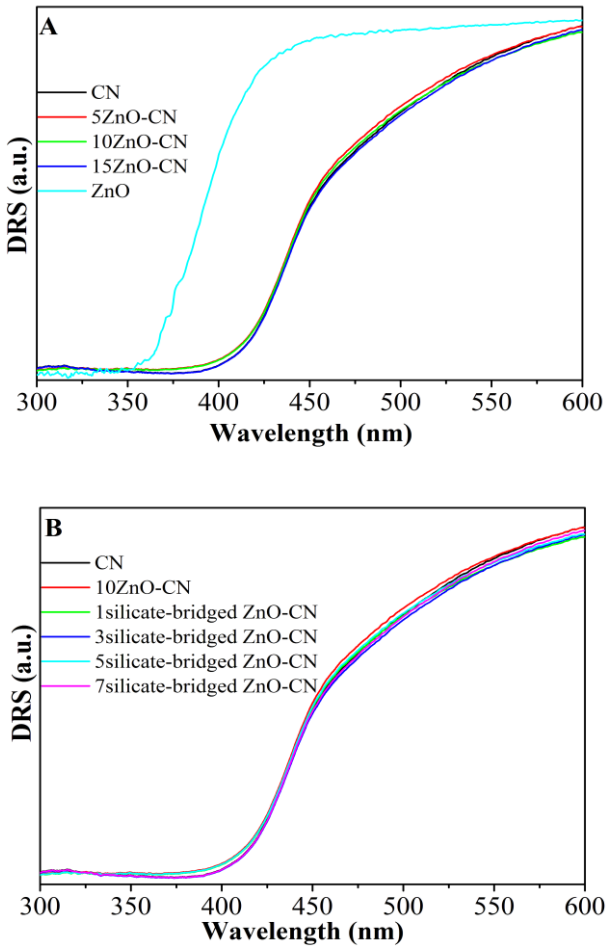
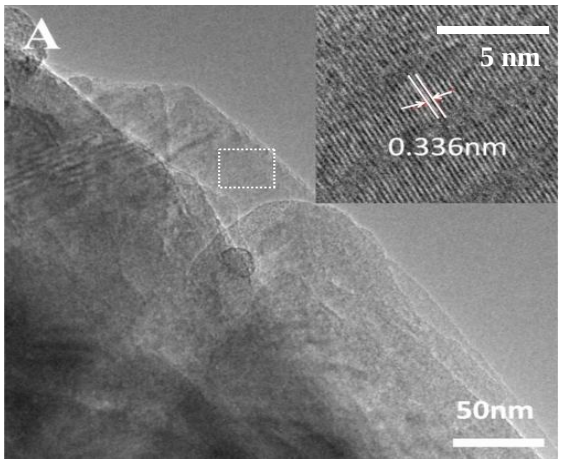
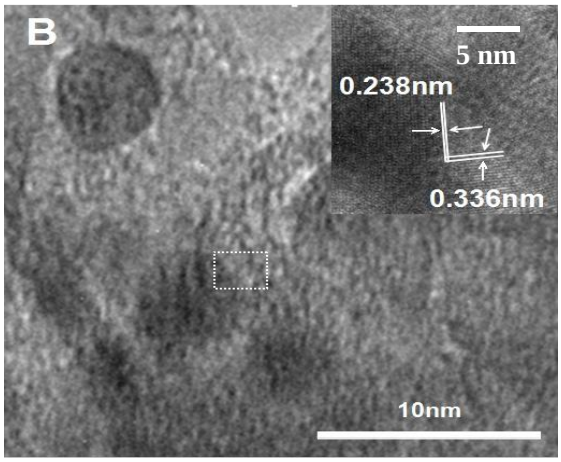
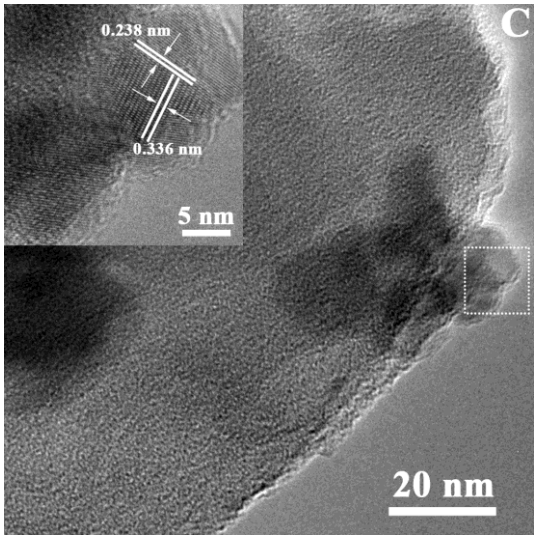


Fig. S2 DRS spectra of XZnO-CN (A) and Ysilicate-bridged ZnO-CN (B).


A
5 nm
0.336nm
50nm


B
5 nm
0.238nm
0.336nm
10nm



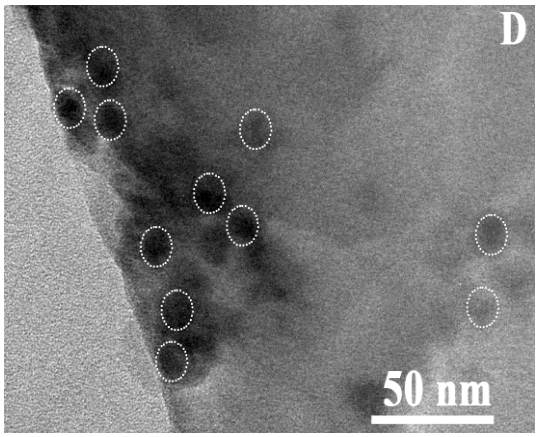


Fig. S3 TEM images of CN (A), 10ZnO-CN (B), 5silicate-bridged ZnO-CN (C) and low resolution TEM image of 5silicate-bridged ZnO-CN (D). (Inset indicates HRTEM images of CN, 10ZnO-CN and 5silicate-bridged ZnO-CN).

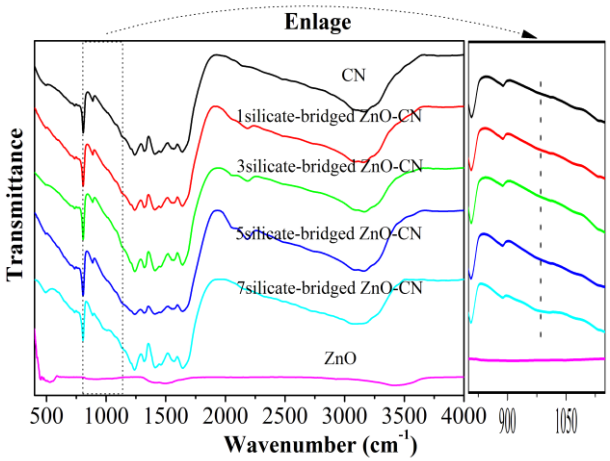


Fig. S4 FTIR spectra of ZnO, 10ZnO-CN and Ysilicate-bridged ZnO-CN and the inset is the localized amplification of the wavenumber of 800-1150.

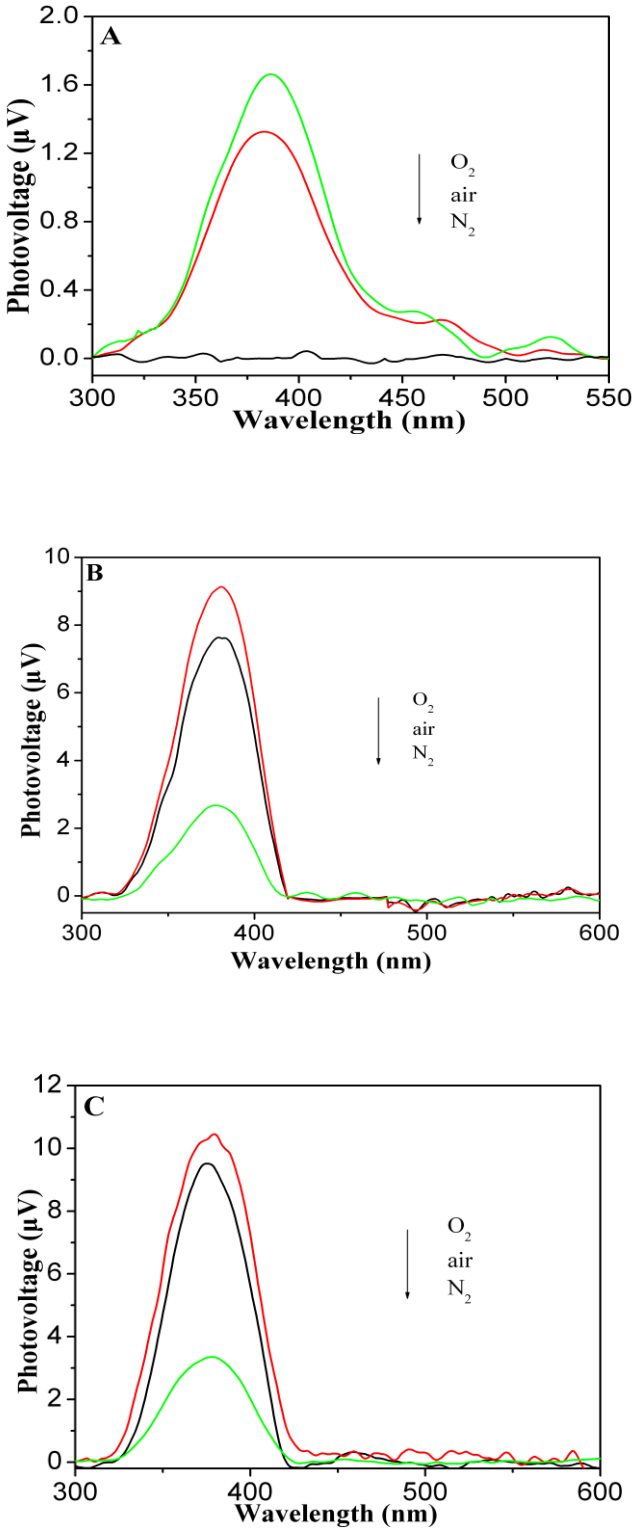


Fig. S5 SS-SPS responses of CN (A), 10ZnO-CN (B) and 5silicate-bridged ZnO-CN in different atmospheres.

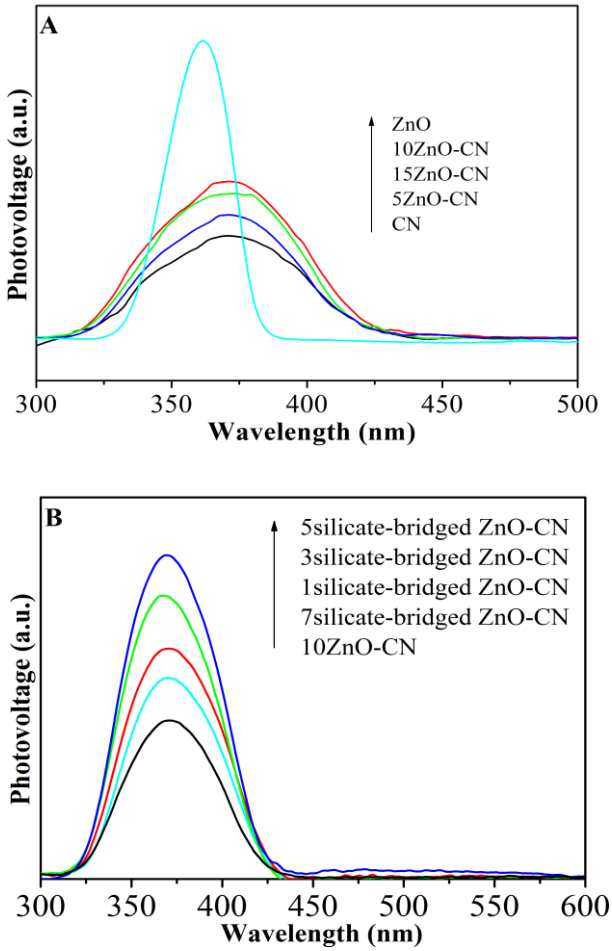


Fig. S6 SS-SPS responses of XZnO-CN (A) and Ysilicate-bridged ZnO-CN (B) in air.

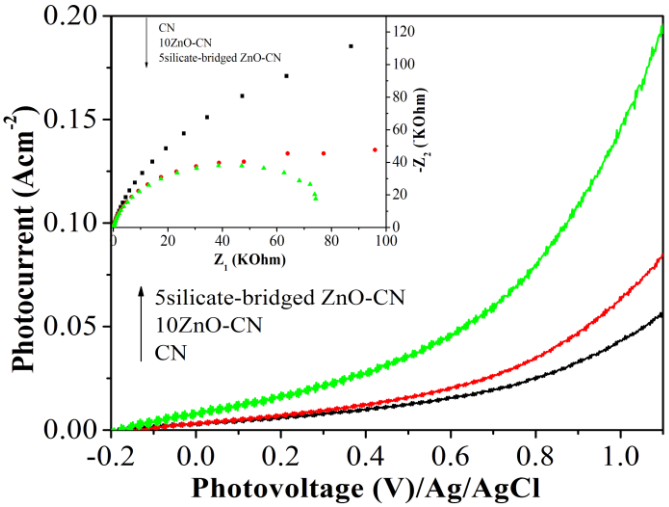


Fig.S7 I–V curves and the inset is the electrochemical impedance spectra (EIS) under irradiation.

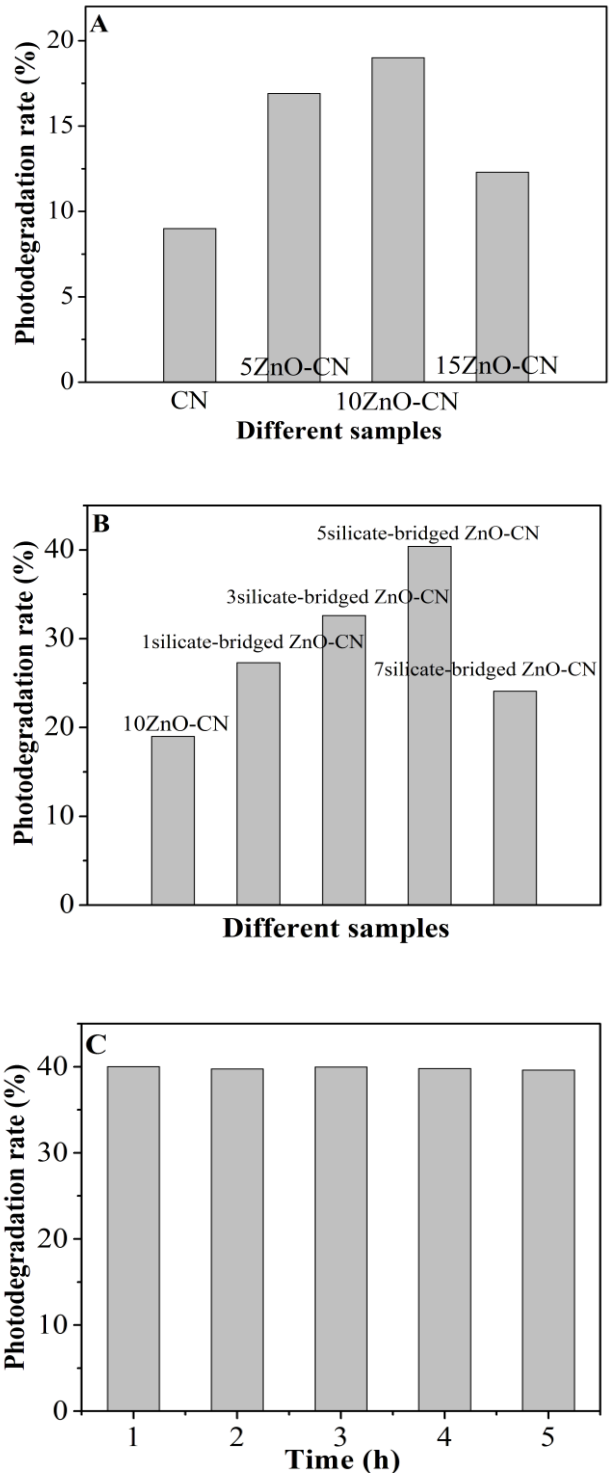


Fig. S8 Photocatalytic degradation rates of phenol of XZnO-CN (A), Ysilicate-bridged ZnO-CN (B) and the repeated processes of 5silicate-bridged ZnO-CN for photodegradation of phenol(C).