Supporting Information for:

## Lignin-assisted solid-phase synthesis of nano-CuO for photocatalyst with excellent catalytic activity and high performance supercapacitor electrodes

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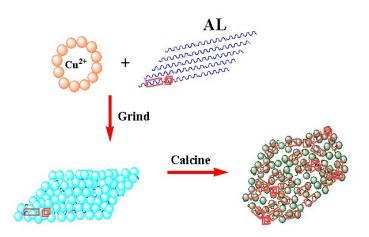


Fig. S1 The formation mechanism of CA sample

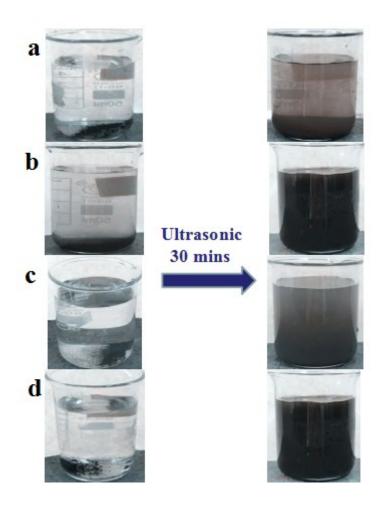


Fig. S2 the dispersion case of (a) CuO, (b) C-500, (c) CA0.5 and (d) CA0.5-500

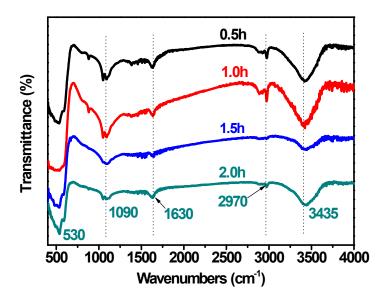


Fig. S3 FTIR spectra of the CA0.5-500 samples at different calcination time

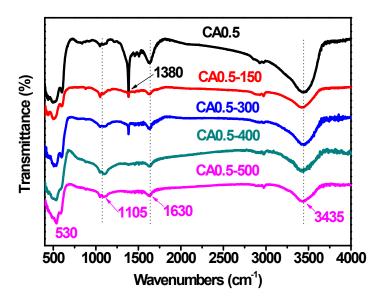


Fig. S4 FTIR spectra of the CA0.5 samples at different calcination temperature