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Supporting Information

The preparation of a recyclable catalyst of silver nanoparticles dispersed in mesoporous silica nanofiber matrix

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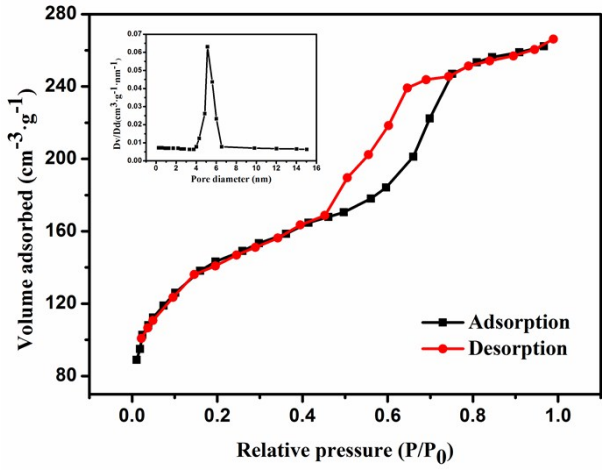


Fig. S1 Nitrogen adsorption-desorption isotherm (inset: pore size distribution from adsorption curve) of mesoporous silica fiber

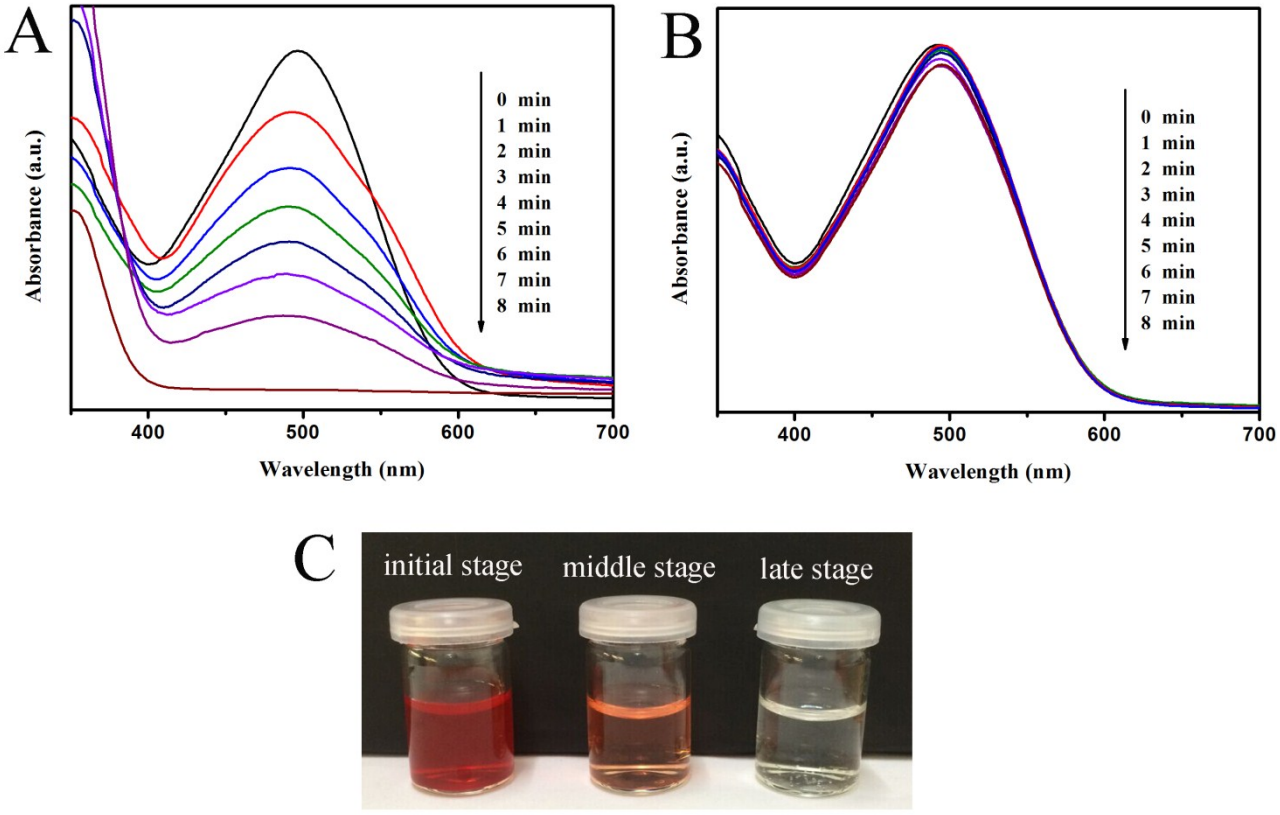
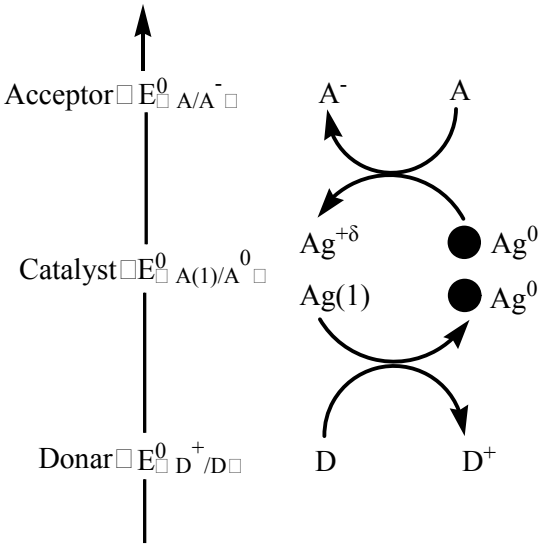
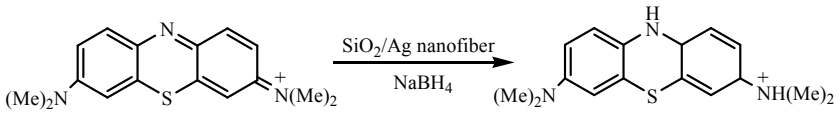


Fig. S2 the successive UV–Vis spectra for the catalytic reduction of Congo red (CR) using AgNPs/Silica as the catalyst and $NaBH_4$ as the reducing agent (A), and using bare silica fiber the catalyst and $NaBH_4$ as the reducing agent (B). The digital photo of the decoloration of CR at different stages (C).



Scheme S1. The mechanism of catalytic electron transfer where the metal cluster relays the electron from the donor to the acceptor. A = dye in the oxidised form; A^- = dye in the reduced form. D^+ = donor in the oxidised form; D = donor in the reduced form. E^0 is the redox potential.



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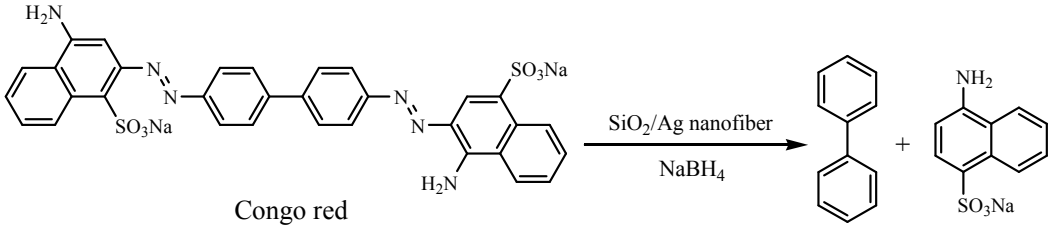

Congo red

Scheme S2. Mechanism of the catalytic reduction and degradation of dyes with AgNPs/silica nanofiber at room temperature.