Supporting Information

Polyoxometalate-based Supramolecular Gel

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S1 Materials and Measurements

All chemicals were purchased from Sinopharm Chemical Reagent Co. Ltd. (SCRC). All of them were of analytical reagent grade and used as received without any further purification. The morphologies of the assemblies were characterized by Hitachi H-7650 and FEI Tecnai G2 F20 S-Twin Transmission electron microscopes (TEM), whereas TEM samples were prepared on carbon coated copper grid. Scanning electron microscopy (SEM) characterizations were performed on FEI Sirion 200 scanning electron microscope by depositing samples on a silicon wafer. And the 1HNMR spectrum was got from JEOL ECA-600 NMR spectrometer. Thermo-gravimetric analysis (TGA) was carried out in nitrogen atmosphere by a scanning rate of 10 oC min-1 by TA instruments TGA 2050. The small angle X-ray diffraction were characterized by Rigaku D/max-2500/PC X-ray diffractometer using CuKα radiation (λ=1.5418 Å). The samples were irradiated by PLS-SXE 300/300UV xenon lamp. The transmittance spectra were characterized by Shimadzu UV-3600 UV/Vis/NIR spectrophotometer. The Young's modulus was characterized by Instron 3356.

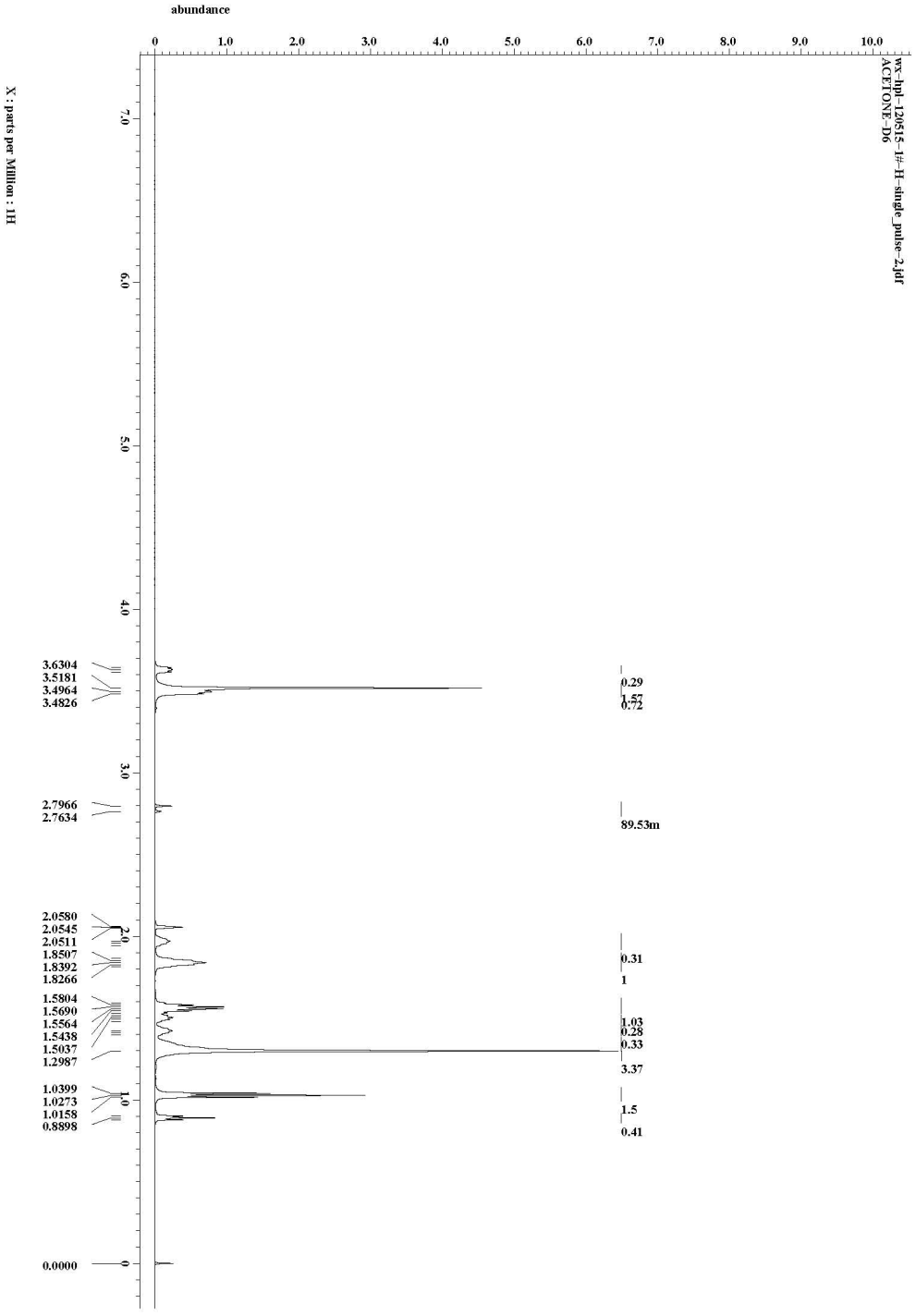

Fig. S1 ^{1}H NMR spectra of the pure SEPs in acetone-D6.

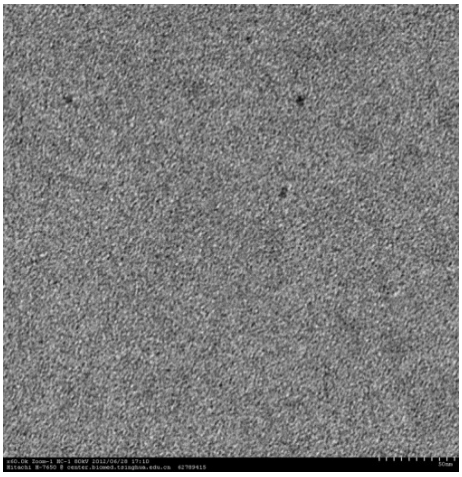

Fig. S2 TEM image of SEPs which was dispersed in butanone.

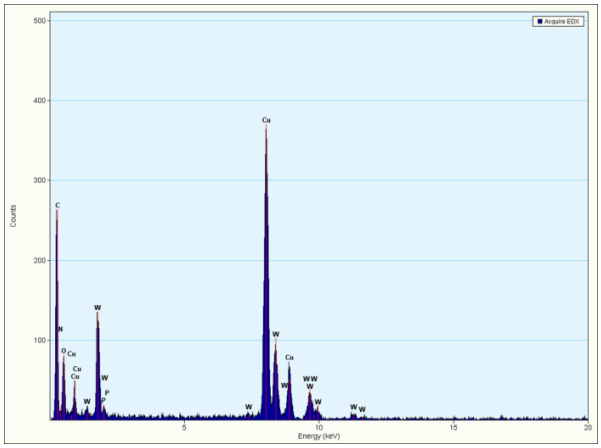

Fig.S3 Energy dispersive X-ray spectroscopy measurements of nanowires.

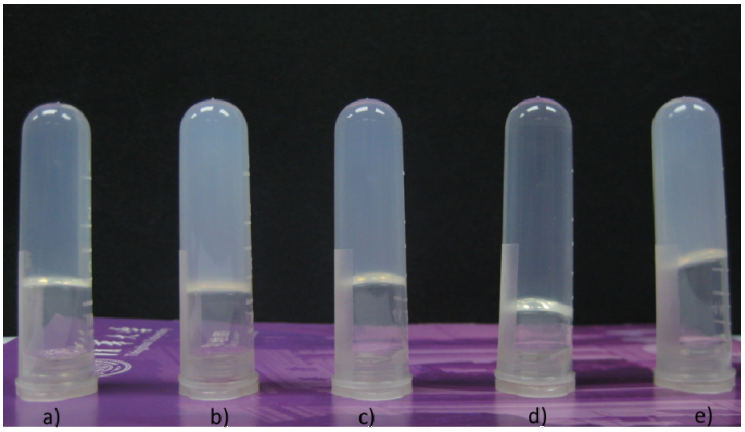

Fig. S4 The photo of other gels when self-assembly happened in butanone and other esters, such as a) ethyl acetate, b) methyl acetate, c) methyl acrylate, d) methyl methacrylate, e) vinyl acetate.

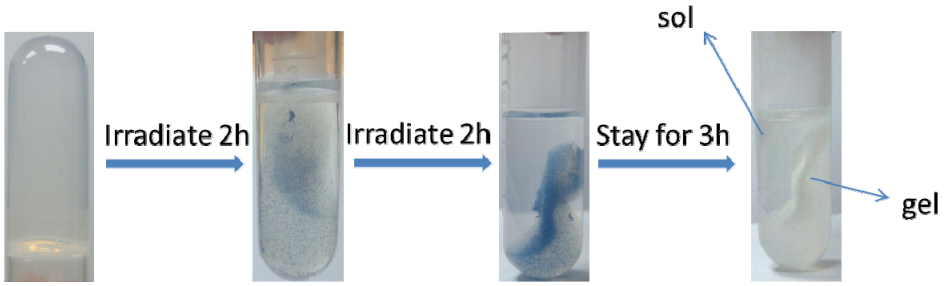

Fig. S5 Photochromic behavior of the gel.

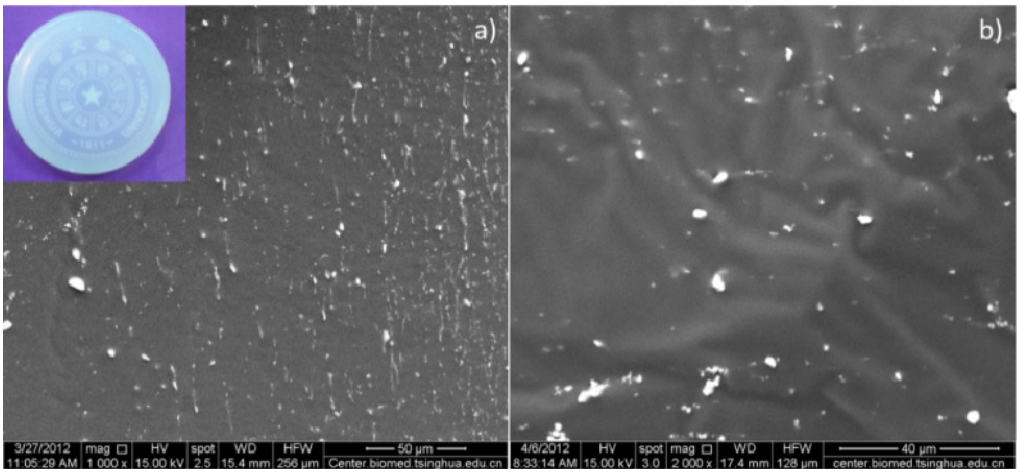

Fig. S6 a) SEM image of the cross section of the hybrid polymer. The inset shows photo of the hybrid polymer. b) Magnified SEM images of the cross section.

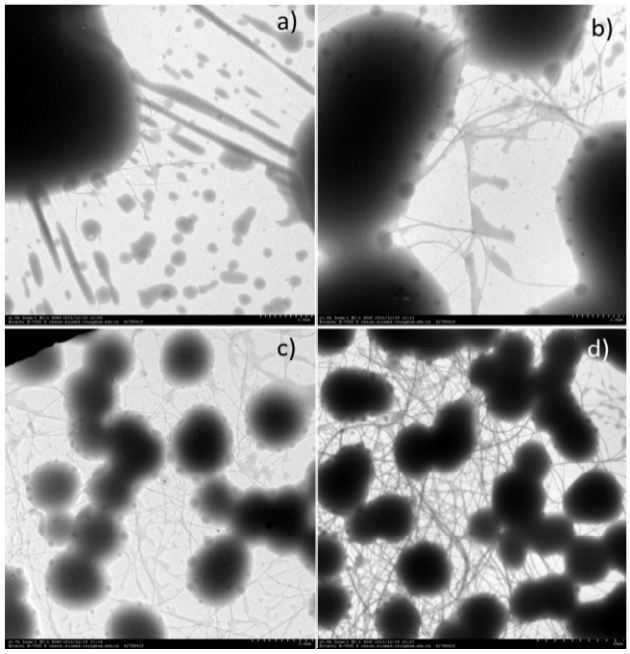

Fig. S7 TEM images of samples which got in the gelation process at different times: a) 20s, b) 40s, c) 60s, d) 2min.