

Supporting Information

Curved 2D WS₂ Nanostructures: Nanocasting and Silent Phonon Mode

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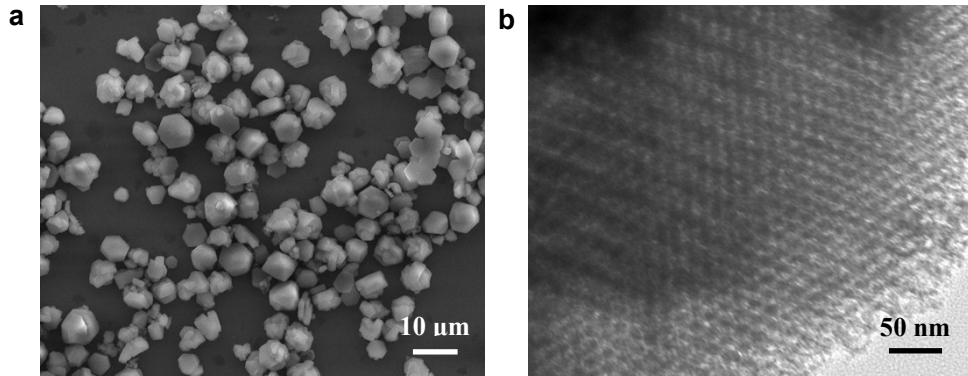


Figure S1. (a) SEM and (b) TEM image of the EP-FDU-12 mesoporous silica template.

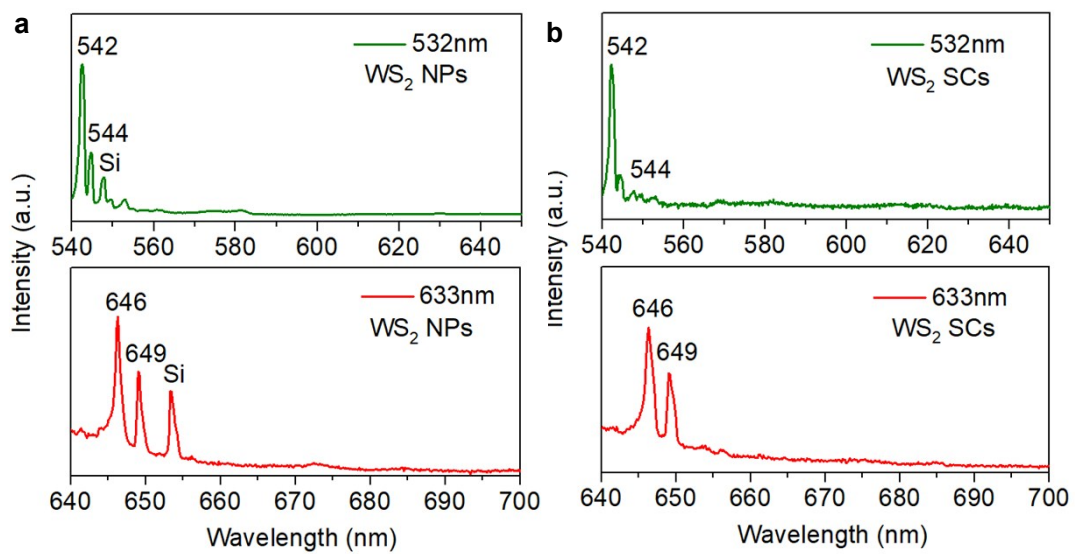


Figure S2. Photoluminescence spectra of (a) WS_2 NPs and (b) WS_2 SCs under the excitation of 532 (upper) and 633 nm (lower) lasers. The peaks at 542 and 544 nm under the excitation of 532 nm lasers and 646 and 649 nm under the excitation of 633 nm lasers are WS_2 Raman peaks.

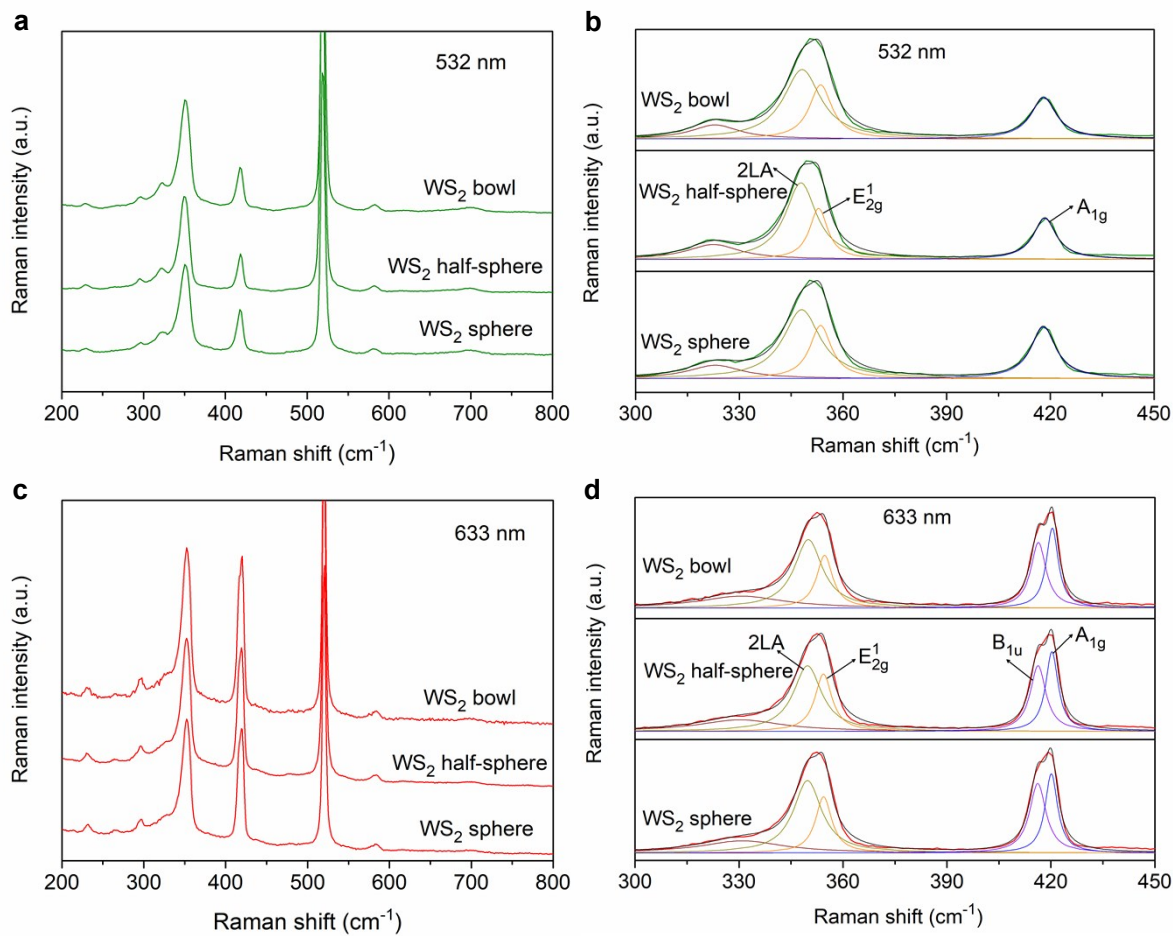


Figure S3. Raman spectra of WS₂ bowl, WS₂ half-sphere, WS₂ sphere excited by (a)-(b) 532 and (c)-(d) 633 nm laser. (b) and (d) are the Raman spectra at the zoom-in frequency range with detailed fitting curves using Lorentzian function.

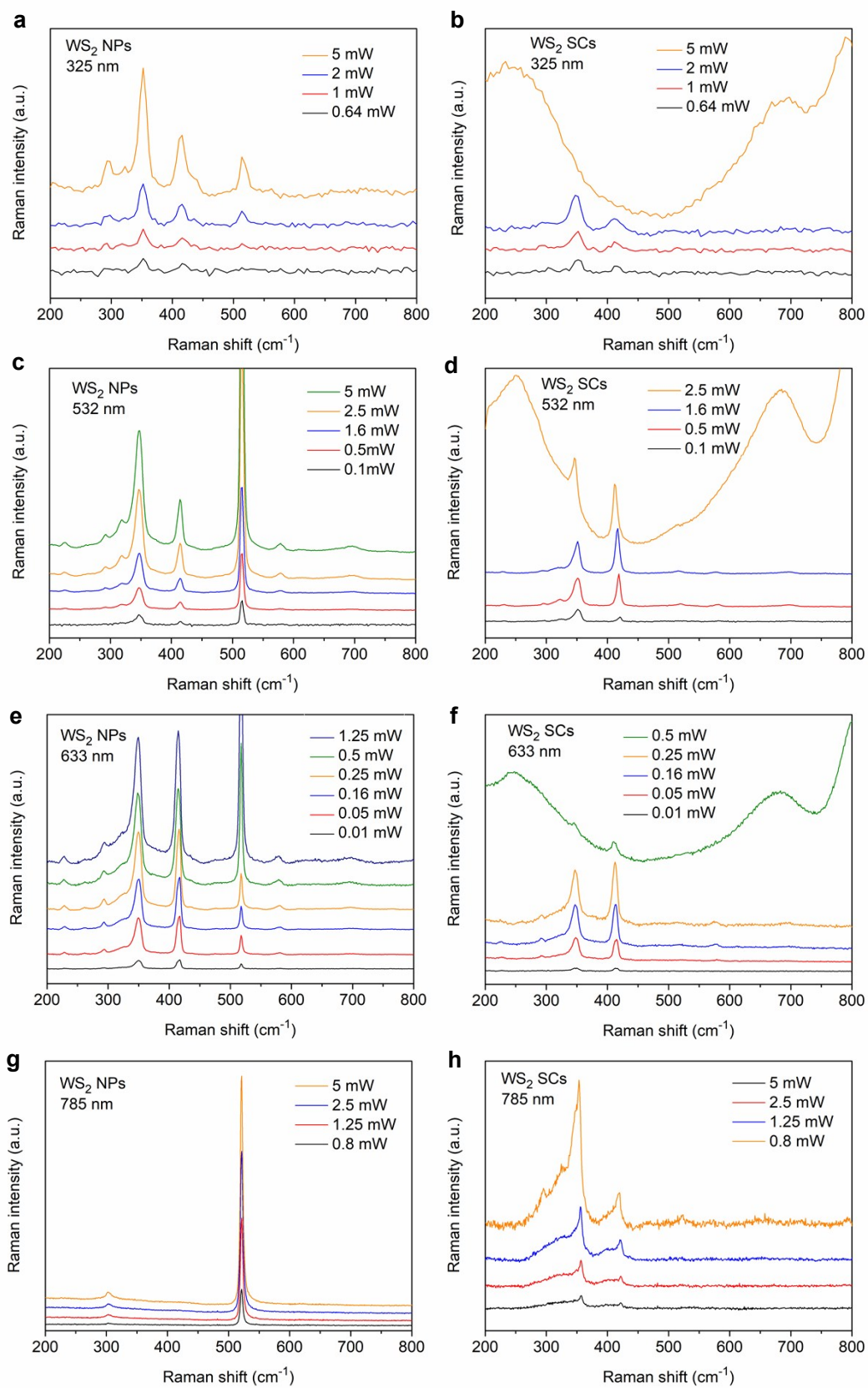


Figure S4. Raman spectra of WS₂ NPs and WS₂ SCs excited by (a)-(b) 325 nm laser, (c)-(d) 532 nm laser, (e)-(f) 633 nm laser, and (g)-(h) 785 nm laser using different laser powers.

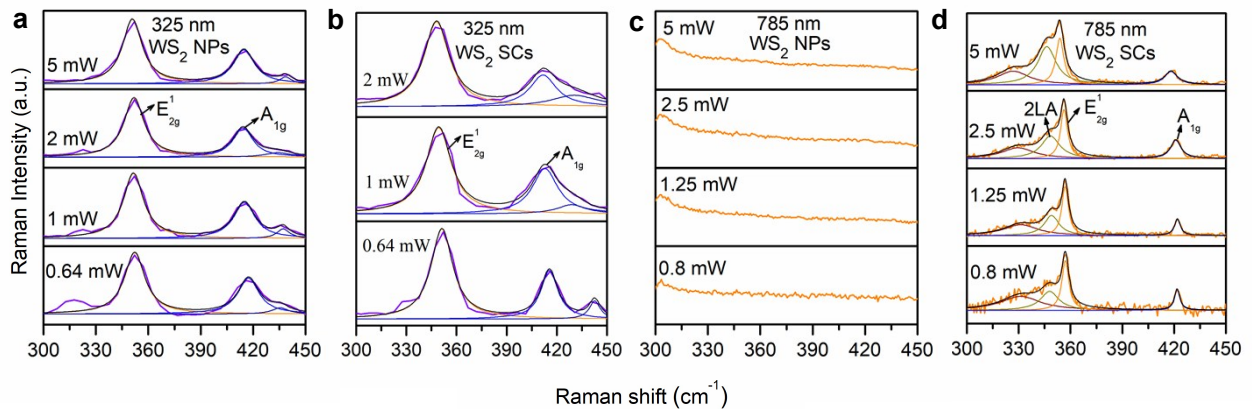


Figure S5. Raman spectra of WS₂ NPs and WS₂ SCs excited by (a)-(b) 325 nm laser and (c)-(d) 785 nm laser using different laser powers. Detailed features of the Raman peaks are fitted using the Lorentzian function.

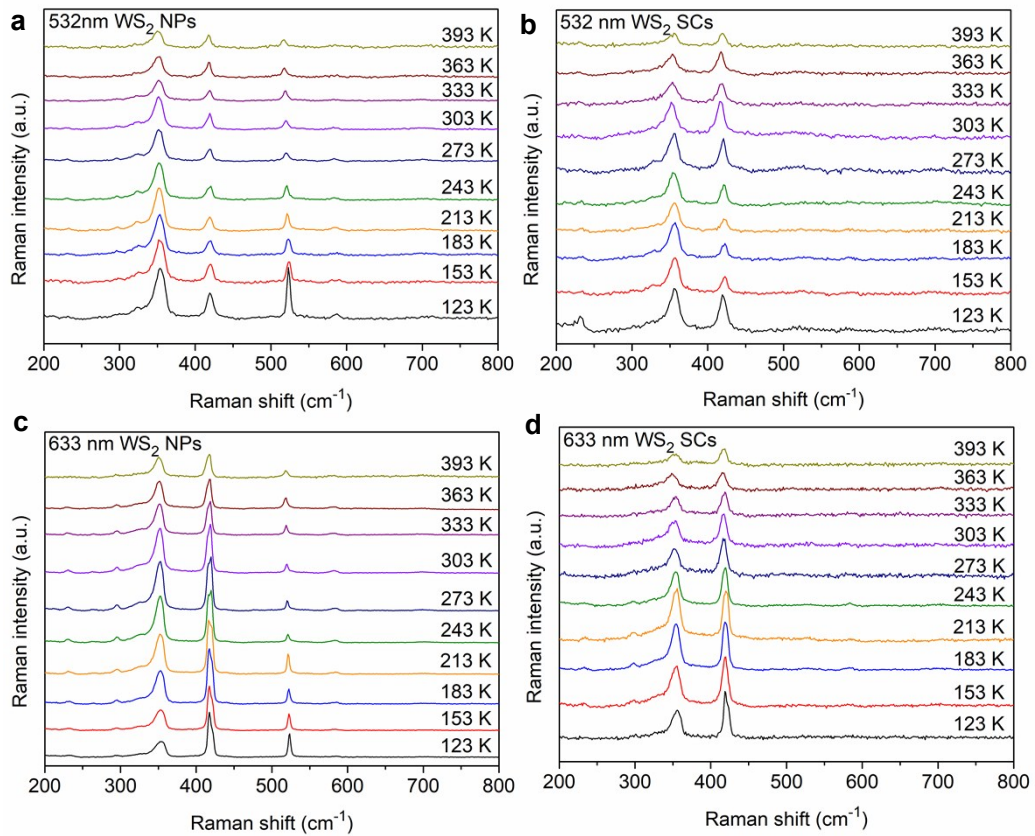


Figure S6. Dependence of Raman spectra of WS₂ NPs and WS₂ SCs excited by (a)-(b) 532 nm laser and (c)-(d) 633 nm laser on the temperature.

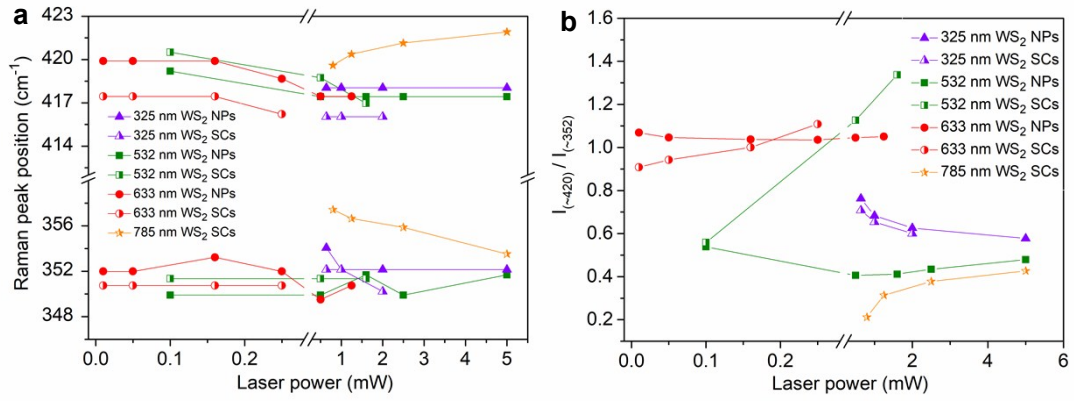


Figure S7. (a) Peak position and (b) intensity ratio of the two prominent Raman peaks of WS₂ SCs and WS₂ NPs under the excitation of 325, 532, 633 and 785 nm lasers.

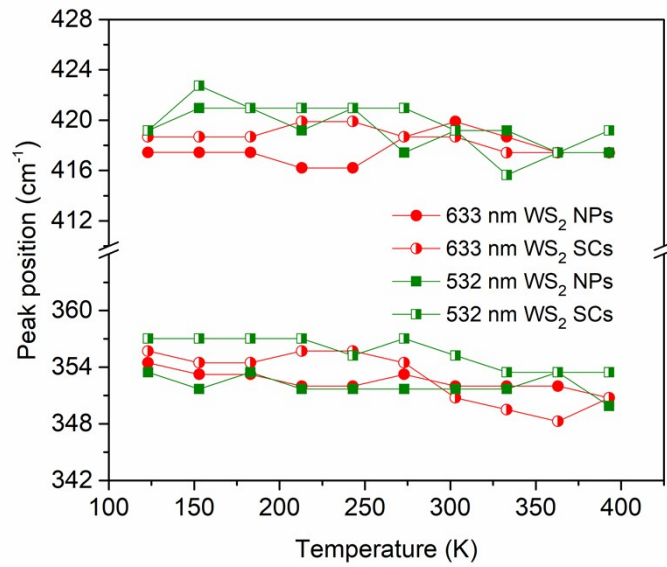


Figure S8. Dependence of the Raman peak position of the two prominent Raman peaks of WS₂ SCs and WS₂ NPs on the temperature under the excitation of 532 and 633 nm lasers. Here peak position of those combined modes (containing two peaks) are just plot for reference.