Supplementary Information

Synergistic Regulation of Key Process Parameters on the Structure and Electrochromic Performance of Sol-Gel Derived WO_3 Films: Amorphous Superiority at 100 °C

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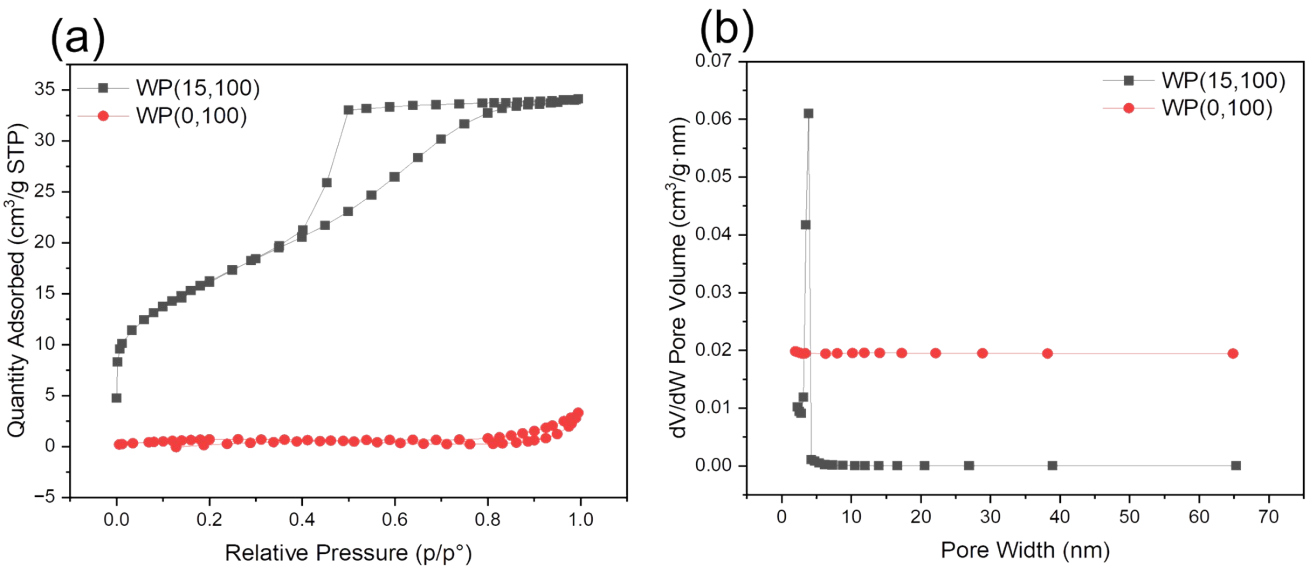


Figure S1. (a) N_2 adsorption–desorption isotherms and (b) pore size distributions of PTA-derived powder samples of WP(0,100) and WP(15,100).

Preparation of WP(0,100) and WP(15,100) powder samples for N_2 adsorption–desorption isotherms testing: 15 g of tungstic acid was dissolved in 100 mL of 30% hydrogen peroxide solution and stirred for 96 h.10 mL of the resulting supernatant was dried at 100°C in an oven to form a powder, denoted as WP(0,100).10 mL of the PTA solution was stirred at 80°C for 15 h in a water bath, followed by drying at 100°C in an oven to obtain the powder designated as WP(15,100). Both samples were first degassed at 120°C under vacuum for 6–10 h in a degassing station to remove surface-adsorbed water and impurities. Nitrogen physisorption measurements were then performed at liquid-nitrogen temperature (−196°C) to characterize the samples' textural properties.

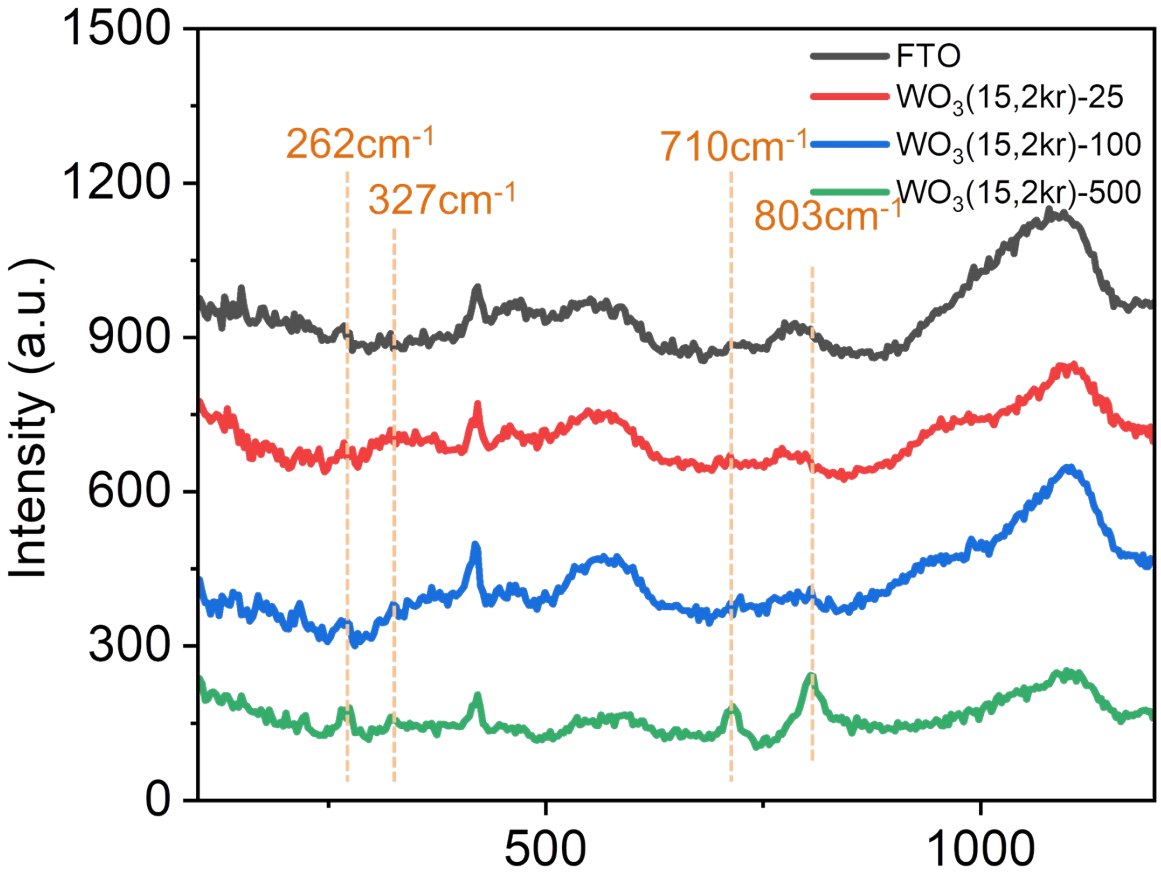
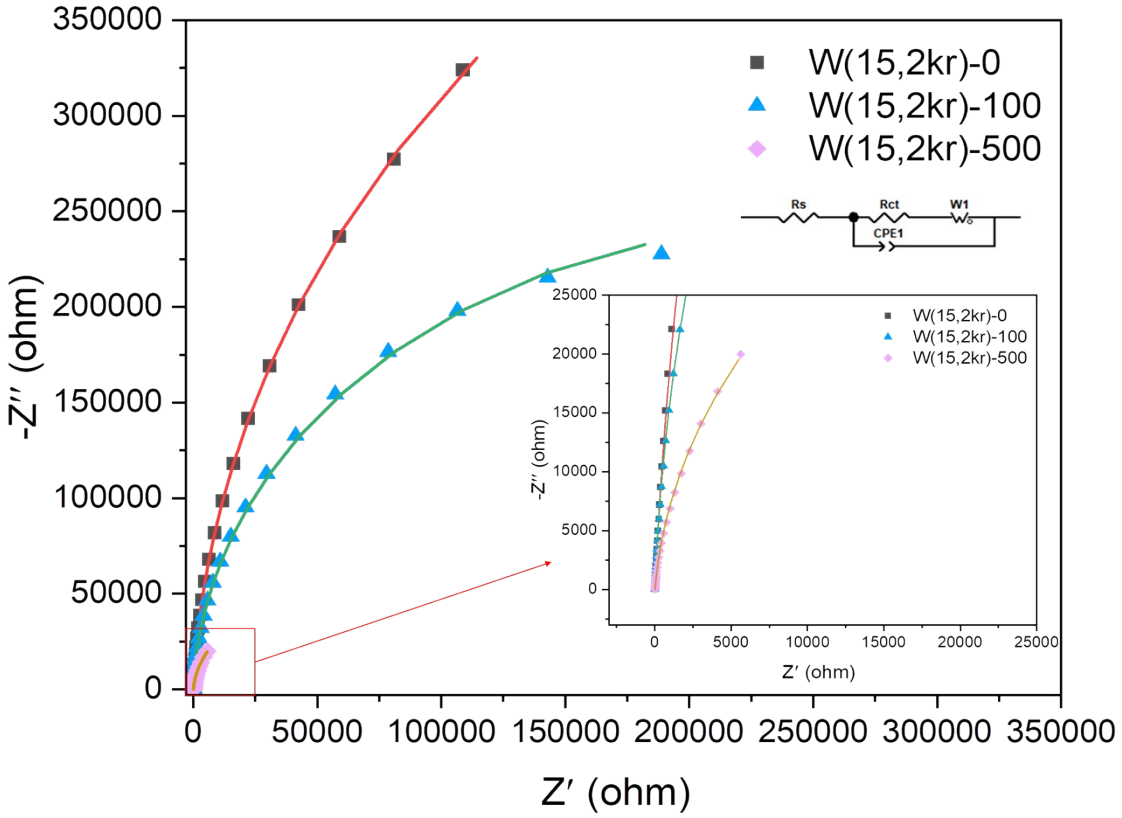


Figure S2. Raman spectra of WO_3 thin films annealed at different temperatures.



Samples	R_s (ohm)	R_{ct} (ohm)
WO_3(15,2kr)-25	9.794	1193100
WO_3(15,2kr)-100	10.76	498240
WO_3(15,2kr)-500	19.5	43381

Figure S3. EIS curves and corresponding parameters of WO_3(15,2kr)-25, WO_3(15,2kr)-100, and WO_3(15,2kr)-500 films.