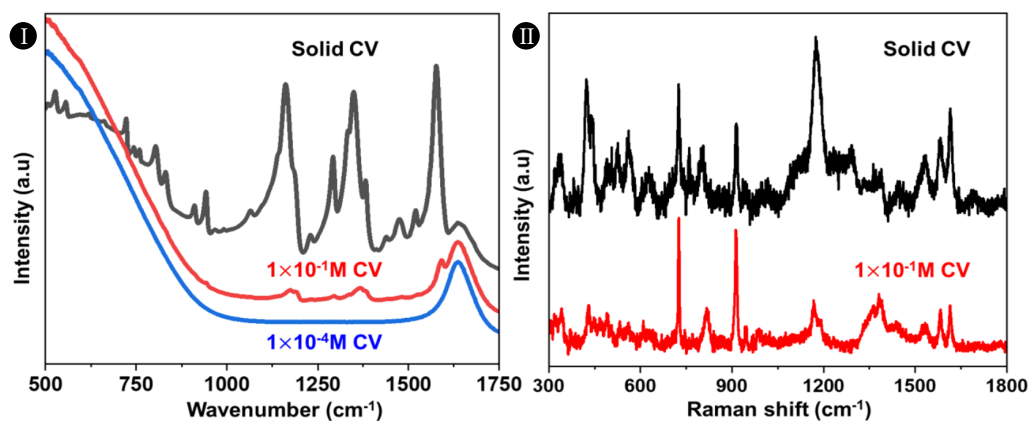
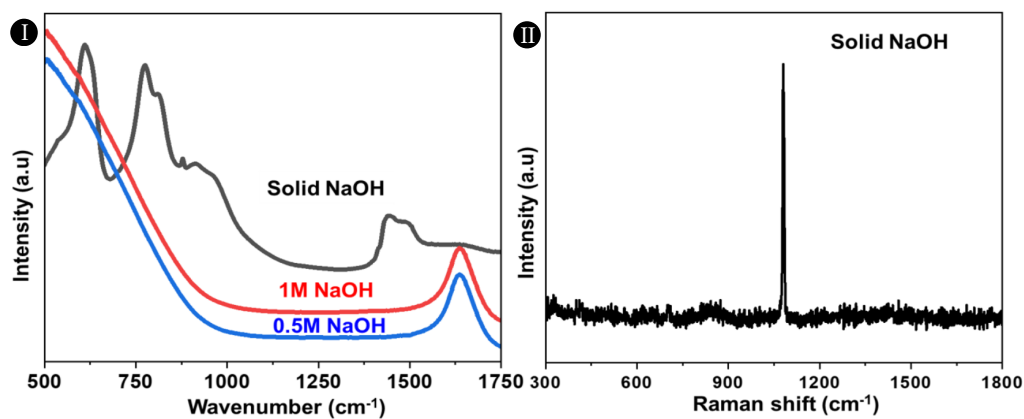




## Supplementary Materials



**Fig. S1.** (I) FTIR spectra of solid-paste Crystal Violet: Wavenumber region (cm<sup>-1</sup>) = 500~1750 cm<sup>-1</sup>, and (II) Raman spectrum of 0.1 M Crystal Violet: Raman shift region ( $\Delta\nu$ ) = 200~1800 cm<sup>-1</sup>.



**Fig. S2.** (I) FTIR spectra of solid, 1 M, and 0.5 M NaOH: Wavenumber region (cm<sup>-1</sup>) = 500~1750 cm<sup>-1</sup>, and (II) Raman spectrum of solid NaOH: Raman shift region ( $\Delta\nu$ ) = 300~1800 cm<sup>-1</sup>.