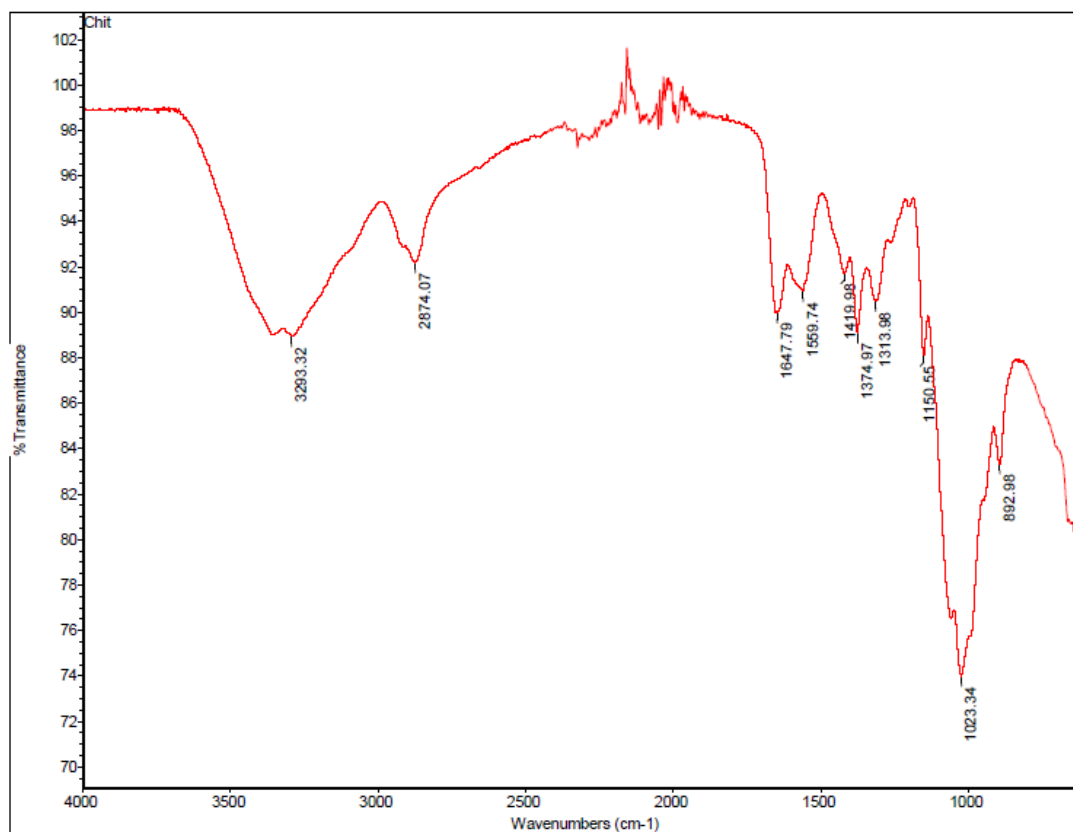


## Supplementary Materials

**Figure S1-S9.** FTIR spectra of samples CS, 1,2-NQ, 1,2-NQ-CS (A-C methods), 1,4-NQ and 1,4-NQ-CS (A-C methods).

**Figure S10-S18.**  $^{13}\text{C}$  NMR solid state spectra of CS, 1,2-NQ, 1,2-NQ-CS (A-C methods), 1,4-NQ and 1,4-NQ-CS (A-C methods).



**Figure S1.** FTIR spectra of pure chitosan.

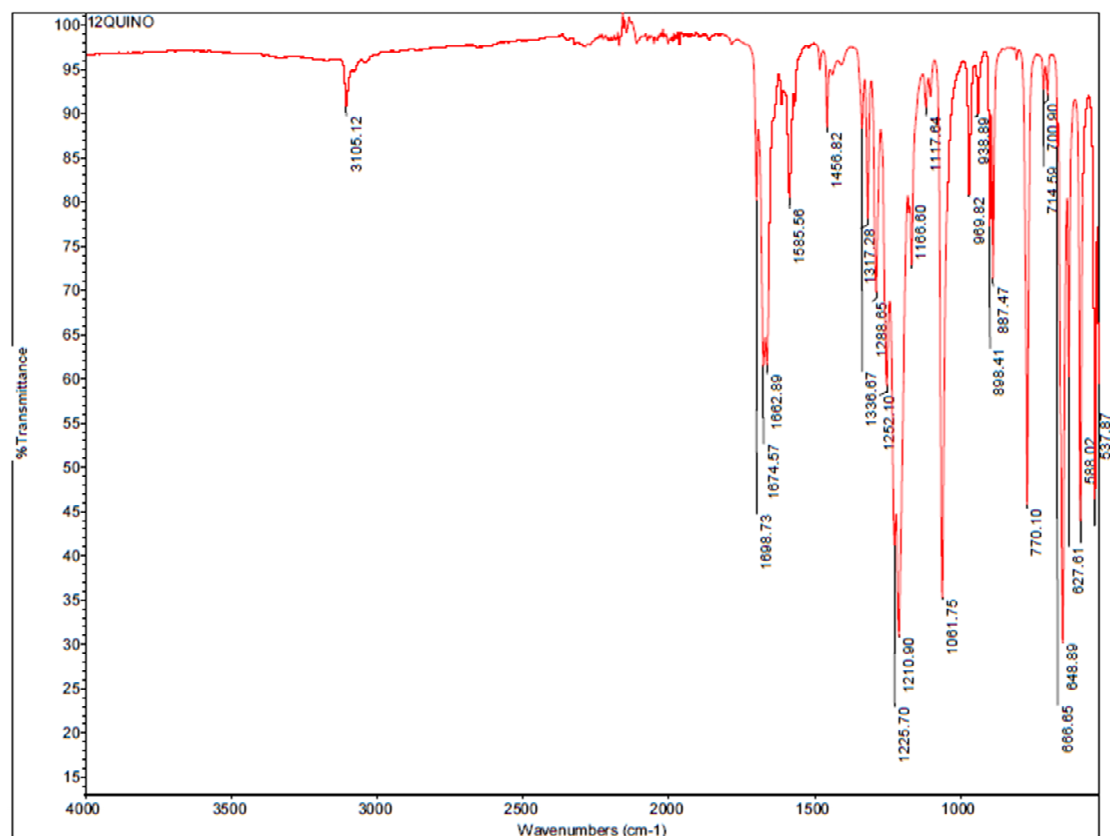


Figure S2. FTIR spectra of pure 1,2-NQ.

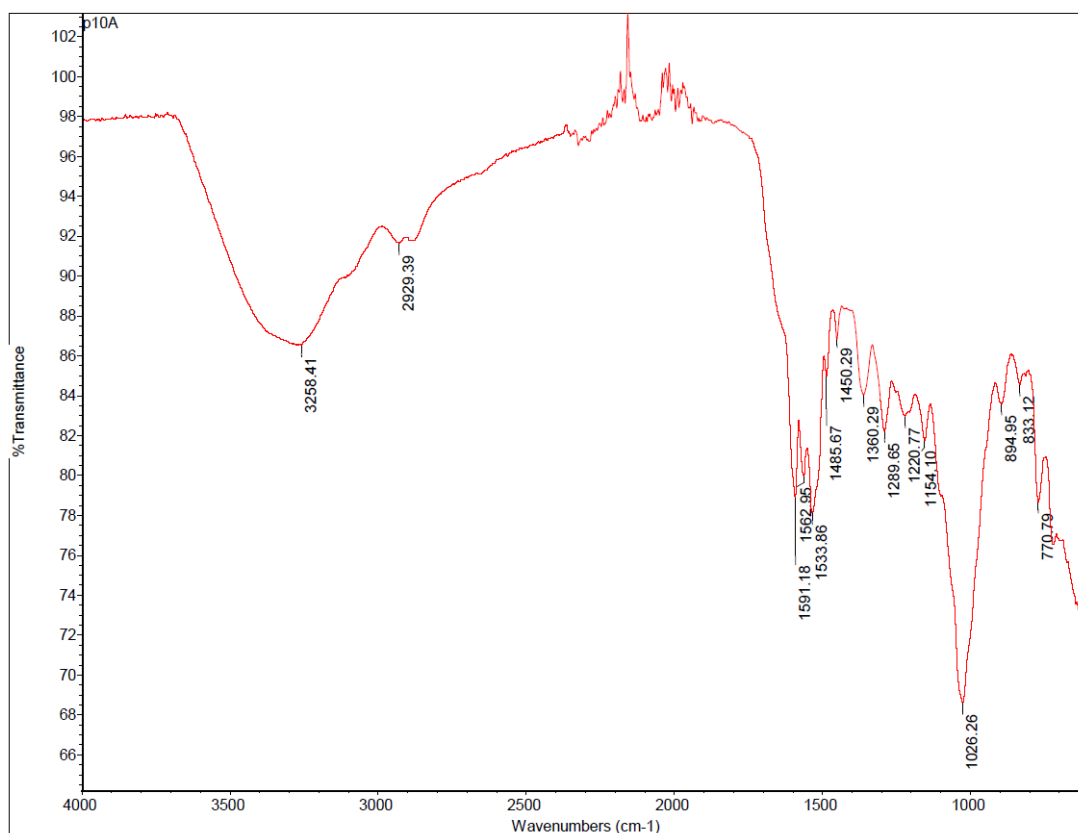


Figure S3. FTIR spectra of 1,2-NQ-CS obtained by method a.

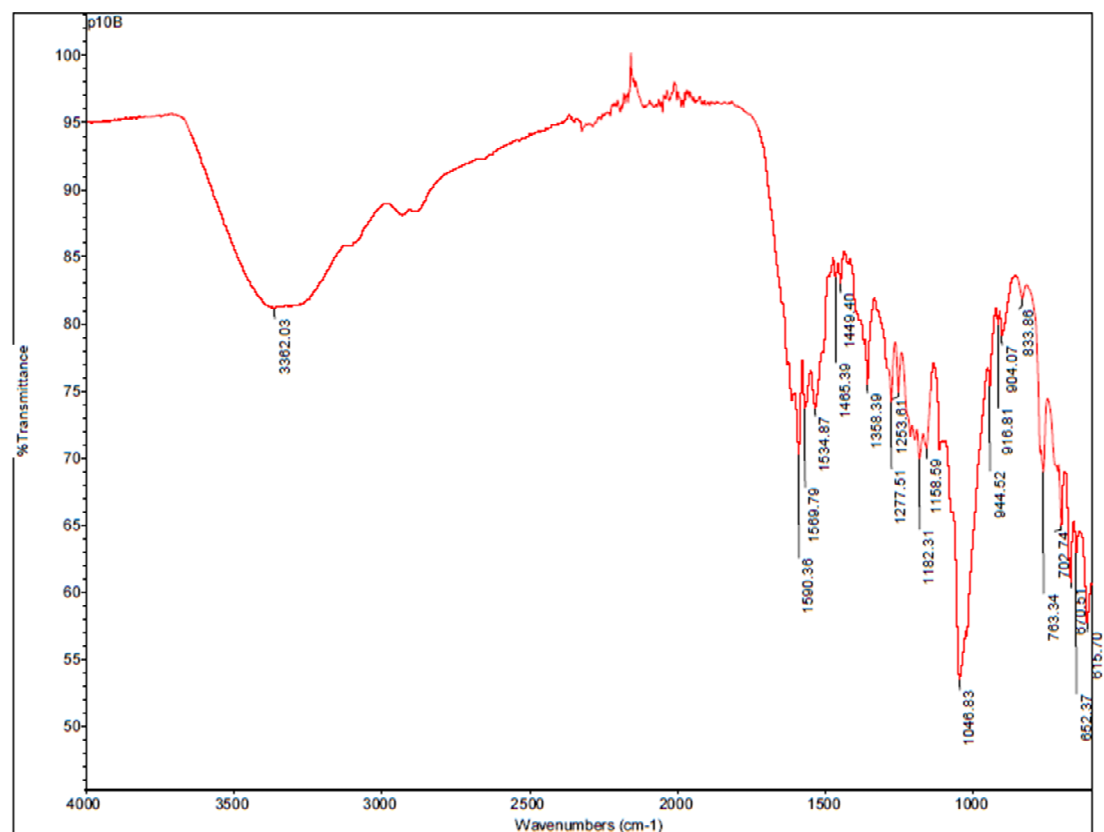


Figure S4. FTIR spectra of 1,2-NQ-CS obtained by method b.

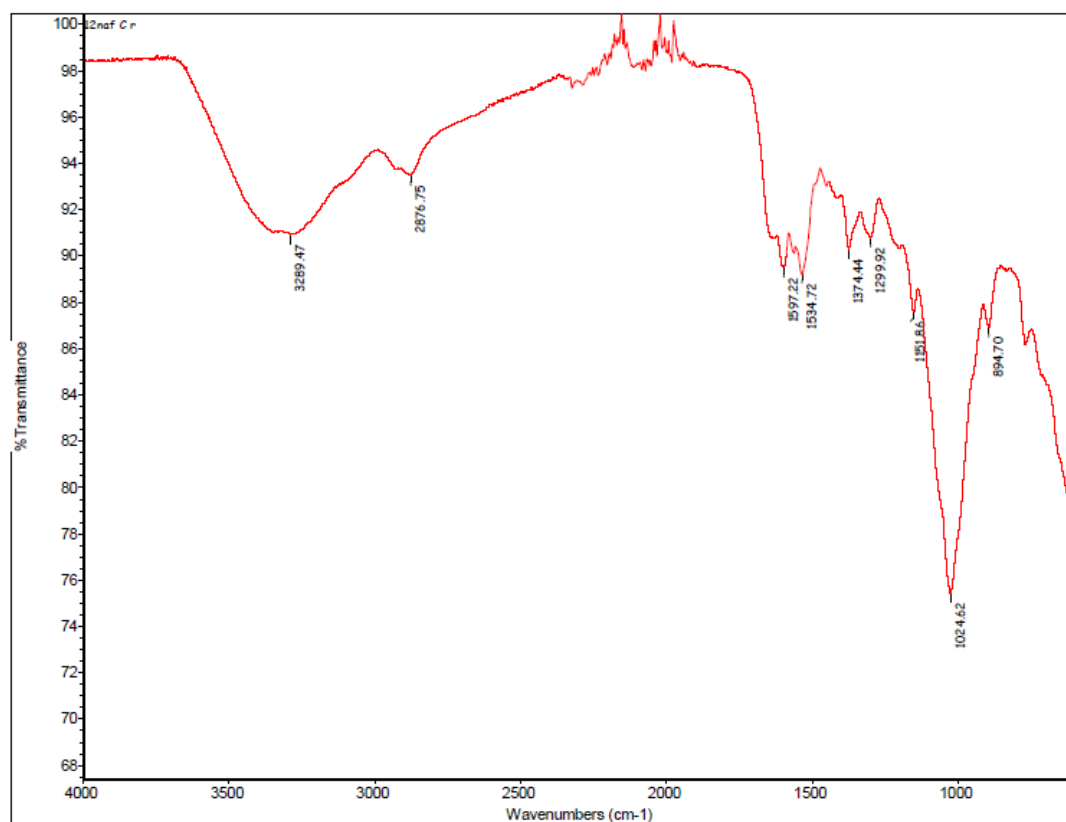


Figure S5. FTIR spectra of 1,2-NQ-CS obtained by method c.

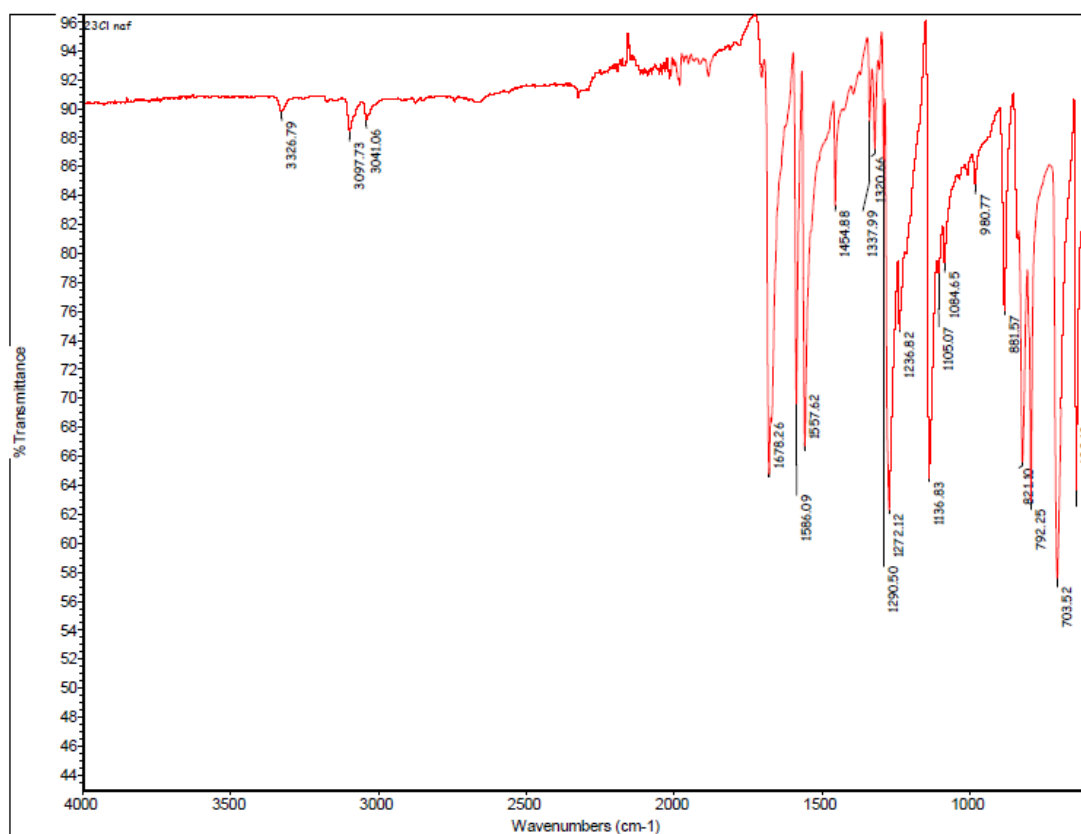


Figure S6. FTIR spectra of pure 1,4-NQ.

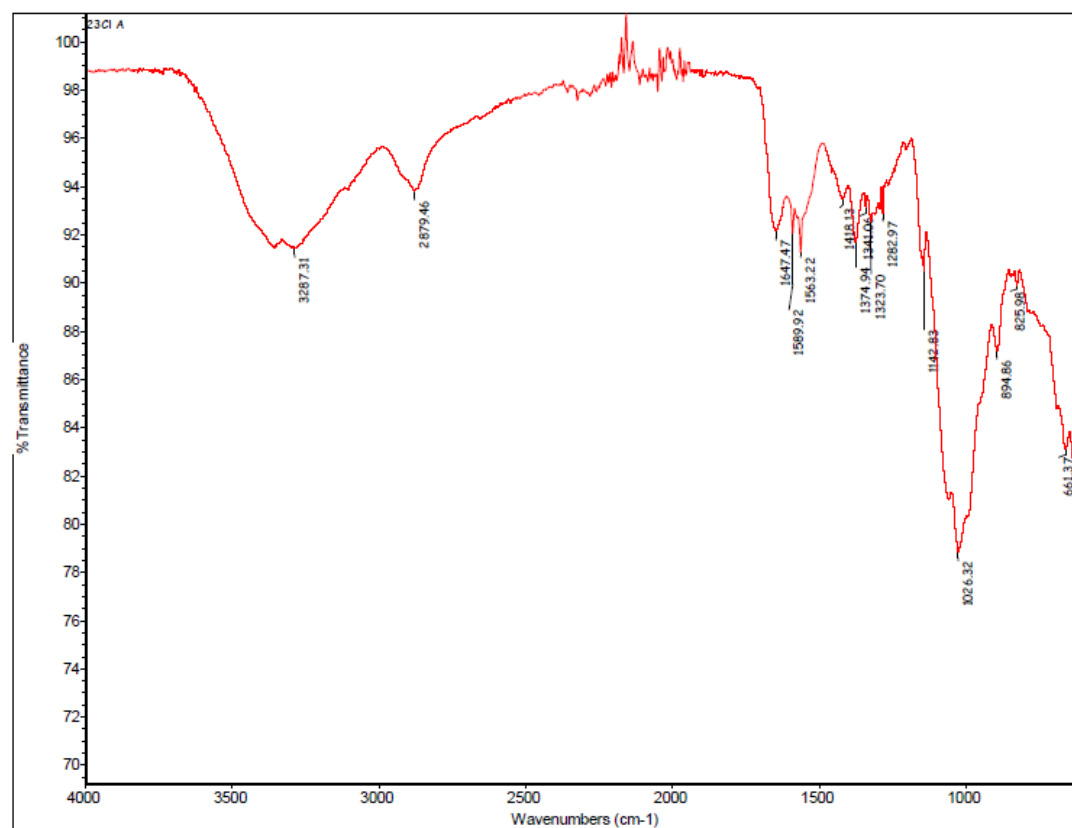
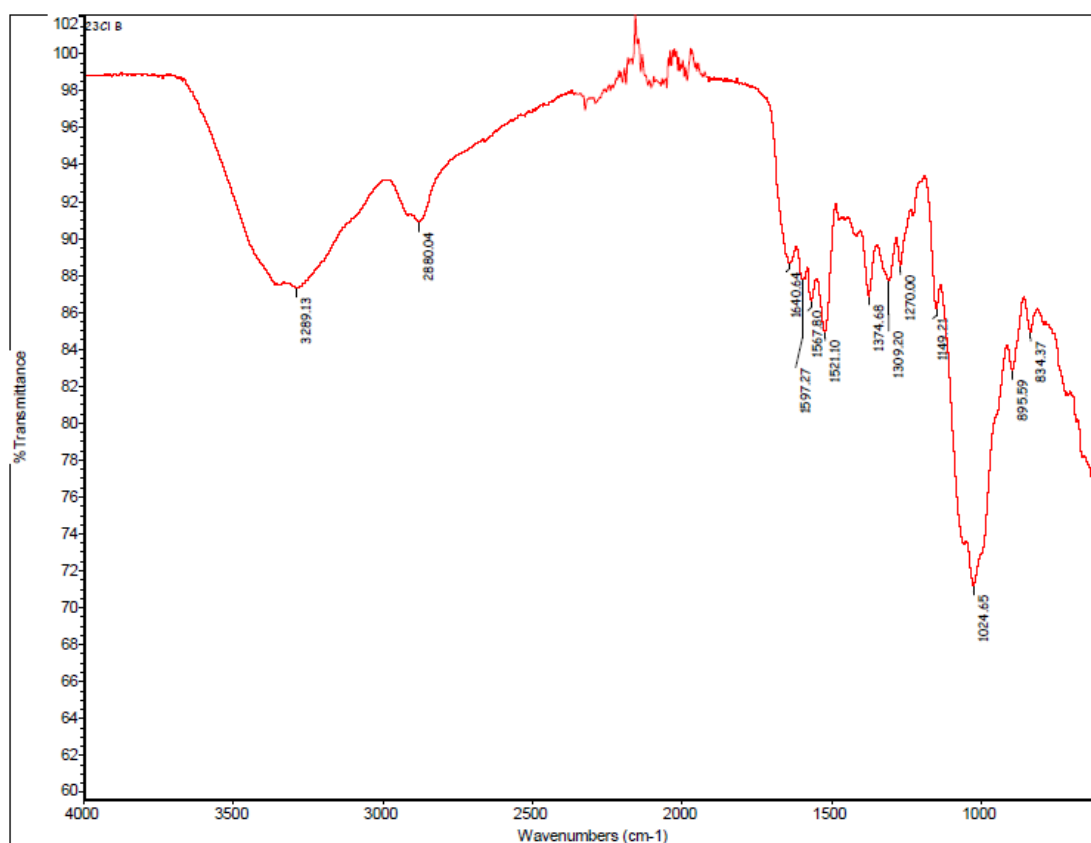
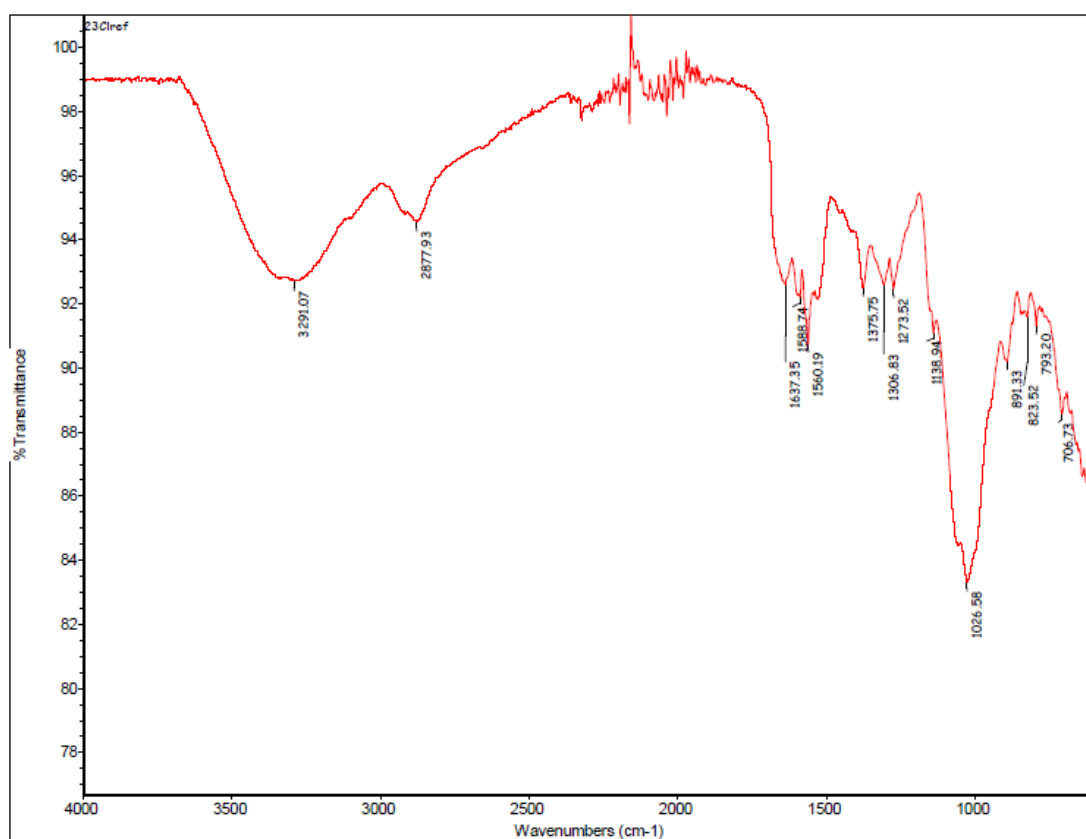


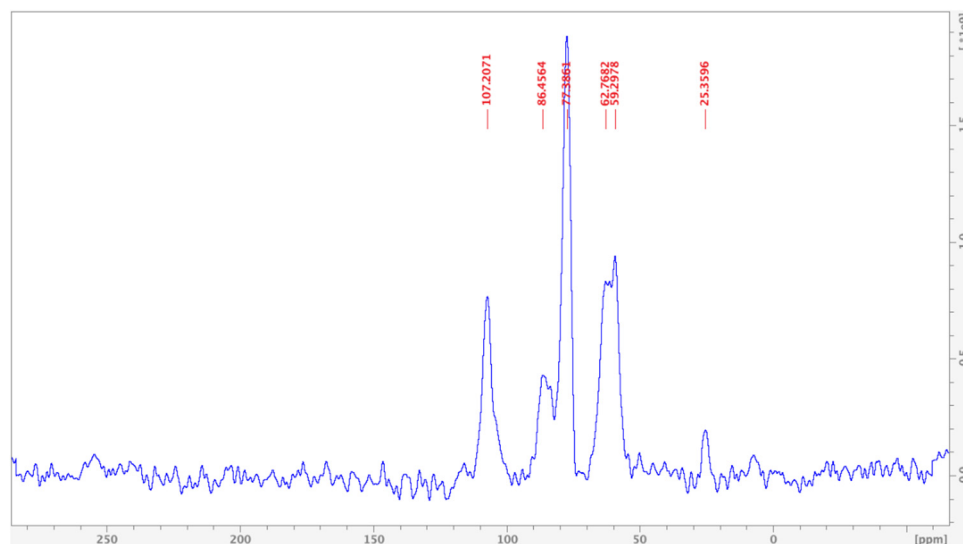
Figure S7. FTIR spectra of 1,4-NQ-CS obtained by method a.



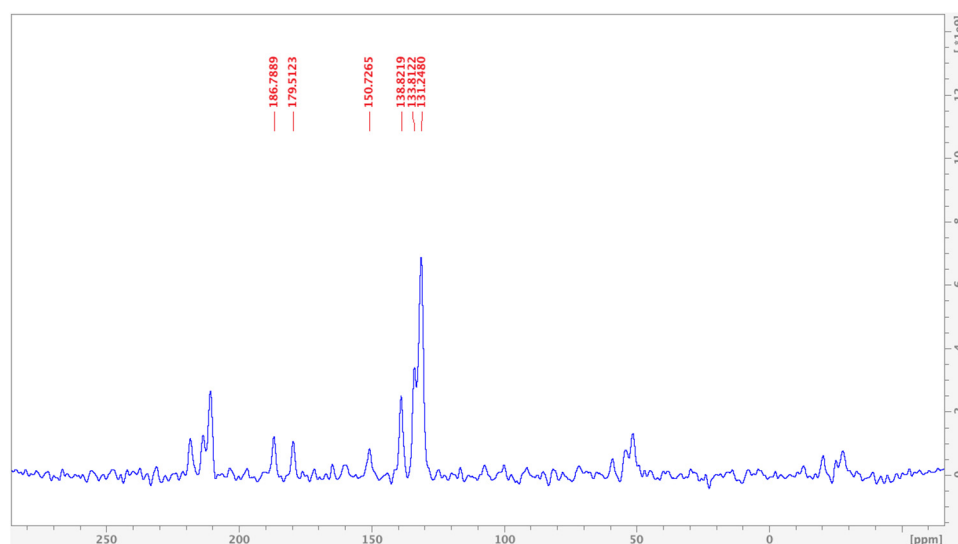
**Figure S8.** FTIR spectra of 1,4-NQ-CS obtained by method b.



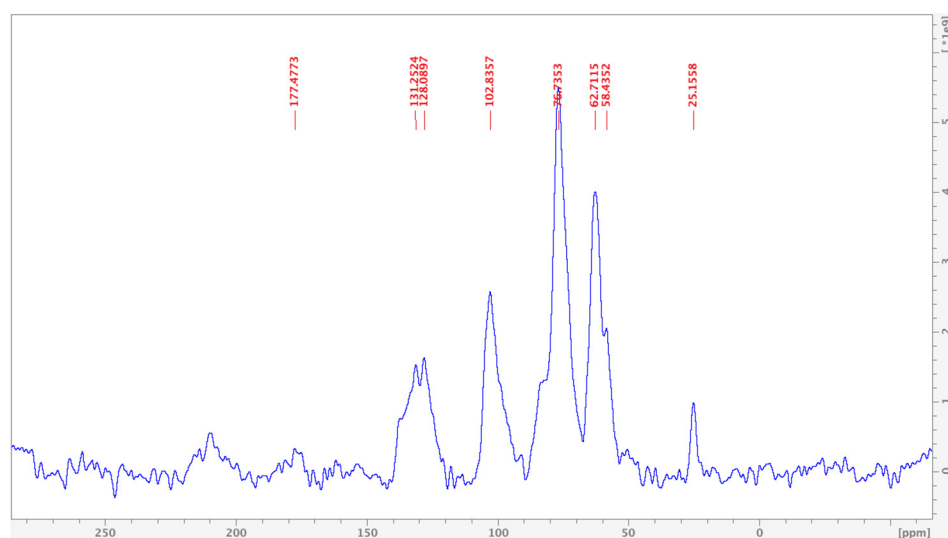
**Figure S9.** FTIR spectra of 1,4-NQ-CS obtained by method c.



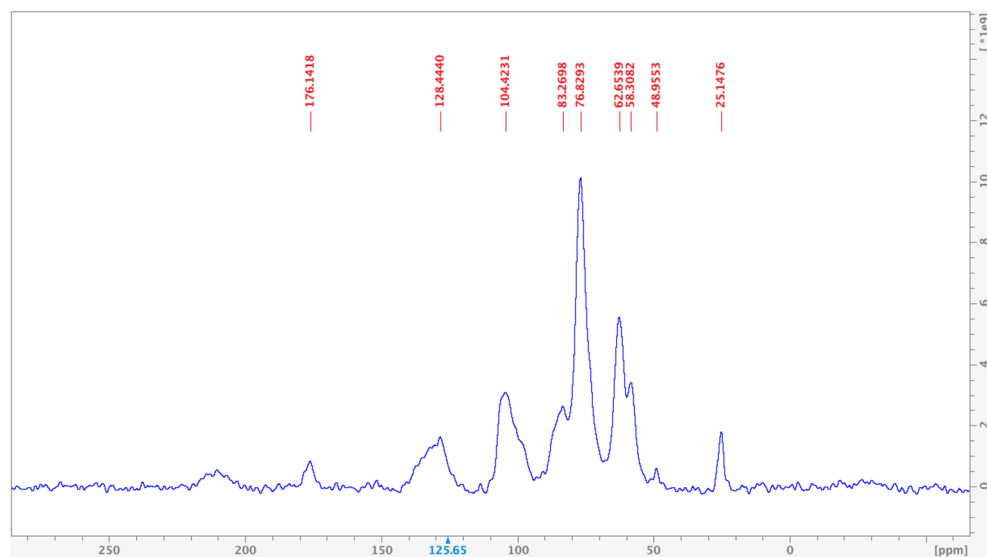
**Figure S10.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of CS.



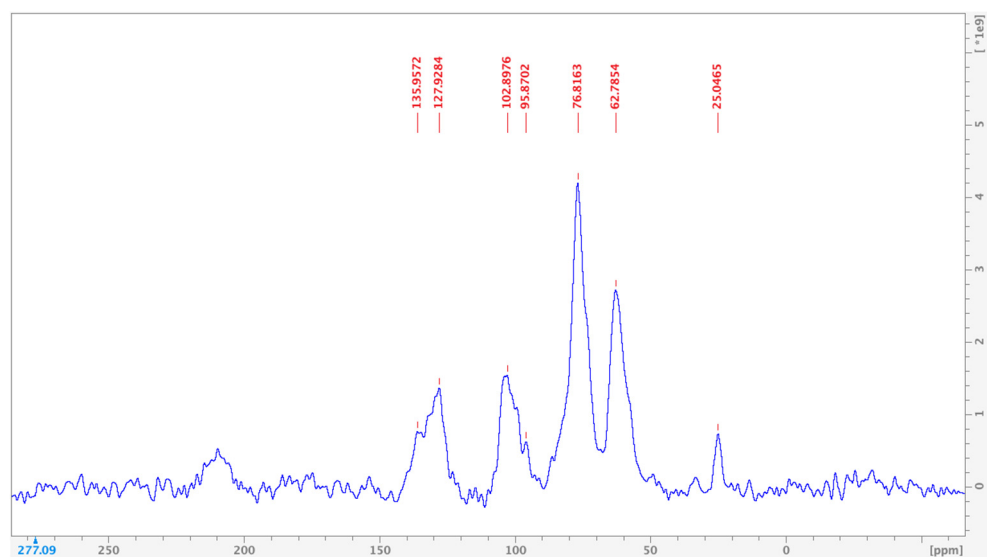
**Figure S11.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of 1,2NQ.



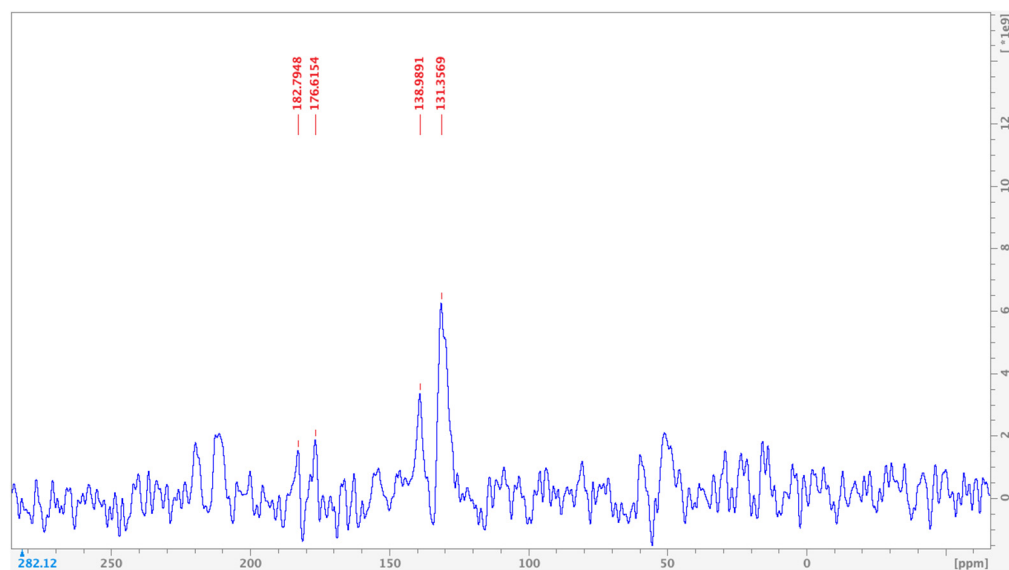
**Figure S12.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of 1,2NQ-CS obtained by method a.



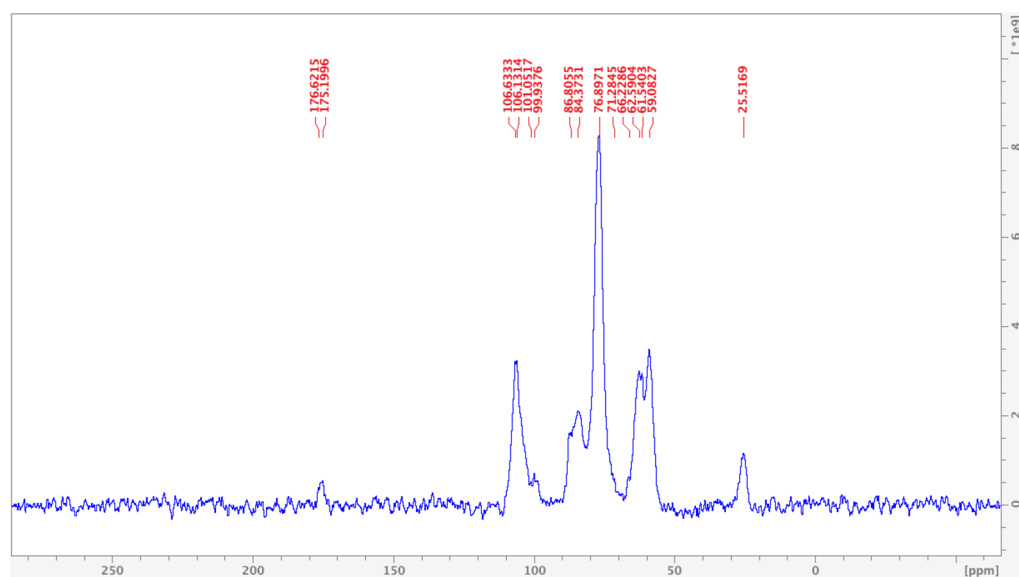
**Figure S13.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of 1,2NQ-CS obtained by method b.



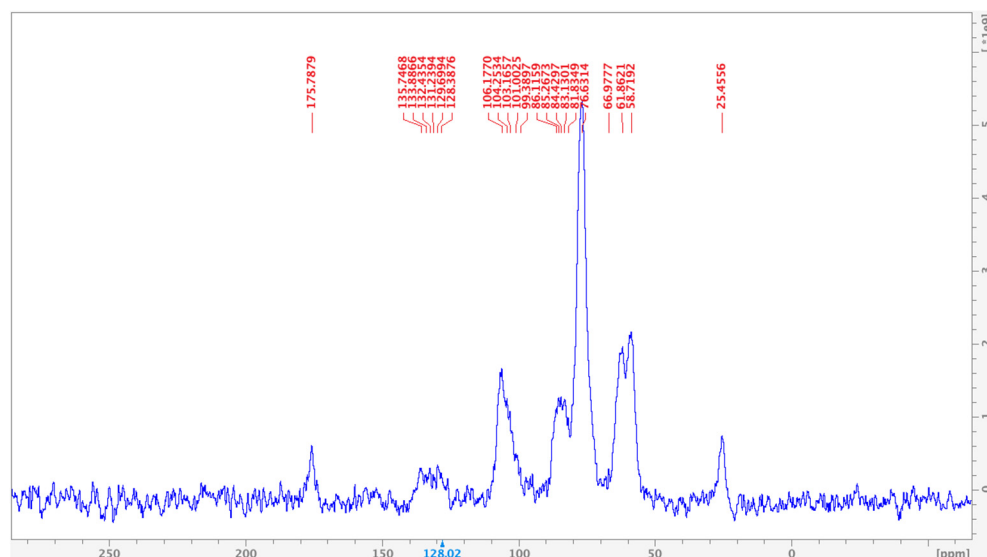
**Figure S14.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of 1,2NQ-CS obtained by method c.



**Figure S15.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of 1,4-NQ.

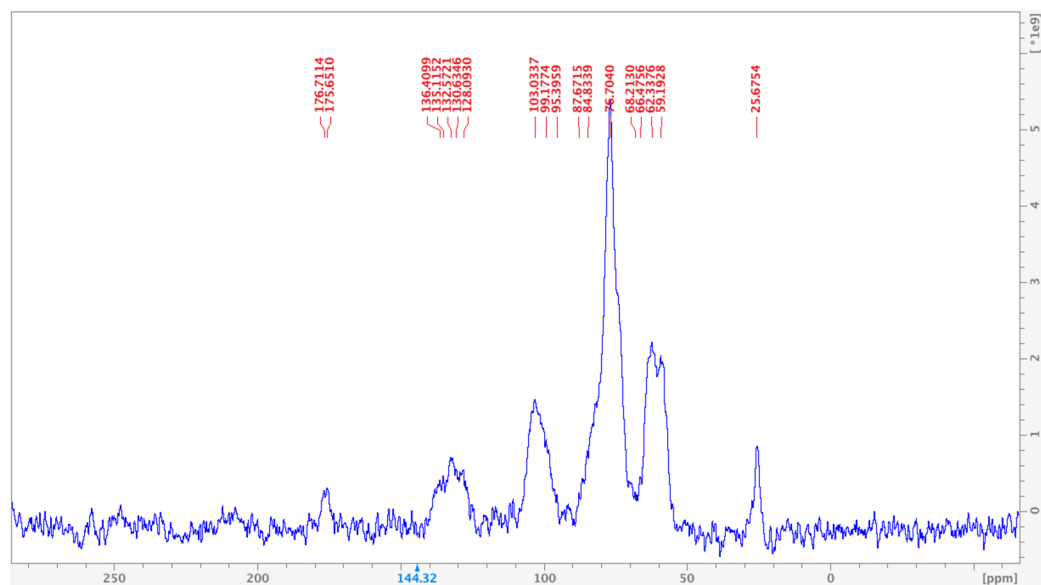


**Figure S16.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of 1,4-NQ-CS obtained by method a.



**Figure S17.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of 1,4-NQ-CS obtained by method b.





**Figure S18.** 125 MHz of  $^{13}\text{C}$  Solid State CP/MAS-10 KHz NMR spectra of 1,4-NQ-CS obtained by method c.