

Supplementary Material

Surface modified mesoporous nanocast carbon as catalyst for aqueous sulfide oxidation and adsorption of produced polysulfides

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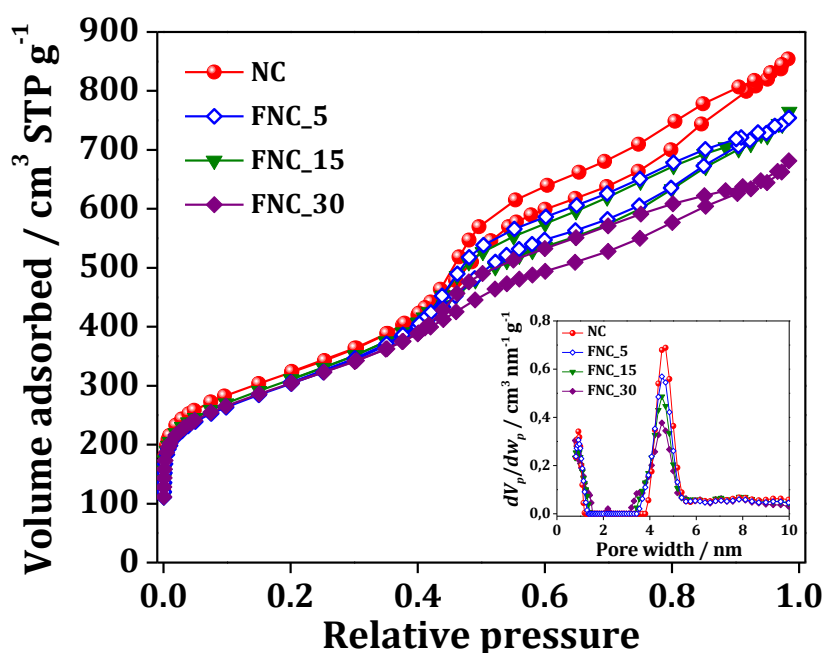


Figure S1. N₂ adsorption – desorption isotherms at 77 K of NC and FNC materials. Inset: pore size distribution of NC and FNC materials.

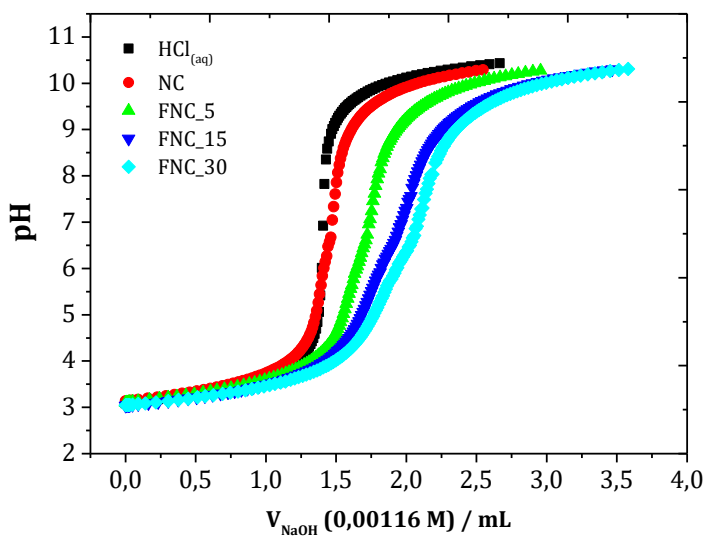


Figure S2. Experimental data of potentiometric titrations for HCl solution, NC and FNC samples.

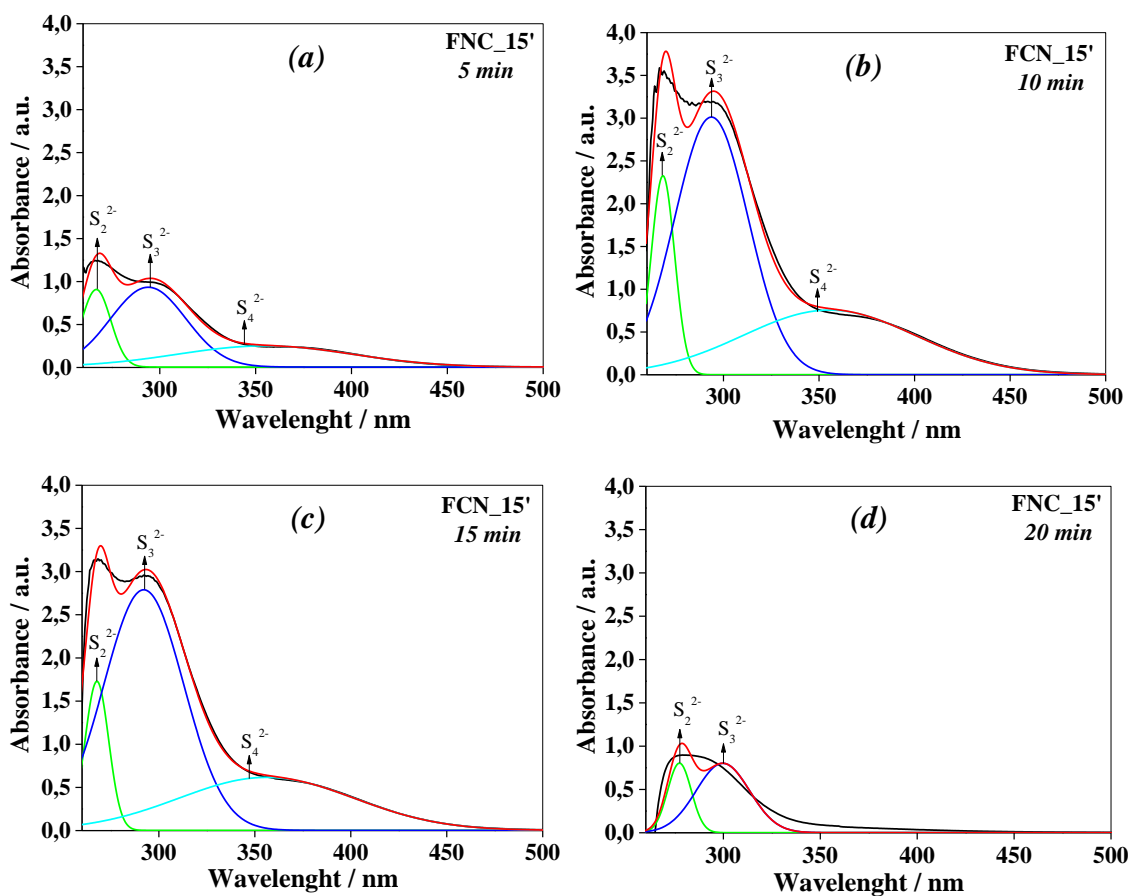


Figure S3. Deconvolution of UV-Vis spectra obtained for FCN₁₅ after (a) 5, (b) 10, (c) 15 and (d) 20 minutes of sulfide oxidation kinetics.

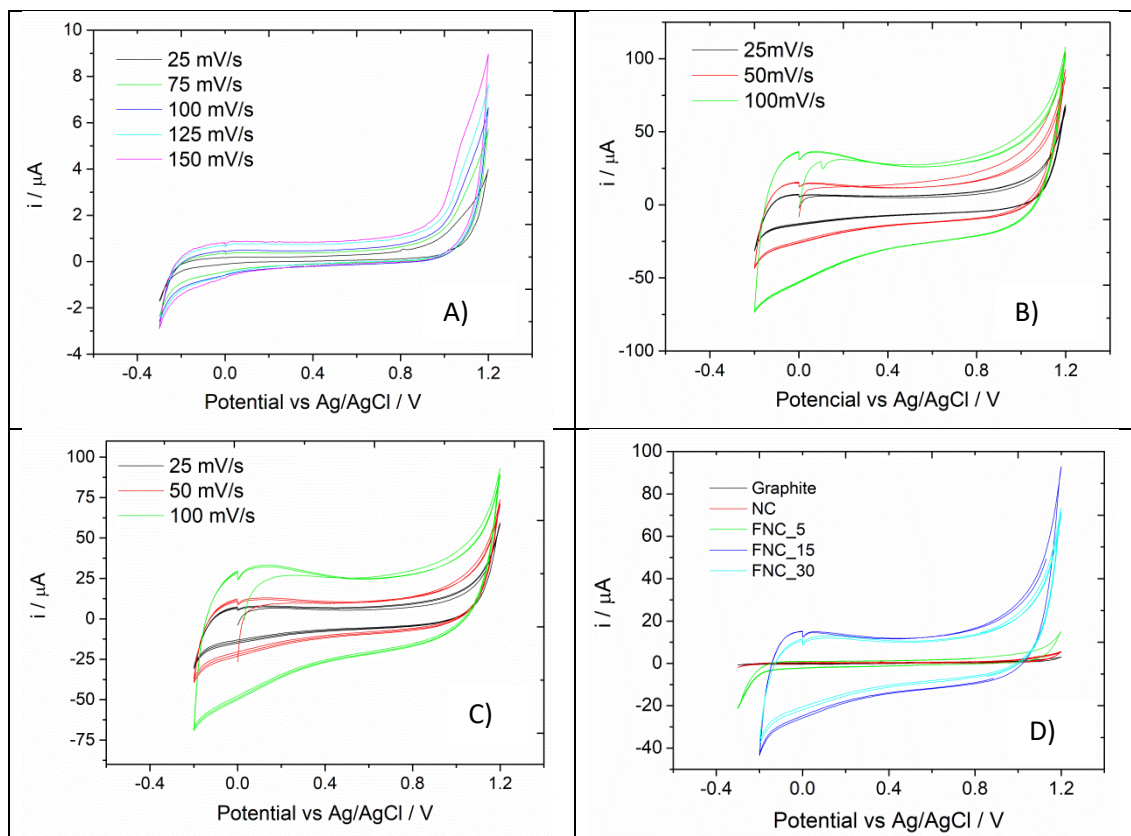


Figure S4. Cyclic voltammograms obtained in KCl 0.10 mol L⁻¹ with different scan rate. A) NC, B) FNC_15, C) FNC_30 and D) Comparison of the capacitive currents of the electrodes in 50 mVs⁻¹.

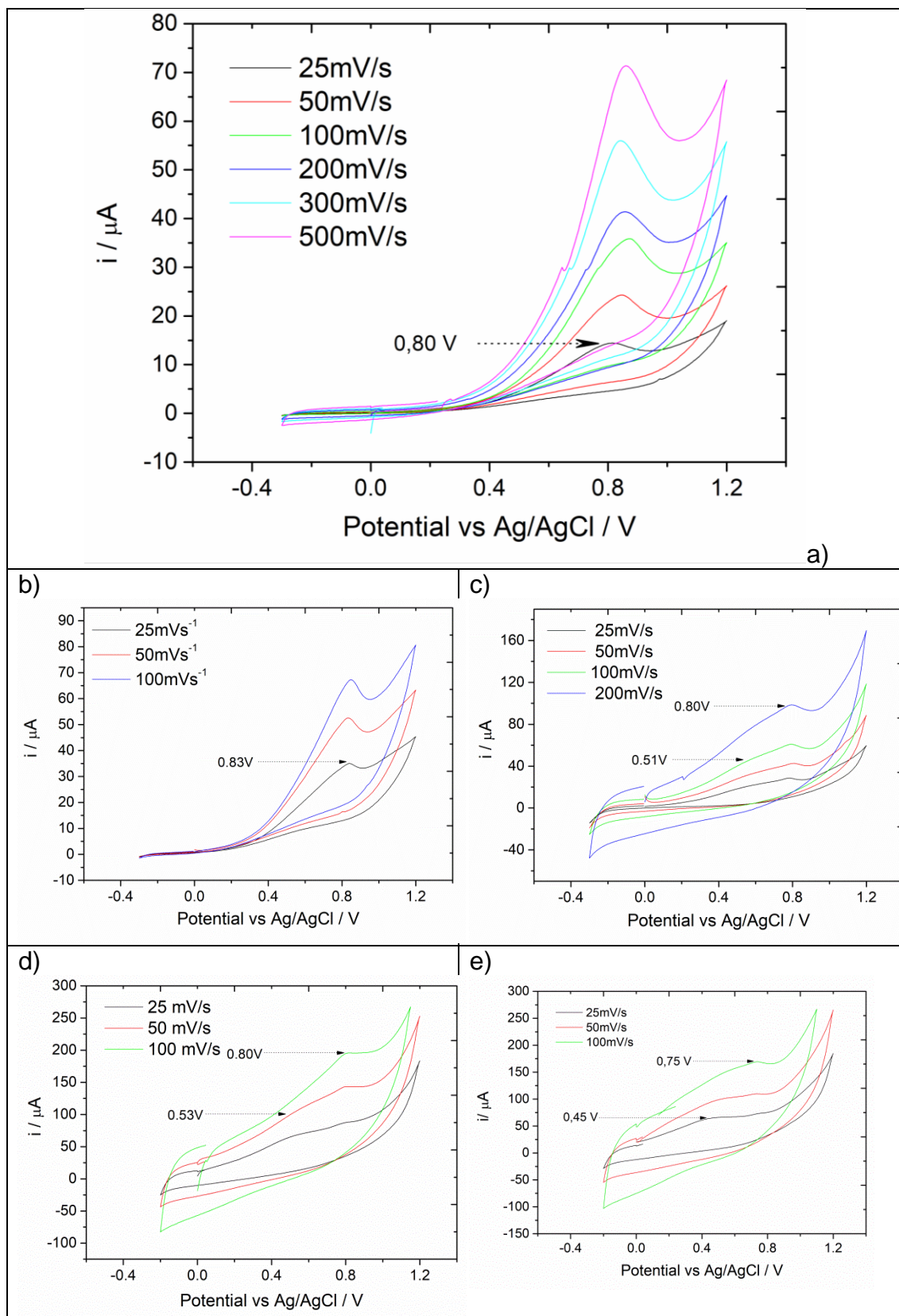


Figure S5. Cyclic voltammograms obtained in $\text{KCl } 0.10 \text{ mol L}^{-1}/\text{Na}_2\text{S } 0.001 \text{ mol L}^{-1}$ with different scan rate. a) graphite, b) NC, c) FNC_5, d) FNC_15 and e) FNC_30.

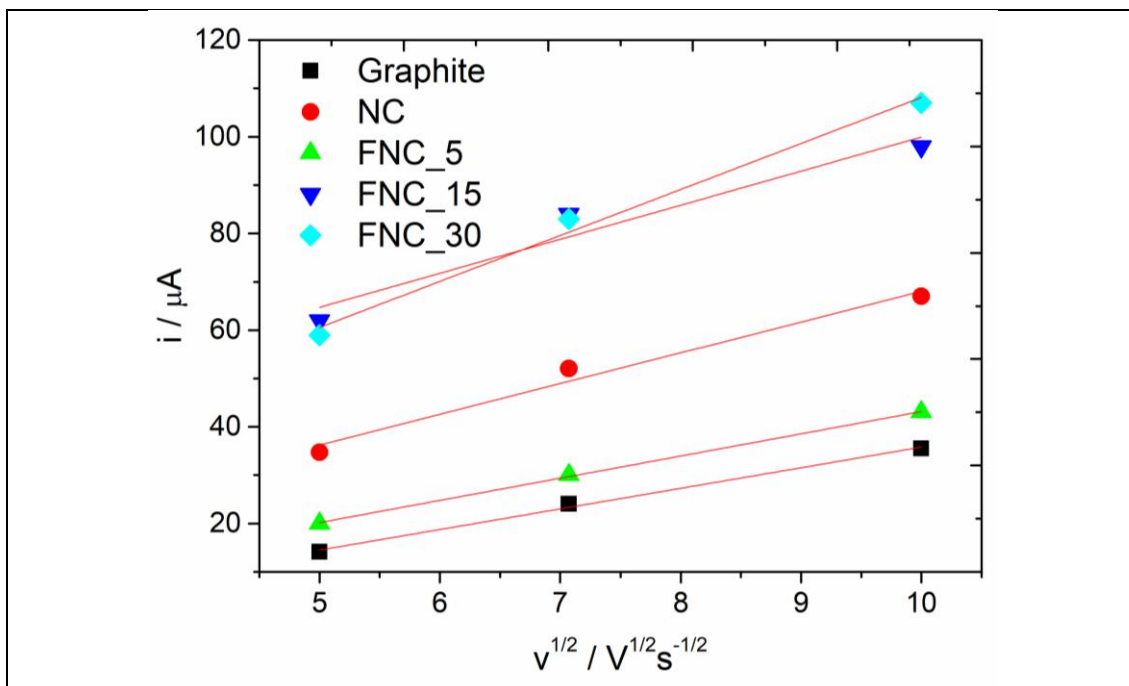


Figure S6. Anodic peak current versus the square root of the scan rate. The current values shown were obtained in different potentials vs Ag / AgCl: Graphite: 0.84V; NC = 0.83V; FNC_5: 0.53; FNC_15: 0.51V and FNC_30: 0.43V.