

From Au(I) organometallic hydrogels to well-defined Au(0) nanoparticles

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Supporting Information

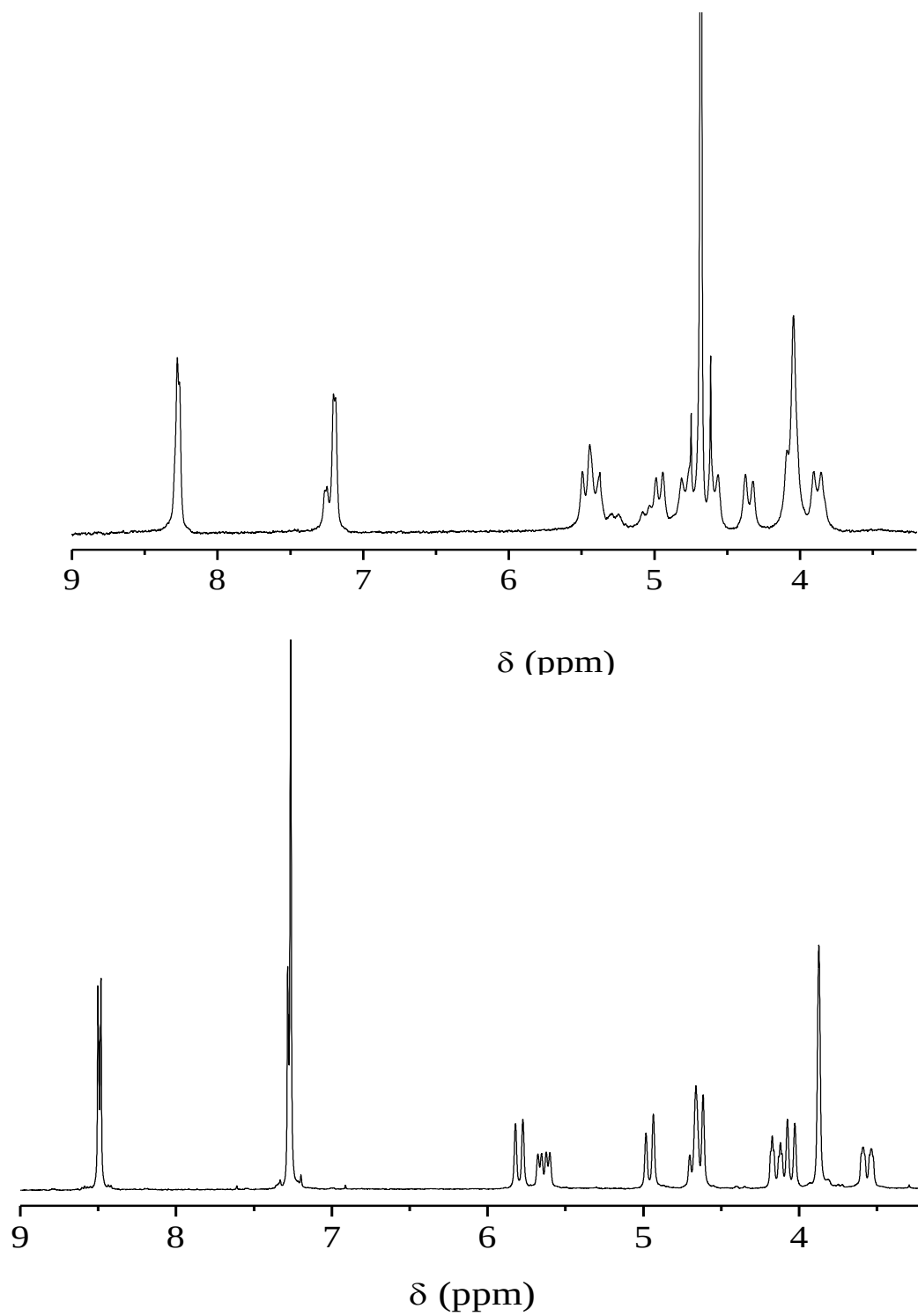


Figure S1. ¹H-NMR spectra of [Au(C≡C-C₅H₄N)(DAPTA)] in D₂O (up) and CDCl₃ (bottom).

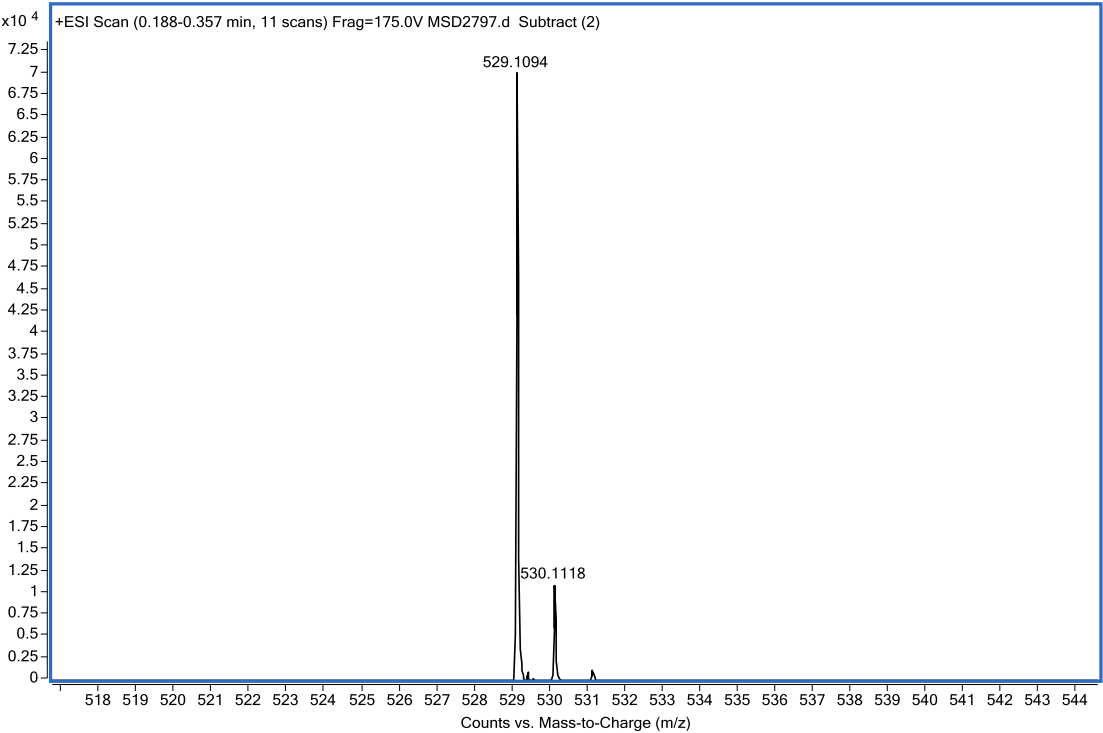


Figure S2. ESI-MS(+) spectrum of $[\text{Au}(\text{C}\equiv\text{C}-\text{C}_5\text{H}_4\text{N})(\text{DAPTA})]$.

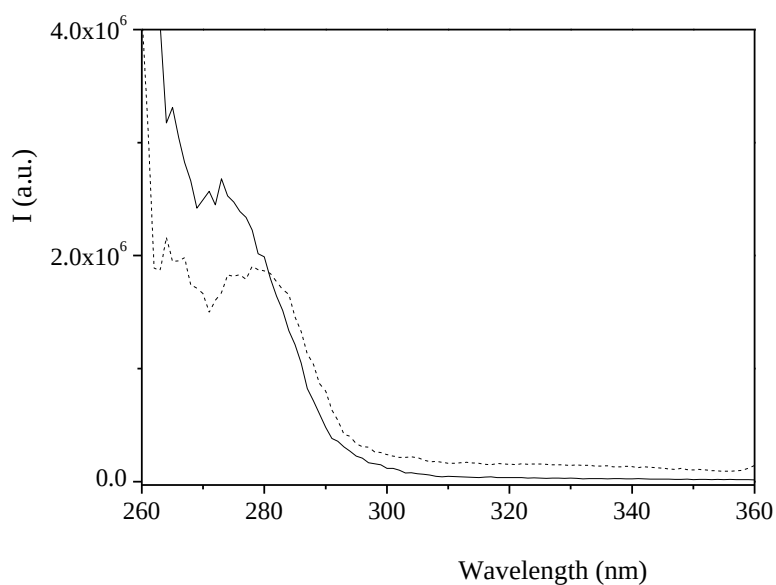


Figure S3. Excitation spectrum of a $6 \times 10^{-4} \text{ M}$ $[\text{Au}(\text{C}\equiv\text{C}-\text{C}_5\text{H}_4\text{N})(\text{DAPTA})]$ dichloromethane sample (dashed line) and aqueous sample (solid line). $\lambda_{\text{em}} = 390 \text{ nm}$.

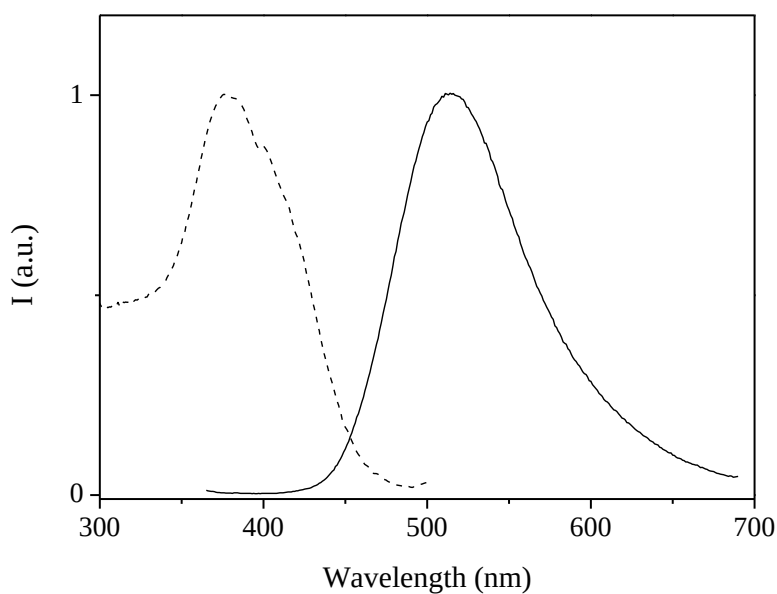


Figure S4. Normalized solid emission of $[\text{Au}(\text{C}\equiv\text{C}-\text{C}_5\text{H}_4\text{N})(\text{DAPTA})]$ (solid line, $\lambda_{\text{exc}} = 390 \text{ nm}$) and excitation spectra (dashed line, $\lambda_{\text{em}} = 515 \text{ nm}$).

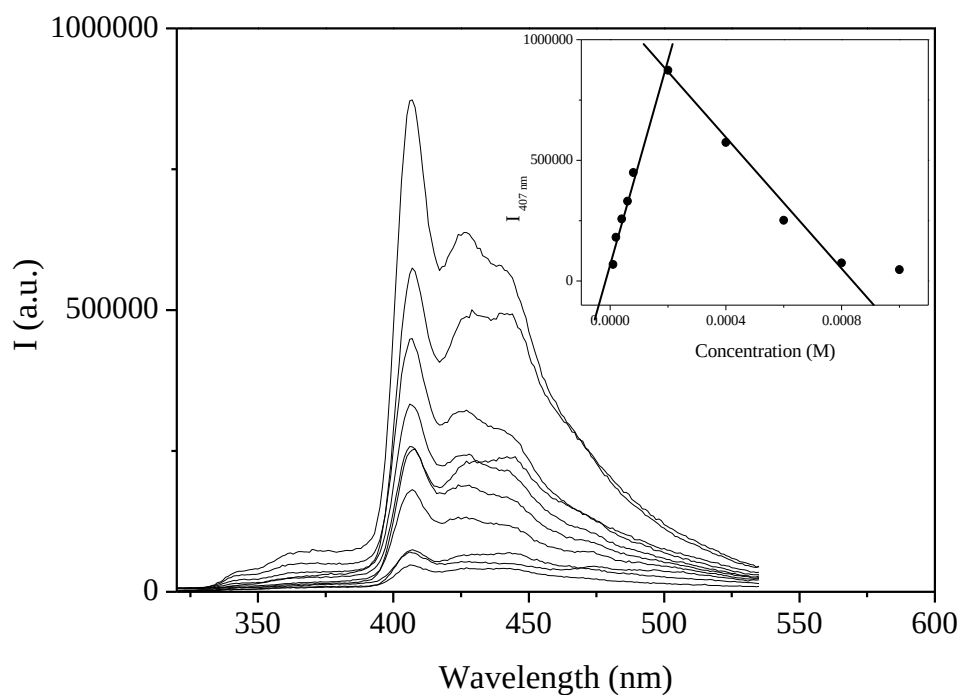


Figure S5. Emission spectra of $[\text{Au}(\text{C}\equiv\text{C}-\text{C}_5\text{H}_4\text{N})(\text{DAPTA})]$ in water between $1 \times 10^{-5} \text{ M}$ and $1 \times 10^{-3} \text{ M}$ in water ($\lambda_{\text{exc}} = 275 \text{ nm}$). Inset: Plot of $I_{407\text{nm}}$ against concentration.

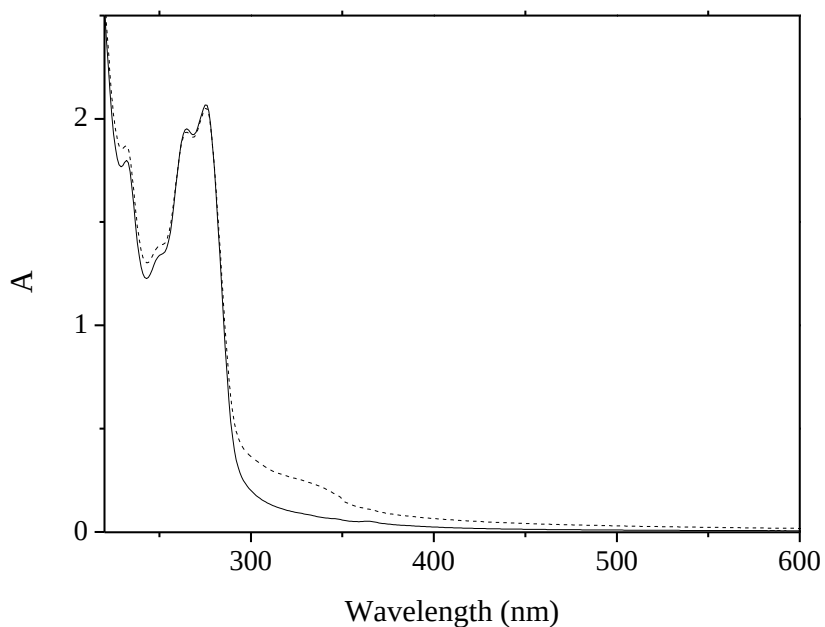


Figure S6. Absorption spectra of a freshly prepared $6 \times 10^{-4} \text{ M}$ $[\text{Au}(\text{C}\equiv\text{C}-\text{C}_5\text{H}_4\text{N})(\text{DAPTA})]$ water sample (solid line) and after two days (dashed line).

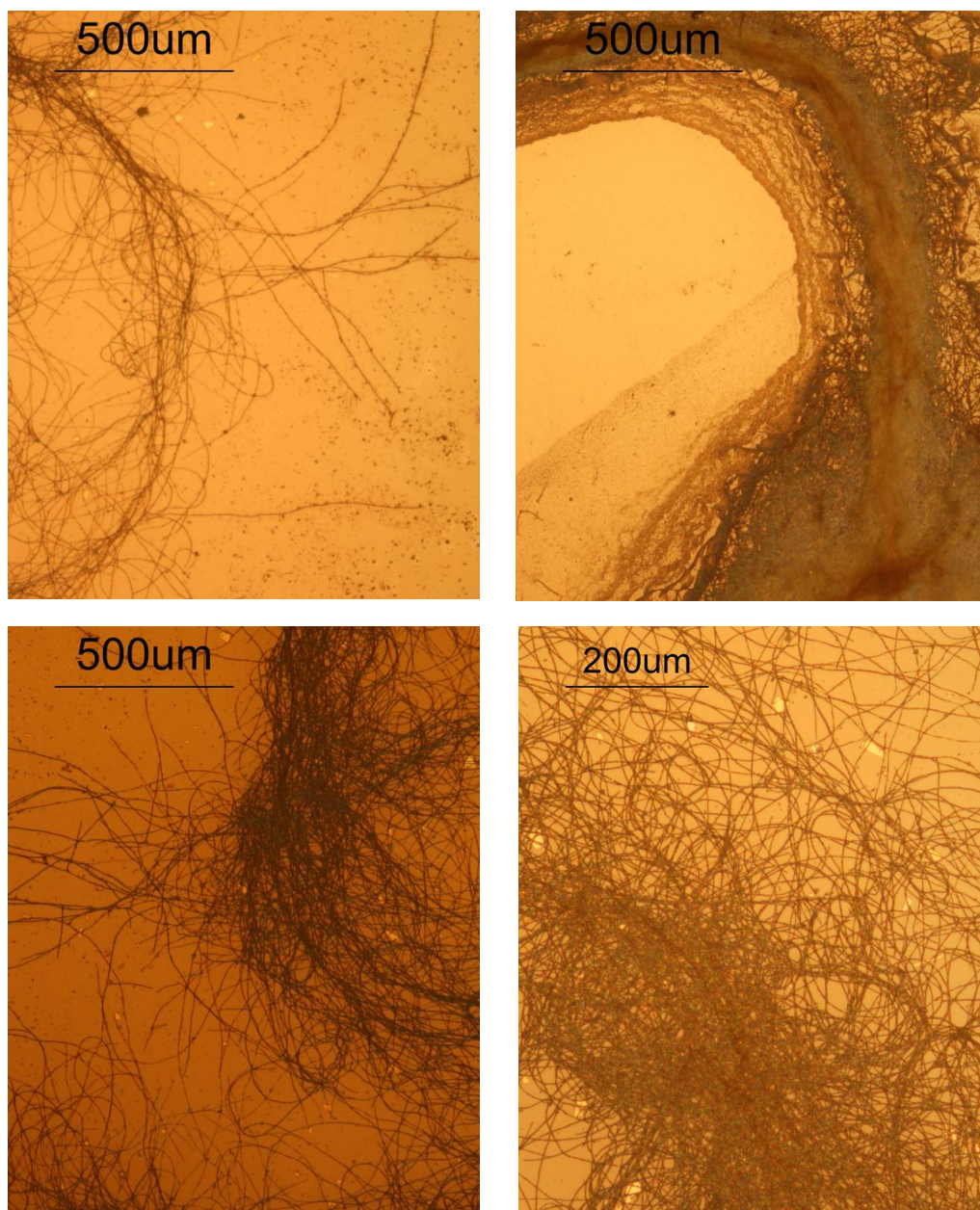


Figure S7. Optical microscopy images of the [Au(C≡C-C₅H₄N)(DAPTA)] fibers.

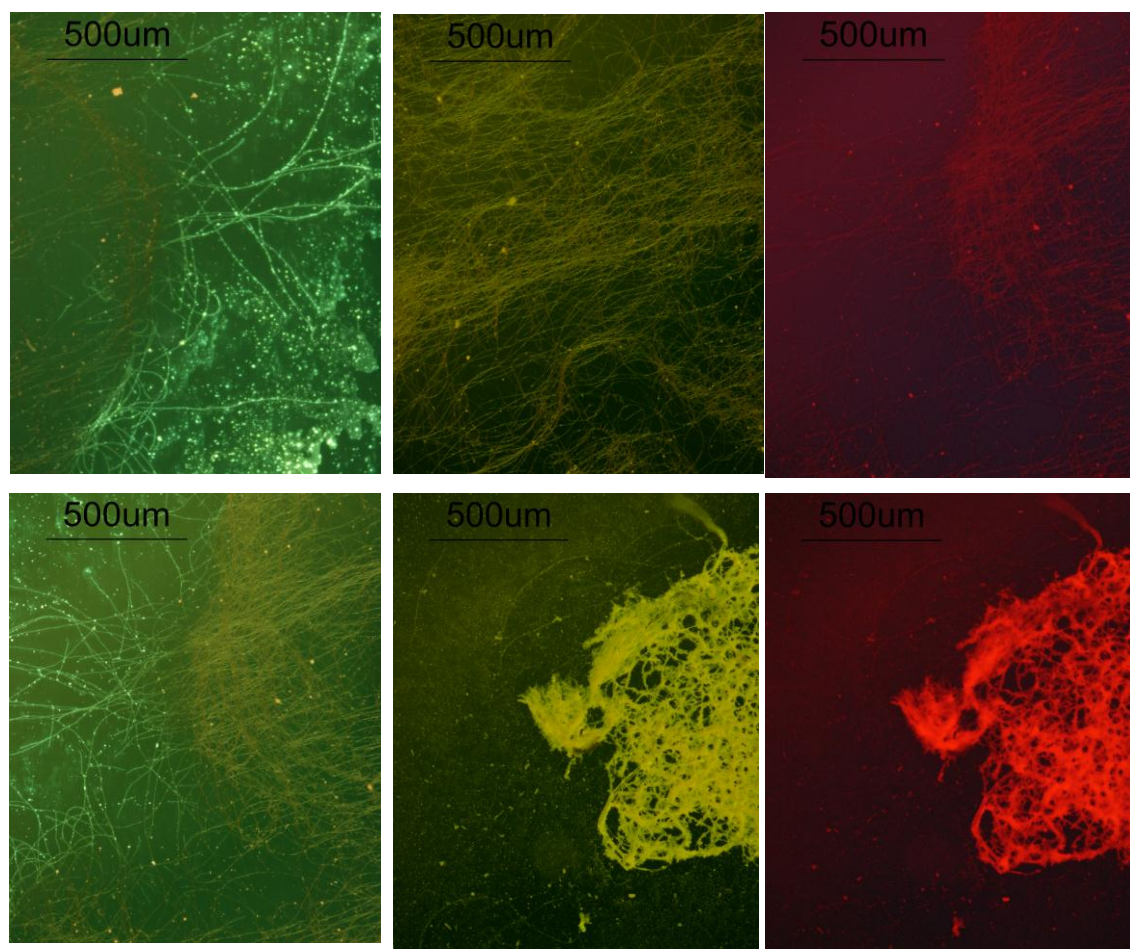


Figure S8. Images of $[\text{Au}(\text{C}\equiv\text{C}-\text{C}_5\text{H}_4\text{N})(\text{DAPTA})]$ fibers and cross-linked aggregates under fluorescence optical microscopy with a 395-440 nm filter (left and middle) and 510-560 nm filter (right).

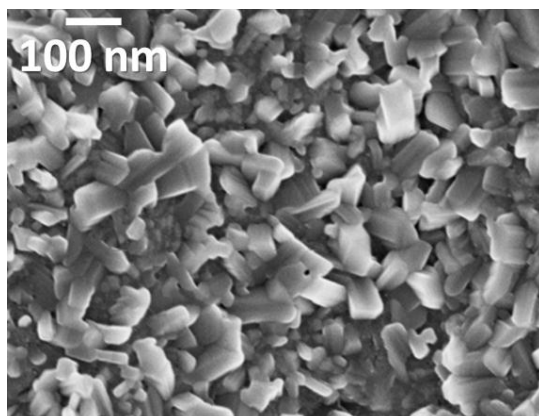


Figure S9. SEM images of the [Au(C≡C-C₅H₄N)(PTA)] xerogel on a rough (molybdenum) surface.

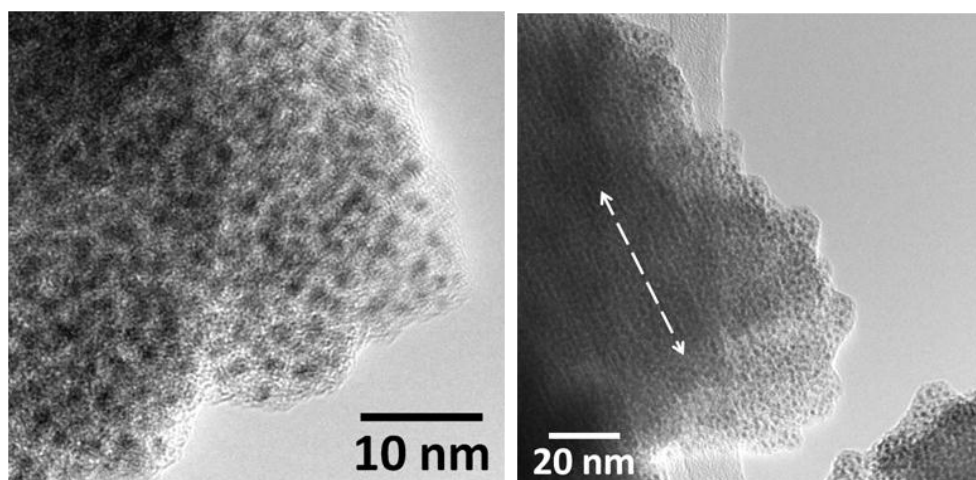


Figure S10. HRTEM images of xerogel upon electron beam irradiation.

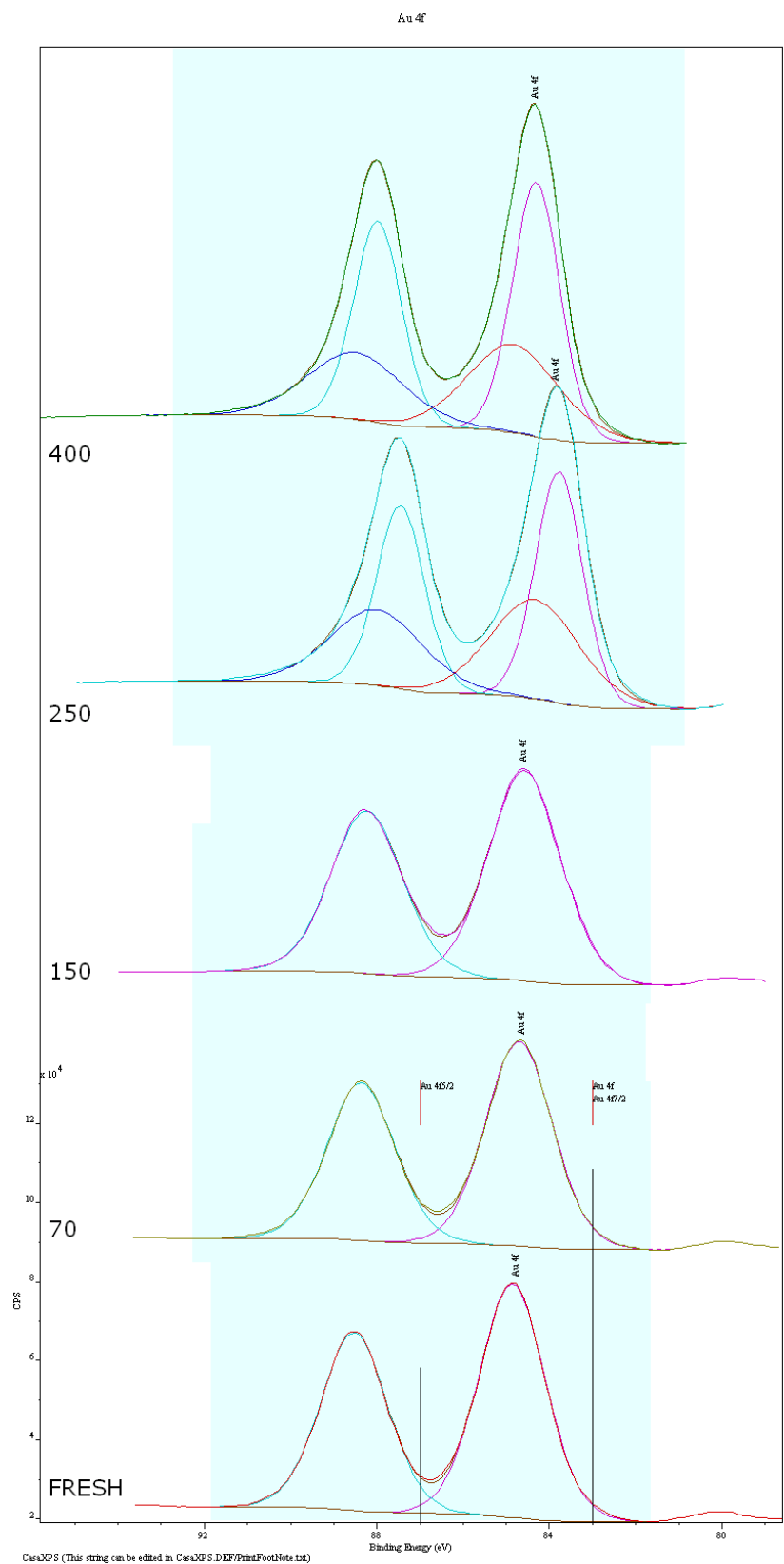


Figure S11. In-situ XPS data of $[\text{Au}(\text{C}\equiv\text{C}-\text{C}_5\text{H}_4\text{N})(\text{DAPTA})]$ with temperature.