

## Supporting Information

### Enzyme-free Detection of Hydrogen Peroxide from Cerium Oxide Nanoparticles Immobilized on Poly(4-vinylpyridine) Self – Assembled Monolayers

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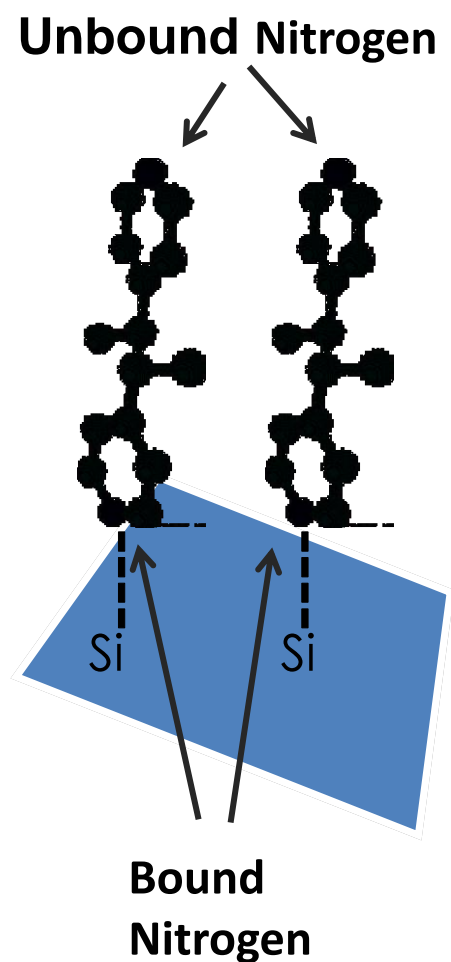
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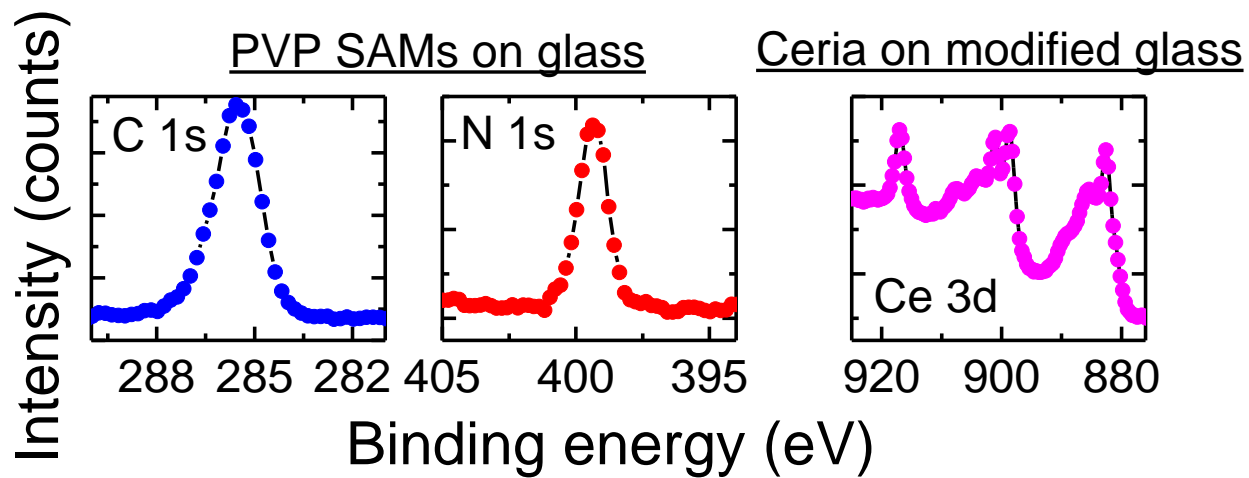
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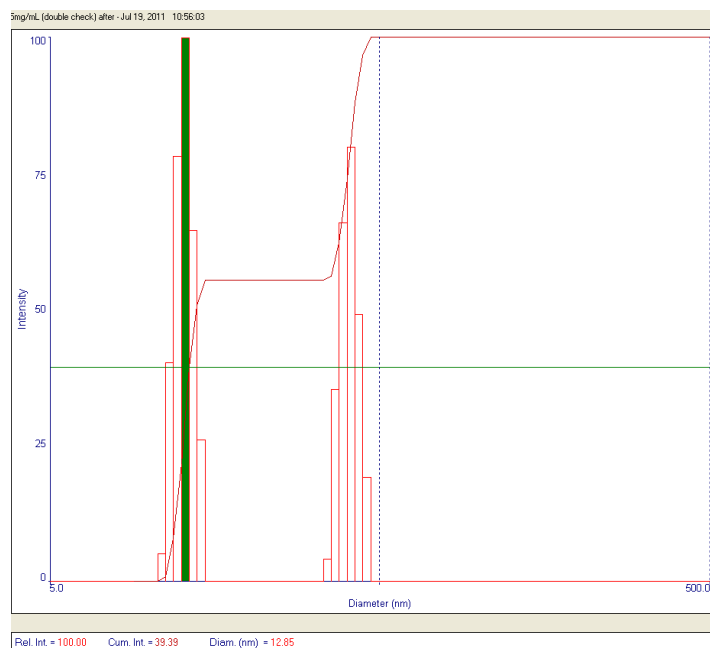
SI-1: Schematic of ideal PVP surface modification.

SI-2: XPS core level photoelectron spectra from carbon 1s and nitrogen 1s following modification of microscopic glass slide surface with PVP SAMs and cerium 3d following the immobilization of CNPs on 1% PVP SAMs.



SI-3: DLS particle size characterization of CNPs working solution prior to (a) and after (b) SAM immobilization. Results demonstrate no significant change in the CNP particle size distribution of the solution which yields a consistent size distribution of CNPs when immobilized on the glass slide surface.

(a)



(b)



SI-4: UV-Visible spectrophotometry data for microscopic glass slides modified with triple-layers of PVP/CNP show no differences in absorbance prior to exposure to  $H_2O_2$  which demonstrates robustness and repeatability for the CNP immobilization process.

