

Supplementary information

Raman and XPS studies of ammonia sensitive polypyrrole nanorods and nanoparticles

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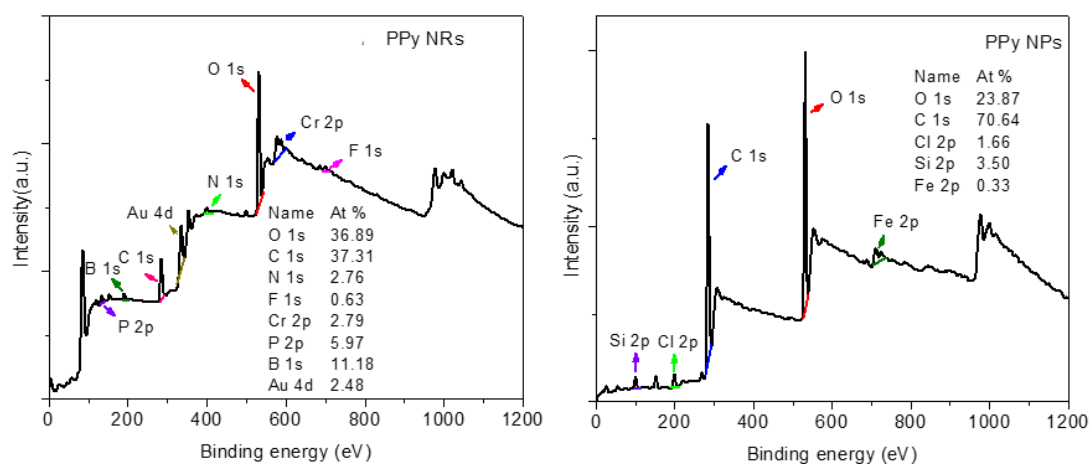


Figure S1. Survey XPS spectra for the PPy NRs and PPy NPs films and estimation of the concentration of these elements at the surface. The presence of F, Cr, P, B and Au in the electrochemically deposited PPy NRs is attributed to the reactants used in the synthesis process or etching of the template. Similarly the presence of Cl, Fe and Si is attributed to the reactants used in the chemical synthesis and the substrate (see experimental section).

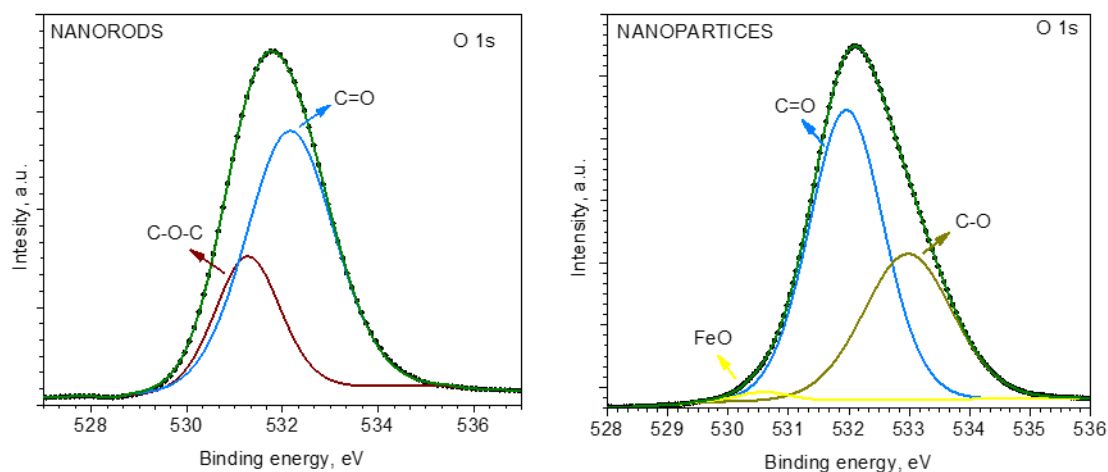


Figure S2. O 1s XPS core-level peaks recorded at the PPy NRs (left) and PPy NPs (right)

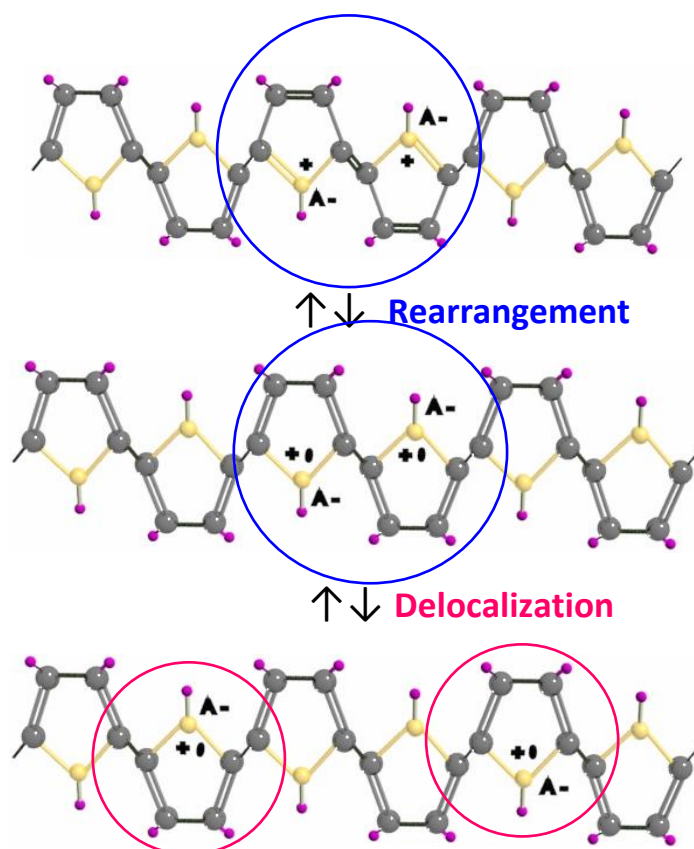


Figure S3. The transfer mechanism of bipolarons into polarons; the free holes of bipolarons are filled by the electron from donating analyte what is causing the transformation of bipolarons (two free holes) into polarons (one free hole, one electron); afterward, the rearrangement in PPy structure is occurred, what is followed with the bonds movement inside of Py ring and delocalization at the PPy chain.