

Preparation of Fe₃O₄-Embedded Poly(styrene)/Poly(thiophene) Core/Shell Nanoparticles and Their Hydrogel Patterns for Sensor Applications

Figure S1. Optical micrograph of styrene droplets prepared by using SPG membrane emulsification.

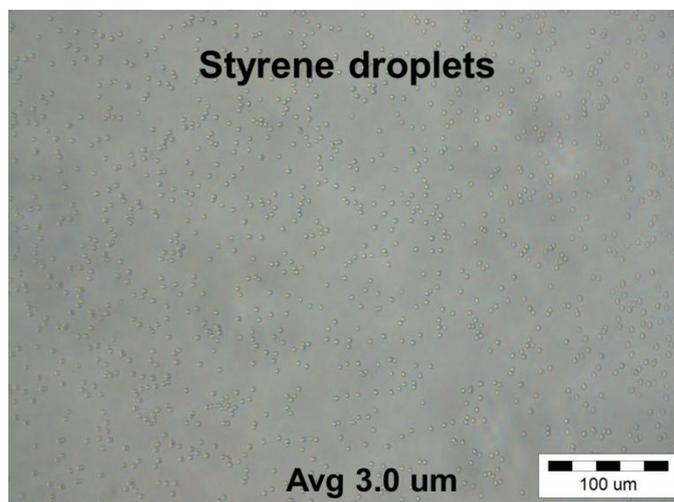
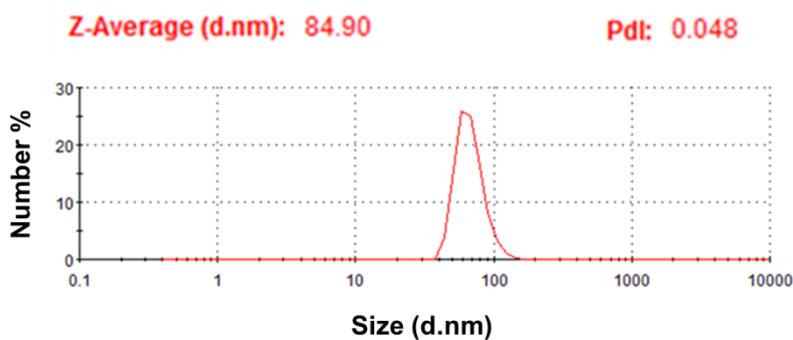


Figure S2. Particle size distributions of (a) Fe₃O₄-PSt and (b) Fe₃O₄-PSt/PTh nanoparticles dispersed in DDI water at the same concentration of about 0.01 wt%.

(a)



(b)

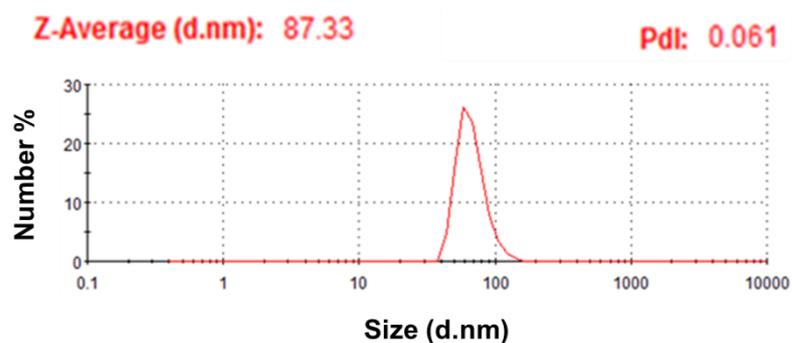


Figure S3. TGA curves of (a) as-synthesized PSt and (b) Fe₃O₄-PSt nanoparticles.

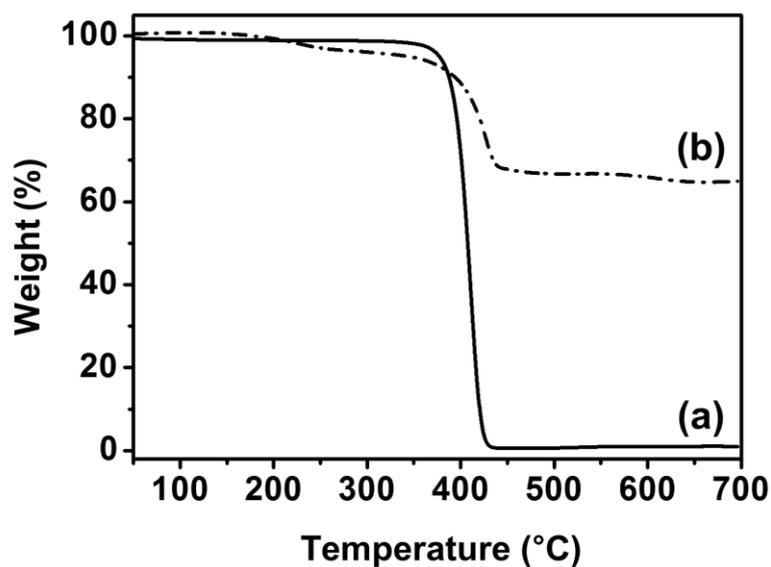


Figure S4. Fluorescence images of Fe₃O₄-PSt/PTh nanoparticles-immobilized hydrogel patterns, (a) 10 wt% and (b) 5 wt% Fe₃O₄-PSt/PTh nanoparticle concentrations, respectively. (c) is corresponding profile of fluorescence intensities recorded at the dashed lines in (a) and (b).

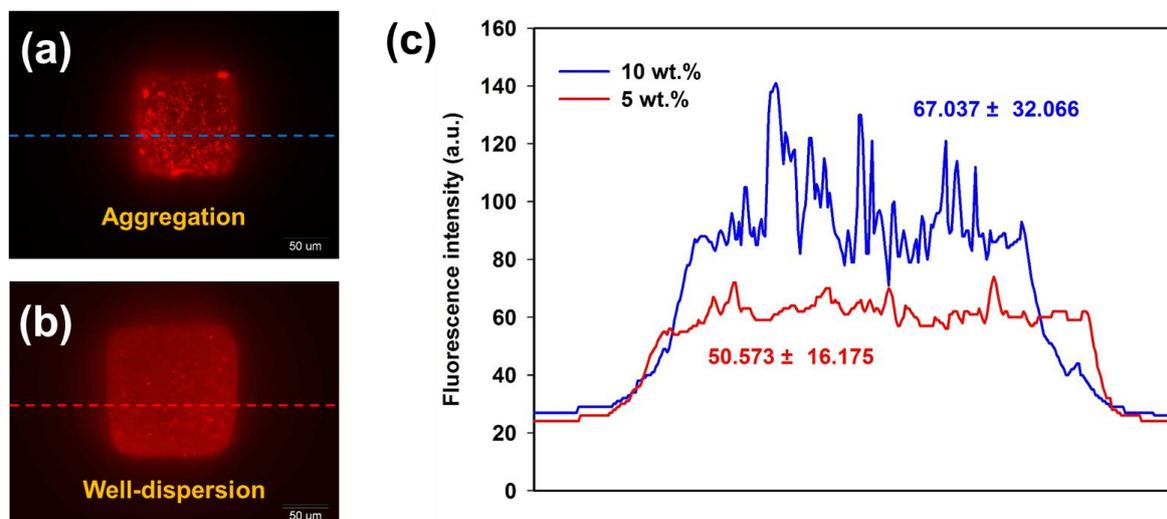


Figure S5. (a) Fluorescence micrographs of Fe_3O_4 -PSt/PTh immobilized hydrogel patterns in the $10 \mu\text{g/mL Fe}^{3+}$ aqueous solution and (b) corresponding fluorescence intensity as a function of contact time.

