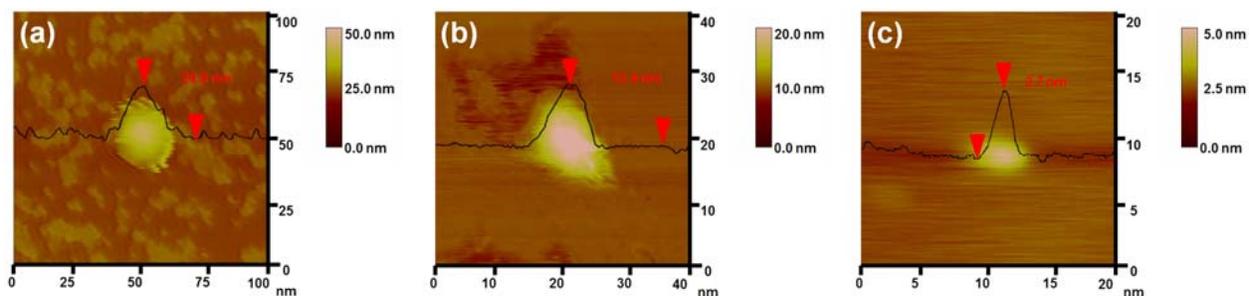


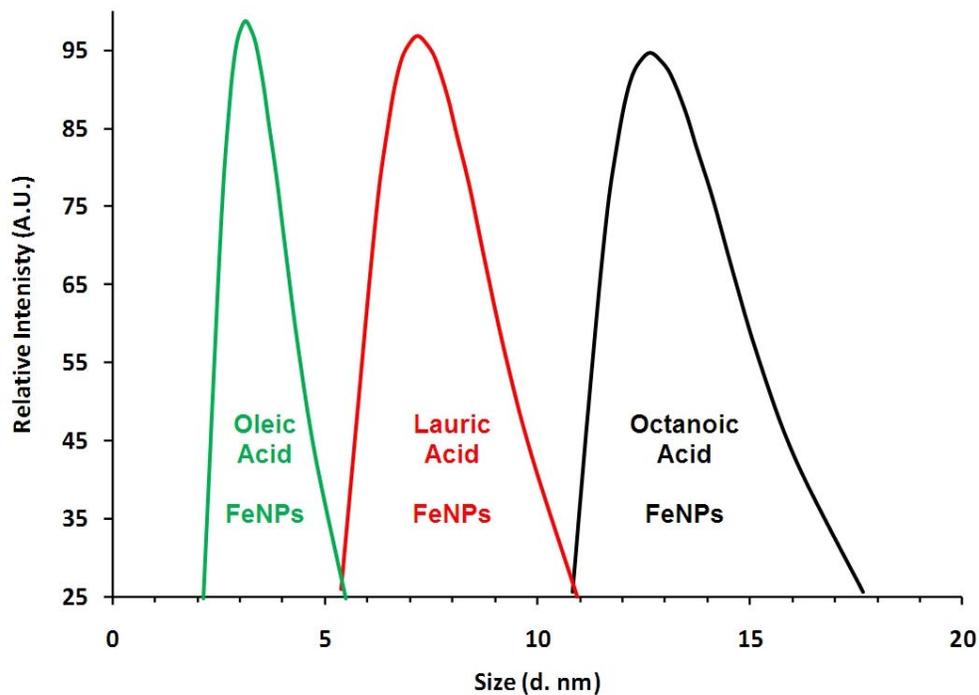
# Controlling the Volumetric Parameters of Nitrogen-Doped Carbon Nanotube Cups

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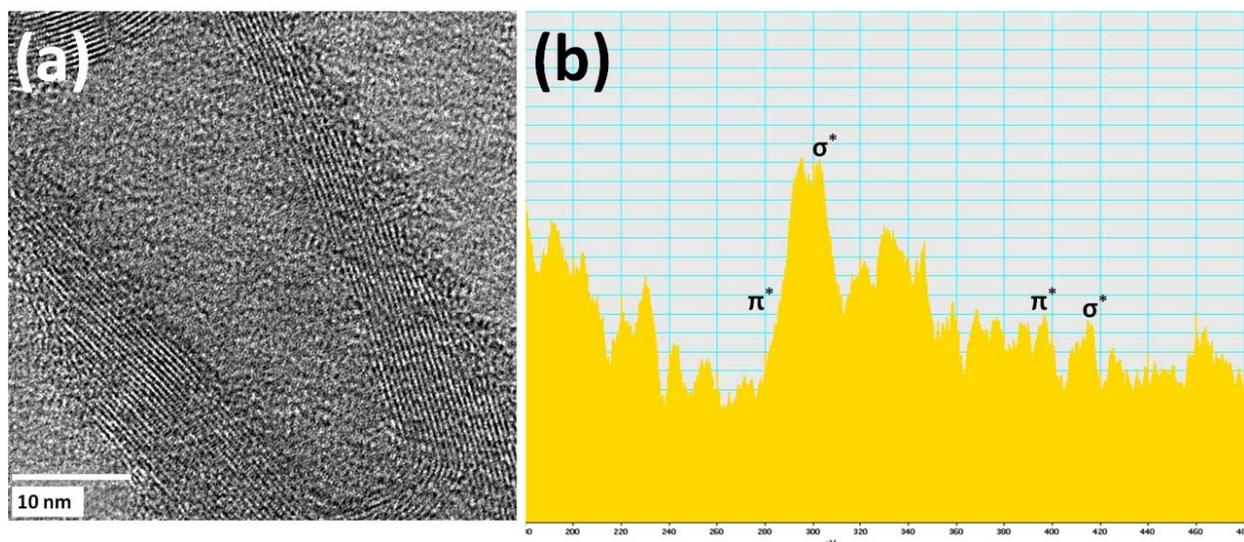
## Supplementary Information



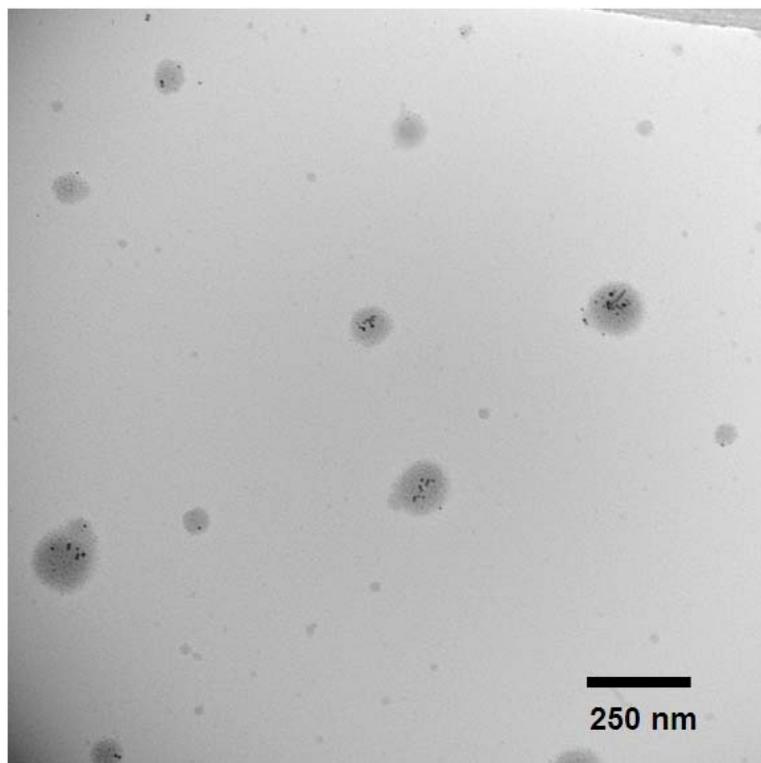
**Figure S1.** AFM height images of (a) octanoic acid-, (b) lauric acid-, and (c) oleic acid-capped FeNPs displaying height profiles of 20.8 nm, 12.4 nm, and 2.7 nm, respectively.



**Figure S2.** Dynamic light scattering (DLS) measurements of synthesized FeNPs of varying diameter distributions.



**Figure S3.** High resolution TEM micrograph of synthesized NCNC. Striations indicate lattice walls running in parallel to each other but diagonal to the longitudinal axis of the fiber. (b) Corresponding EELS analysis indicated the presence of 2-7% N as a result of nitrogen doping.



**Figure S4.** A typical TEM image depicting multiple nanocapsules containing gold nanoparticles (GNPs) prepared by cross-linking NCNCs from 5%  $\text{NH}_3$ .