

Supplementary Information

Porous α -Fe₂O₃ Nanostructures with Branched Topology: Growth, Formation Mechanism, and Properties

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Figure Captions

Figure S1. (a) Nitrogen adsorption and desorption isotherms measured at 77 K for the as-prepared α -Fe₂O₃ NRs. (b) BJH pore size distribution.

Figure S2. Representative tapping-mode AFM phase image (682 × 682) nm of α -FeOOH nanostructures.

Figure S3. (a) High-resolution TEM image of the apex of a needle-shaped α -FeOOH nanorod. (b) Representative TEM image of straight and branched α -FeOOH NRs.

Figure S4. Representative TEM images reflecting time-dependent shape and size changes of α -FeOOH precursor at pH 12 and 90° as a function of reaction time for (a) 30, (b) 90, and (c) 168 h, respectively. The white circle highlights that some nanorods are oriented along the same direction as a result of side-by-side oriented attachment.

Figure S5. Time-dependent size changes for α -FeOOH NRs at pH 12 and 90°. (a) Length distribution of α -FeOOH NRs as a function of reaction time for 30, 90, and 168 h, respectively. (b) Width distribution of α -FeOOH NRs as a function of reaction time for 30, 90 and 168 h, respectively.

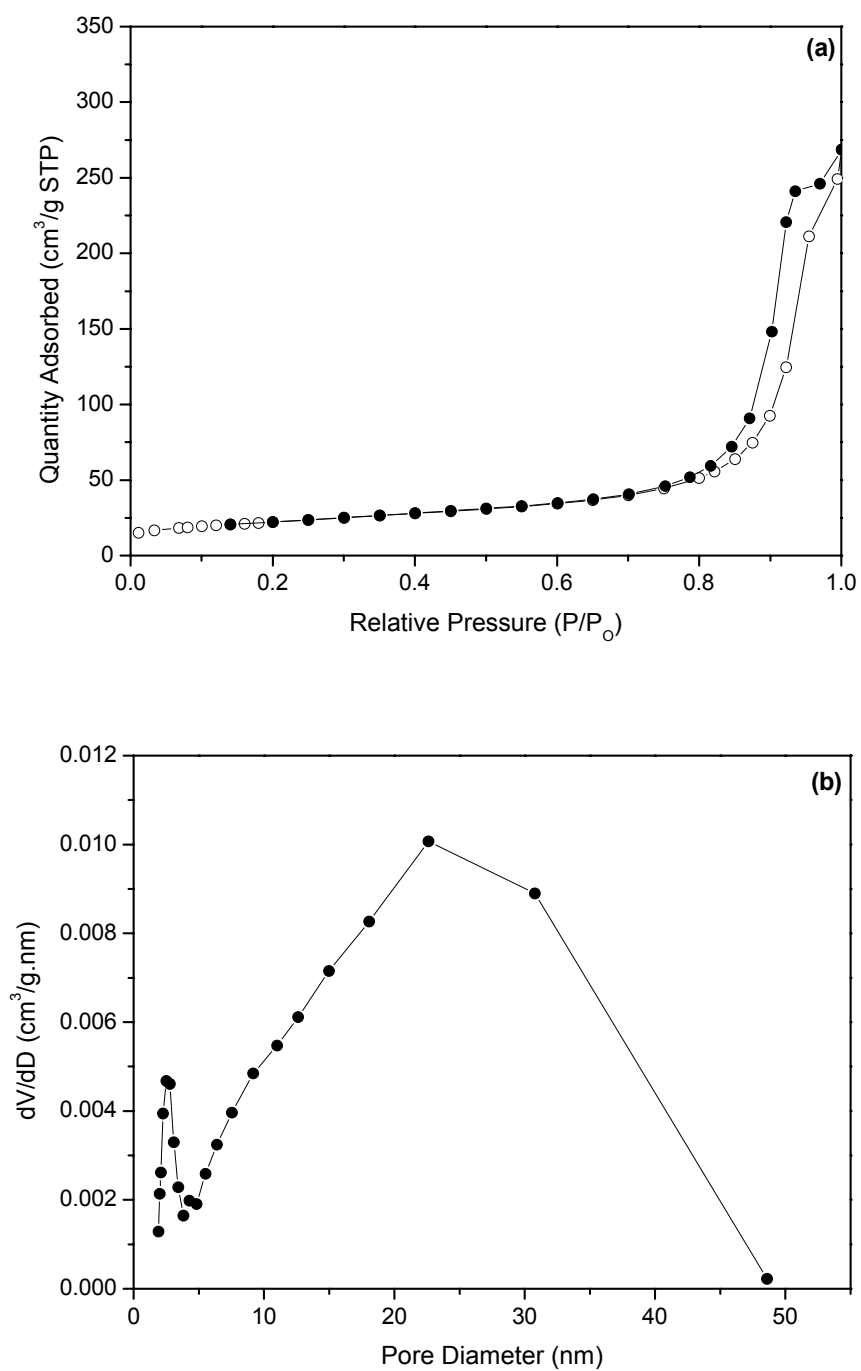


Figure S1

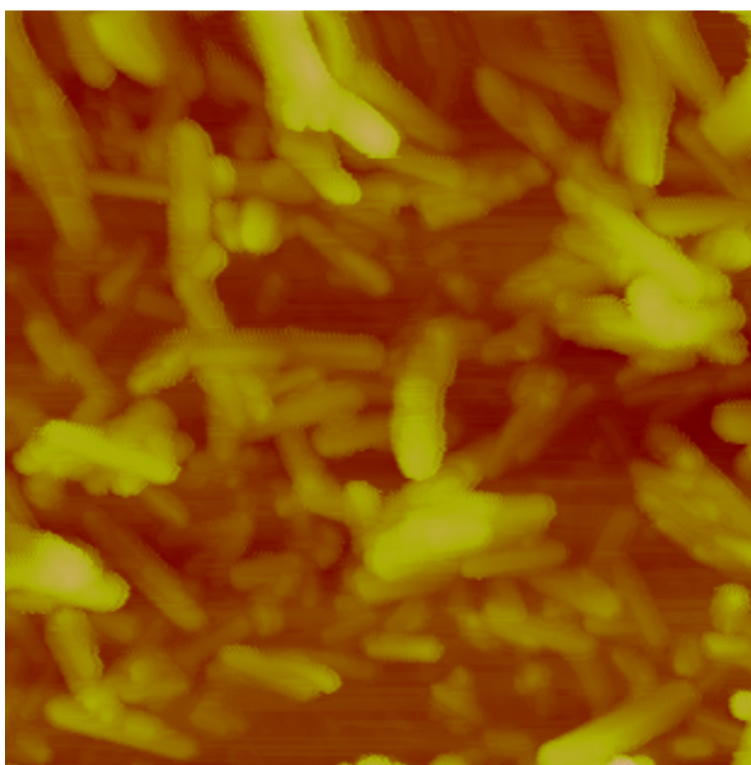


Figure S2

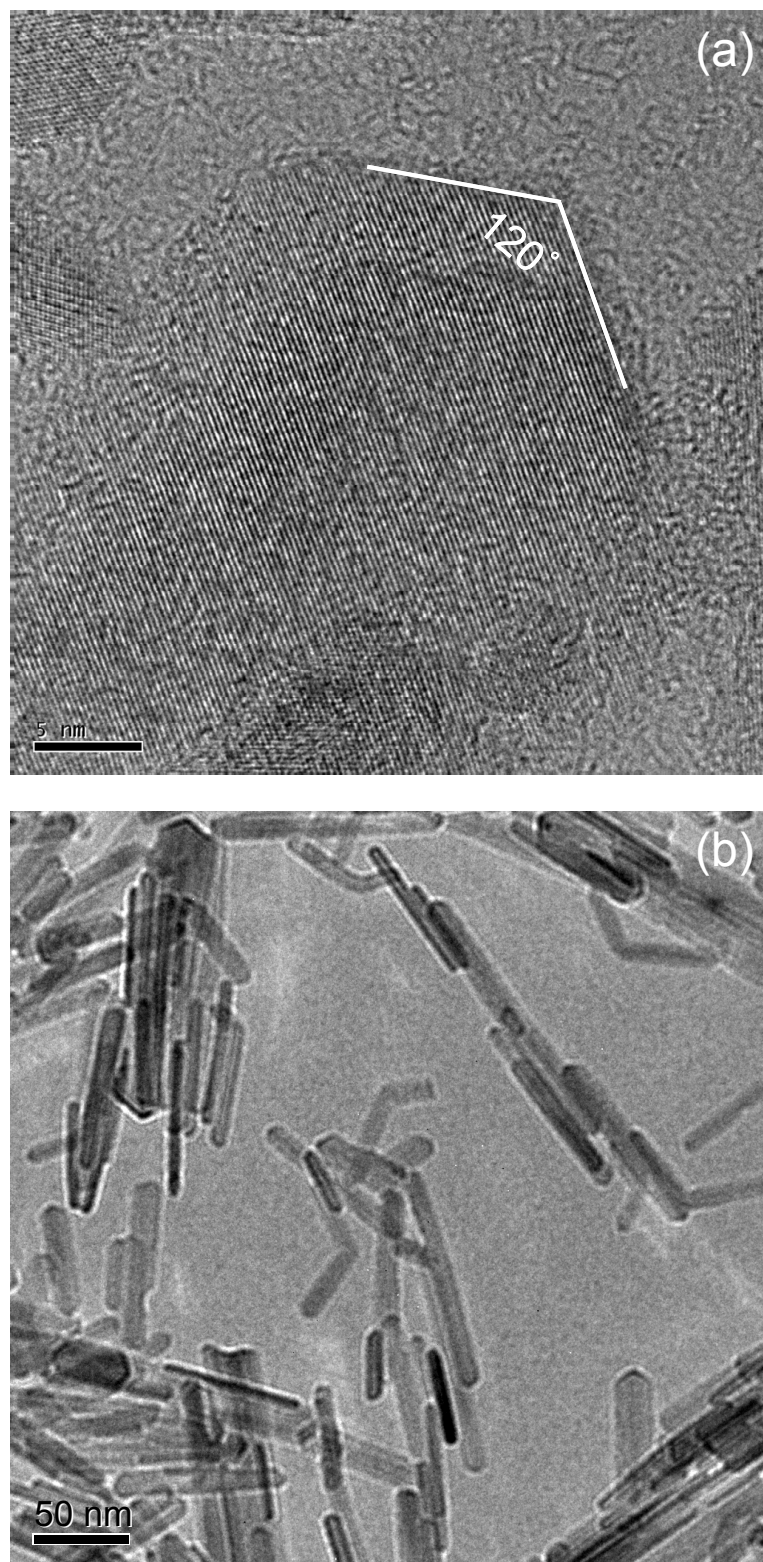


Figure S3

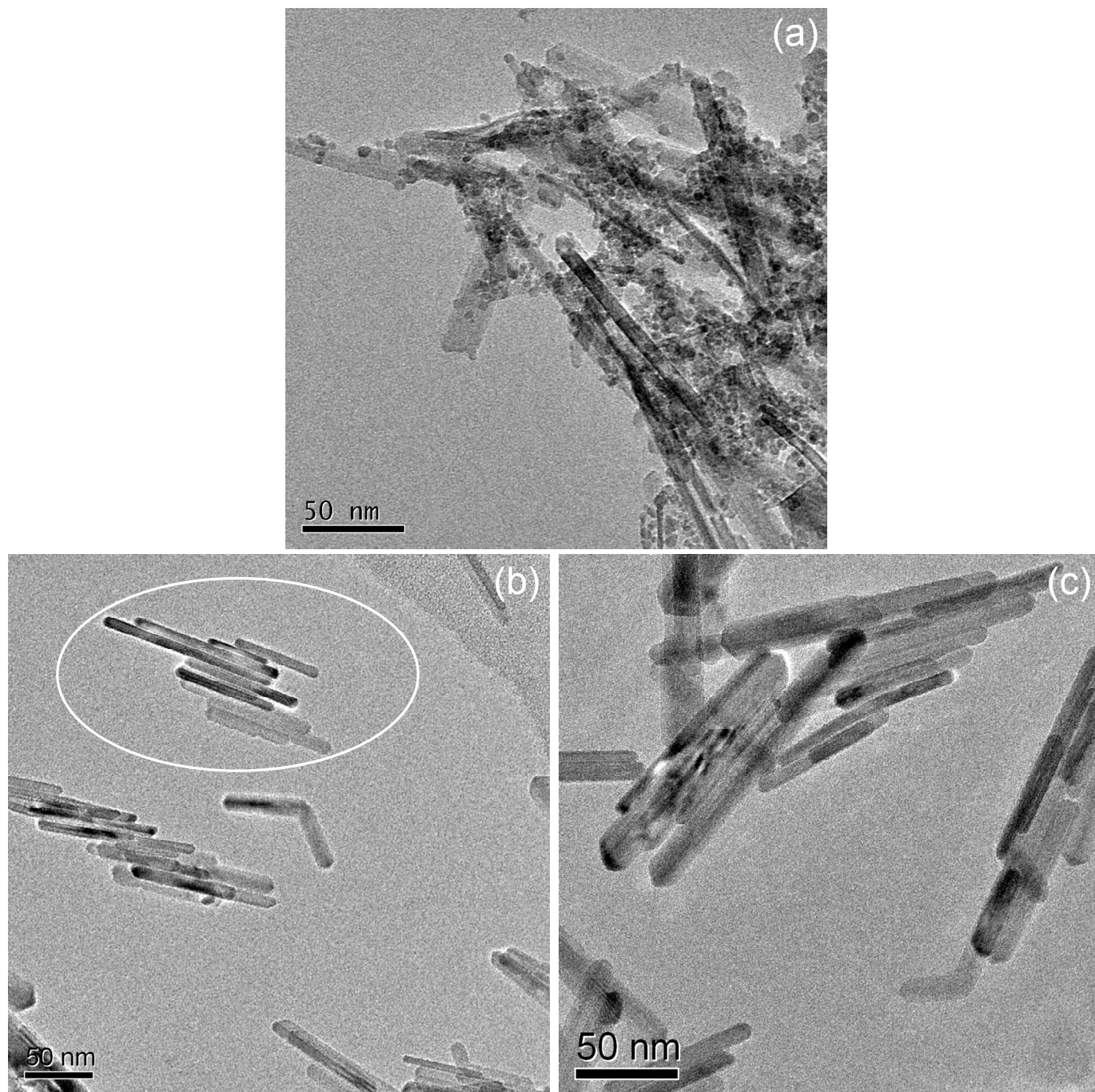


Figure S4 (a, b, c)

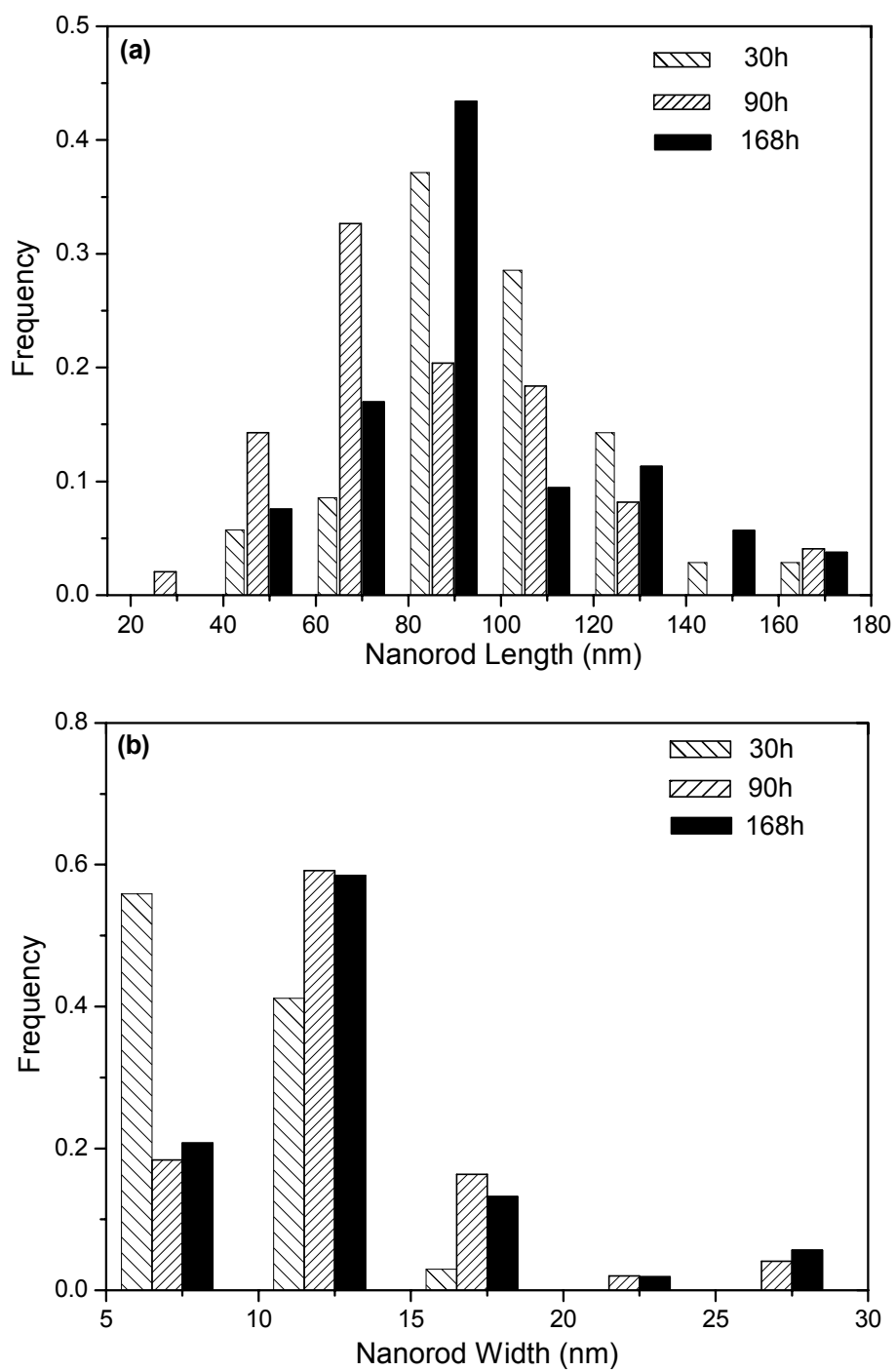


Figure S5 (a, b)