

**Electronic Supplementary Information**

# Crystalline Nanoparticle Aggregation in Non-Aqueous Solvents

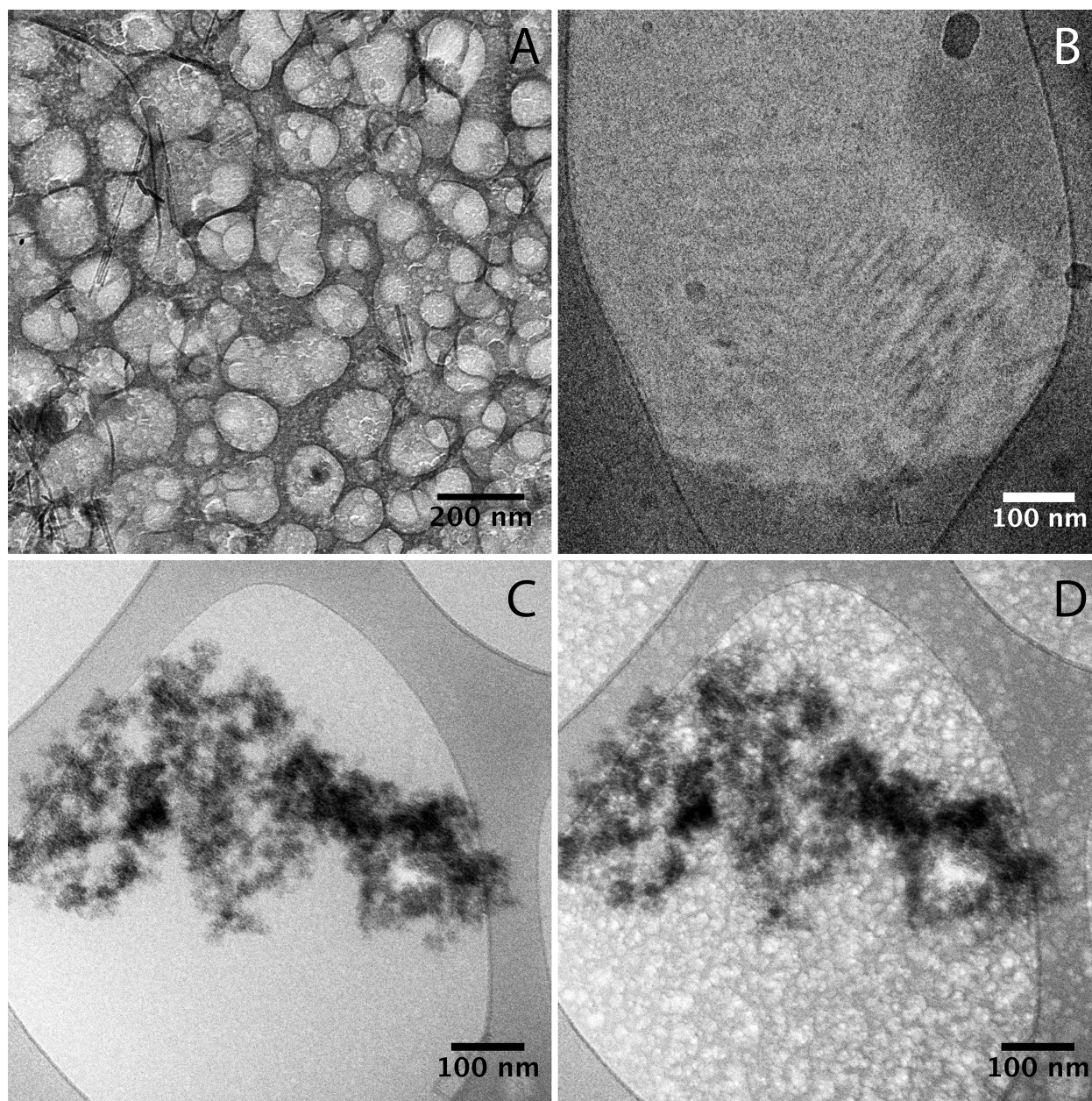
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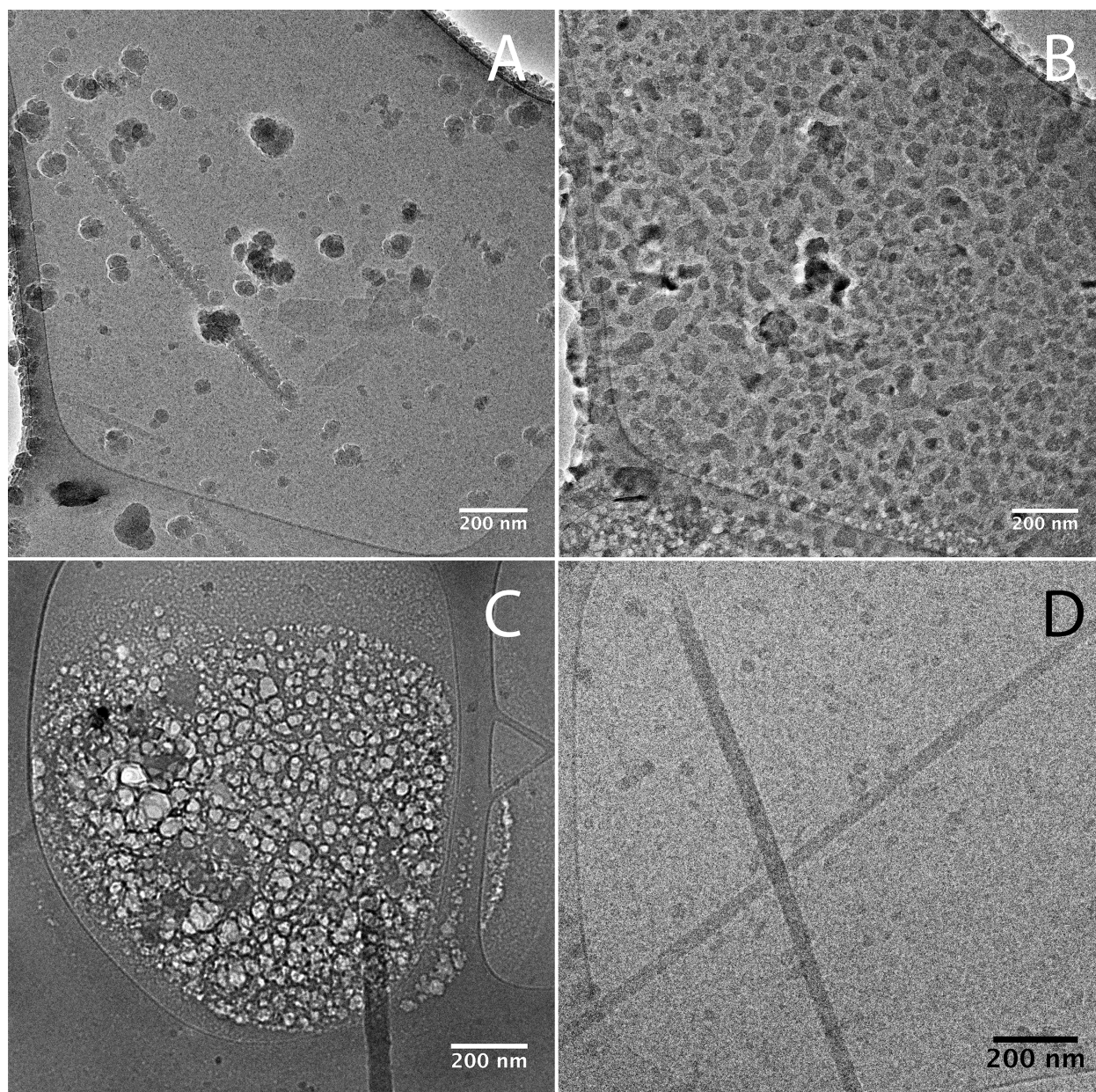
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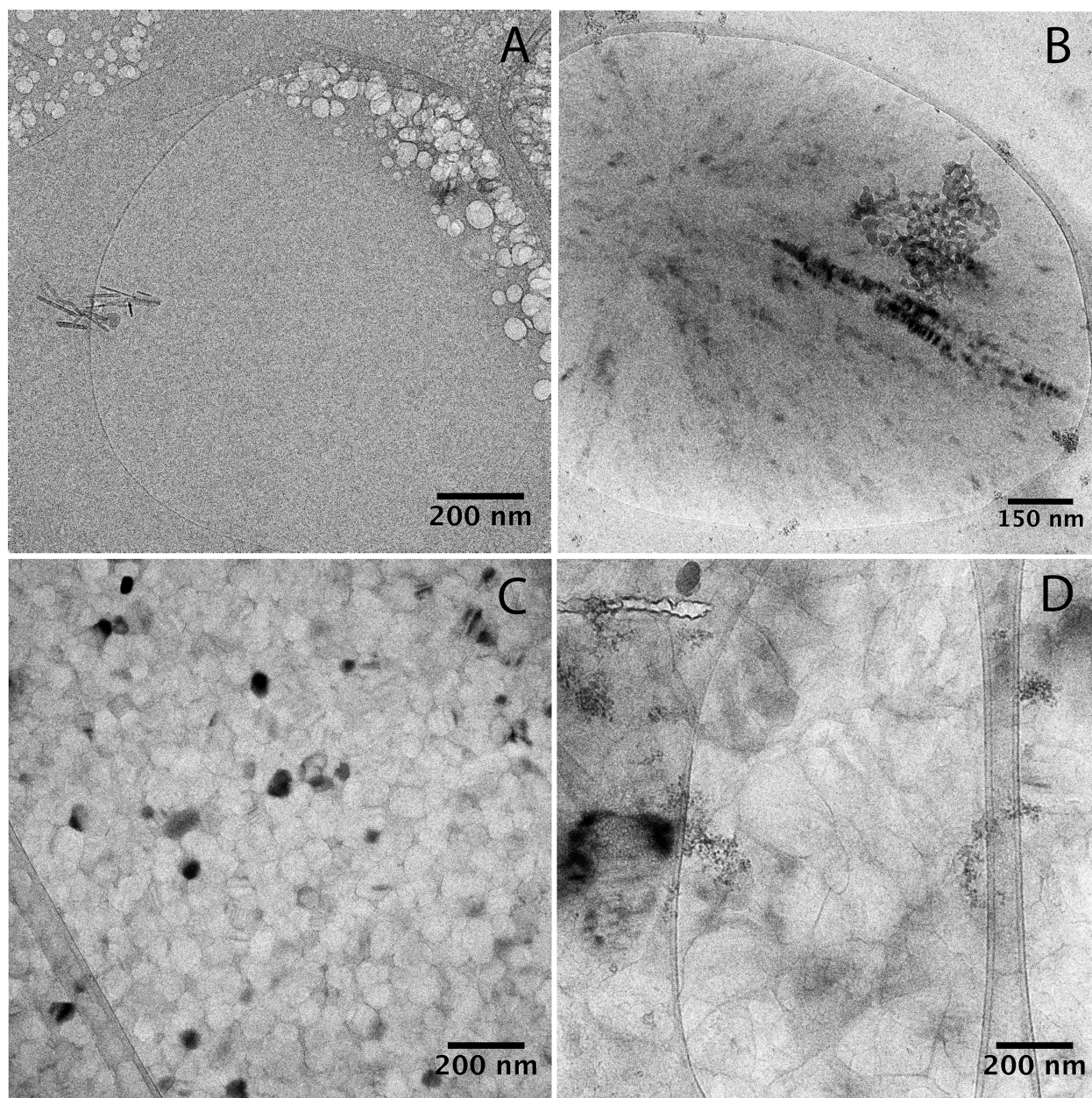
**ESI Figure 1** Cryo-TEM images of artifacts in isopropyl alcohol samples including A) bubble / void formation in a goethite sample, B) crystallization most likely caused by local lower cooling rates (e.g., by entrained air bubbles during plunging) in a ferrihydrite sample, and C) before and D) after beam damage causing void formation in a ferrihydrite sample.





**ESI Figure 2** Cryo-TEM images of artifacts found in acetic acid samples of ferrihydrite including A) acicular crystals before sublimation and B) after sublimation, C) beam induced radiolysis damaging both the amorphous film and acicular crystals, and D) acicular crystals in a pure acetic acid only sample.





**ESI Figure 3** Cryo-TEM images of artifacts found in tetrahydrofuran samples of goethite suspensions including: A) beam damage resulting in void formation and B, C, & D) various manifestations of crystallization most likely caused by local lower cooling rates (e.g., by entrained air bubbles during plunging).