Structural Transformation of Li-Excess Cathode Materials via Facile Preparation and Assembly of Sonication-Induced Colloidal Nanocrystals for Enhanced Lithium Storage Performance

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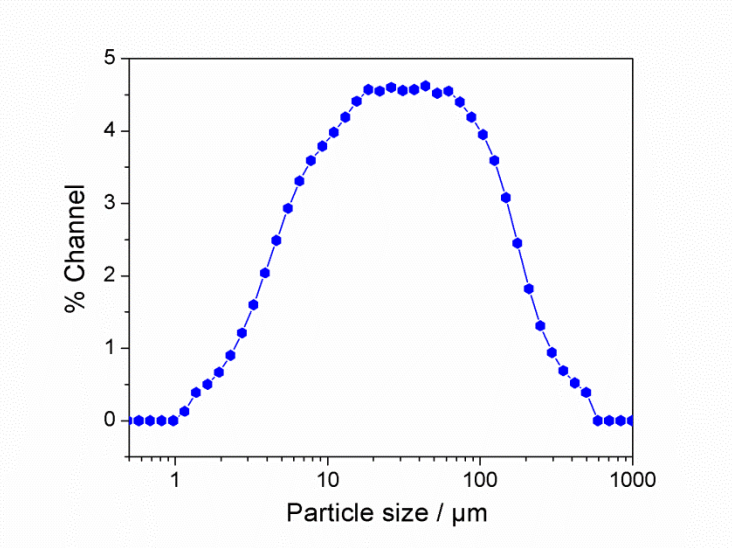

Figure S1. Particle size distribution of the as-prepared LMNCO powders.

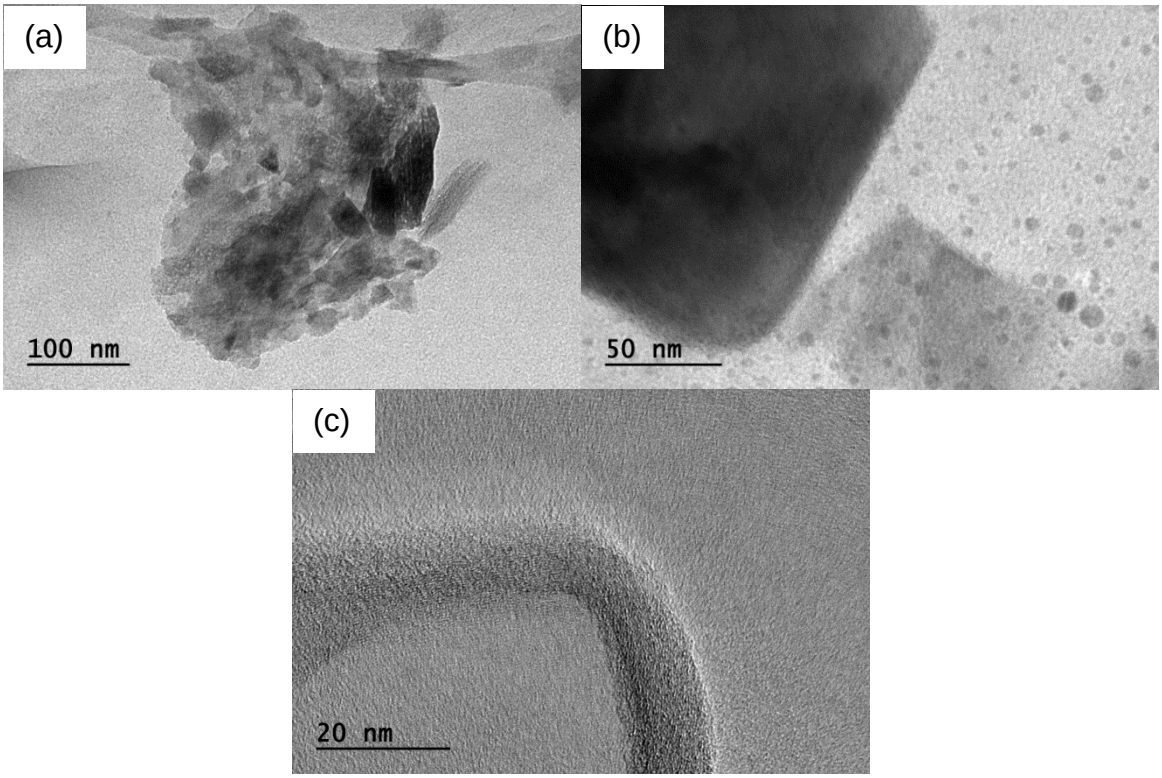

Figure S2. TEM images of (a) dominant LMNCO nanocrystals, (b) LMNCO monocrystals and (c) contorted crystal LMNCO grains obtained from a colloidal system with a dispersion concentration of 0.5 mg/mL.

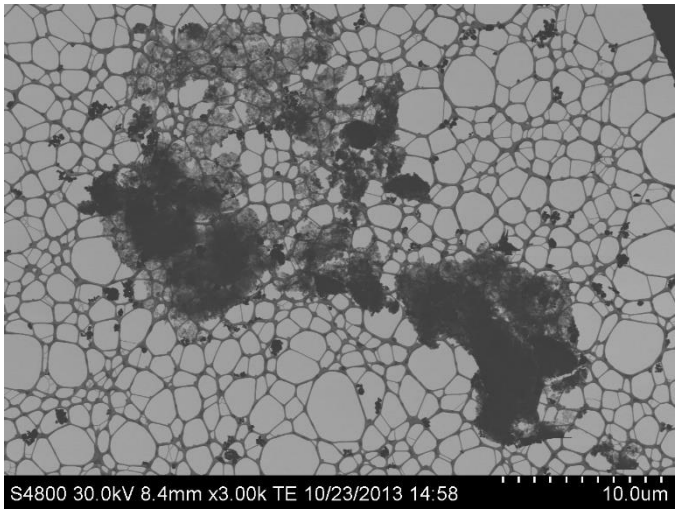

Figure S3. Scanning transition electron microscopic (STEM) image of a composite structure resulted from self-assembly of LMNCO colloids on carbon-coated Cu grid at 80°C from a colloidal system with dispersion concentration of 0.5 mg/mL.

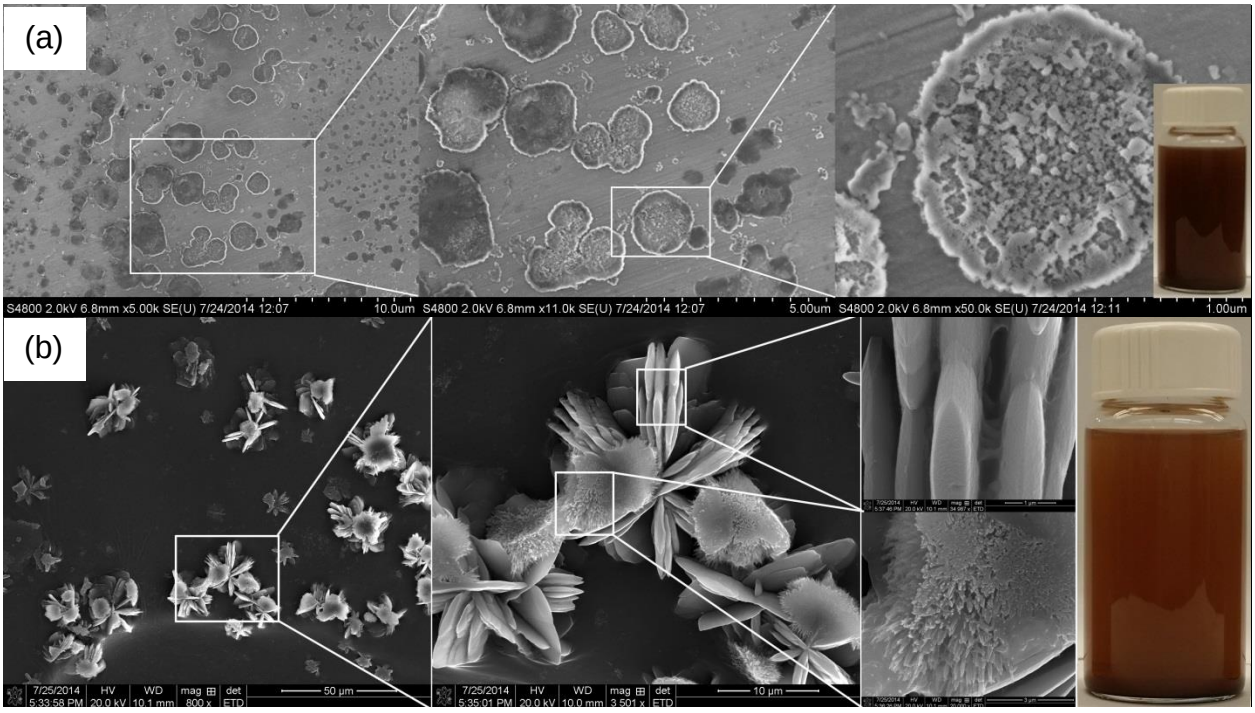

Figure S4. SEM images of superstructures assembled from LMNCO colloidal system with a dispersion concentration of 2.5 mg/mL at room temperature prepared in (a) DI water, and (b) methanol with an inserted photo showing corresponding colloidal dispersion.

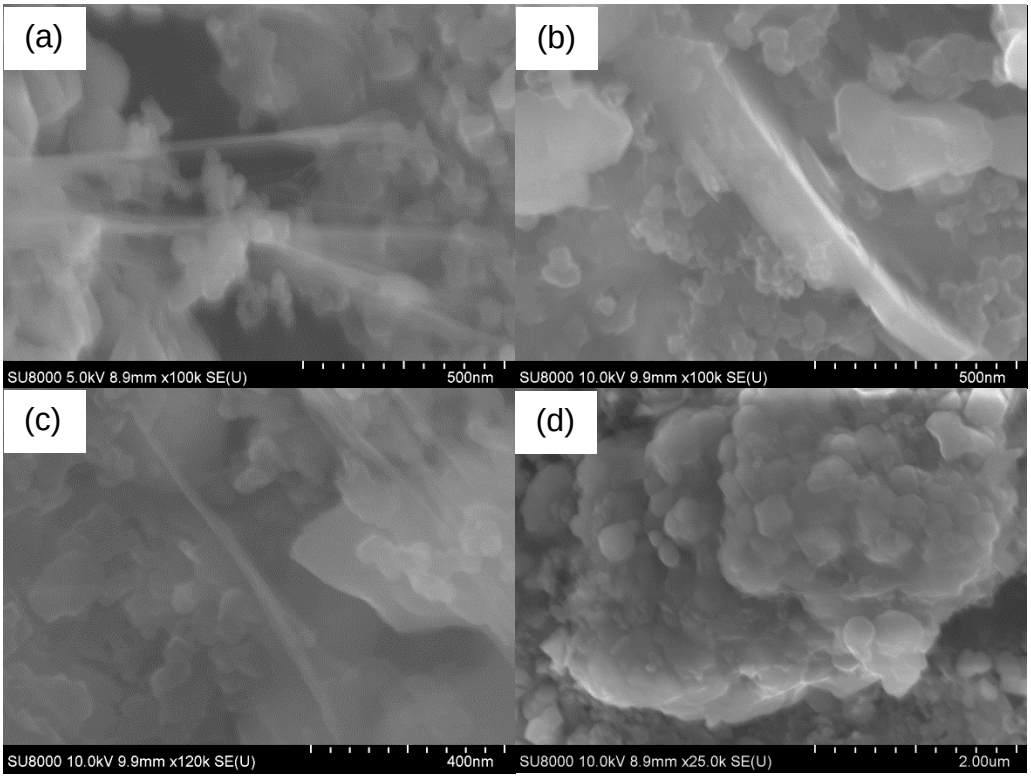

Figure S5. SEM images of well-preserved LMNCO-SA nanostructures in the as-prepared electrodes after mixing with carbon black and PVDF binder, in consistent with that in Figure 4: (a) nanofibers, (b) regular-shaped block, (c) nanosheets, (d) aggregates of particles.