Supporting Information

Structural evolution of amorphous calcium sulfate nanoparticles into crystalline gypsum phase

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This material includes

Calculation of Supersaturation Index.

Fig. S1. Spheroidal particles with an amorphous structure.

Fig. S2. HR-TEM image of particle 4 with prevalent growth of crystalline domains.

Calculation of Supersaturation Index. The saturation indexes (SI) for the three crystalline phases of calcium sulfate on the condition of mixing of the preheated $CaCl_2$ (3.0 M, 115 mL, 90 ^oC) and $NaSO_4$ (50 mM, 10 mL, 90 ^oC) solutions were calculated with PHREEQC. The solubility data used and the calculated SI values are as follows:

Phase	SI**	log IAP	log K(363 K, 1 atm)
Anhydrite	1.61	-3.51	-5.12
Bassanite	1.254	-3.56	-4.814
Gypsum	1.013	-3.71	-4.723

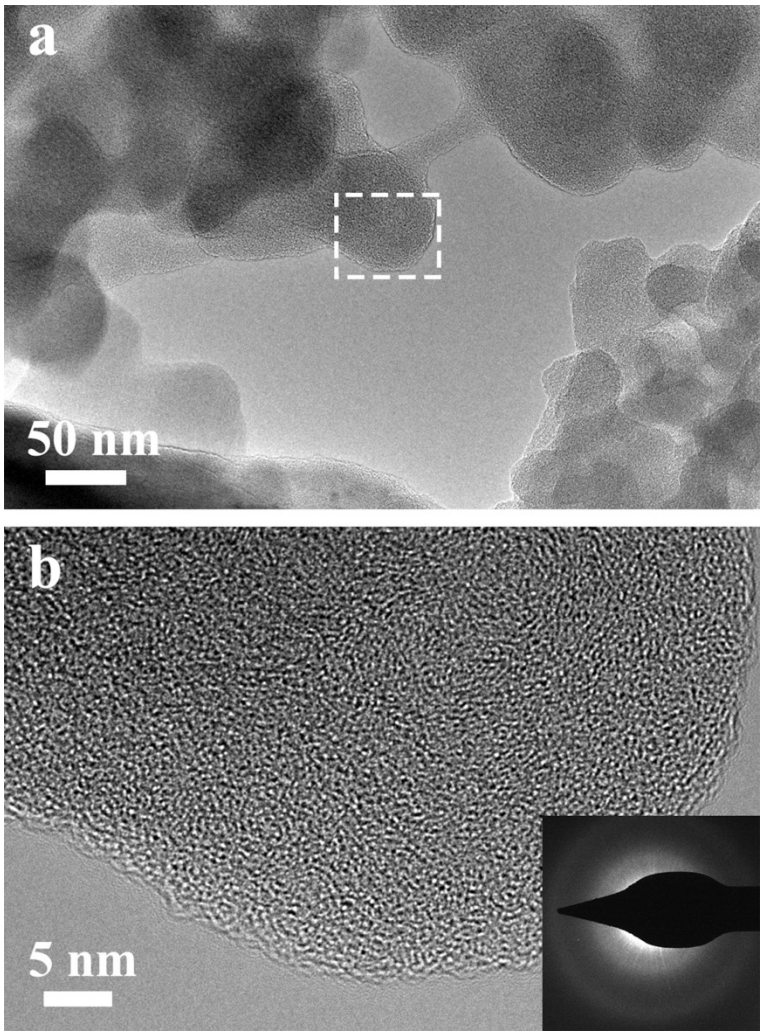

Fig. S1 Spheroidal particles with an amorphous structure. (**a**) TEM image of the particles precipitated at $CaSO_4$ concentration of 5.52 mM and reaction time of 10 min. (**b**) HR-TEM image of the particle marked by white square in (**a**) and low-dose SAED pattern (inset). It is confirmed that the attached particles are amorphous and no nanocrystalline domain is formed.

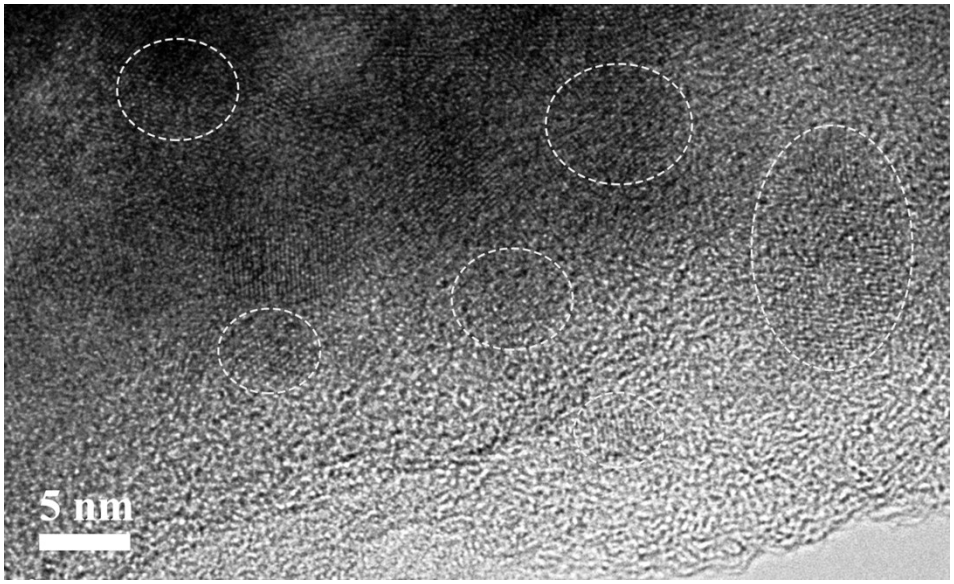

Fig. S2 HRTEM image of gypsum particle with prevalent growth of crystalline domains. The areas highlighted by white curves show that the isolated crystalline domains grow close to each other with multiple crystallographic orientations of the lattice fringes.