Supporting Information

Synthesis and Characterization of Perovskite PbTiO3 Nanoparticles with Solution Processibility

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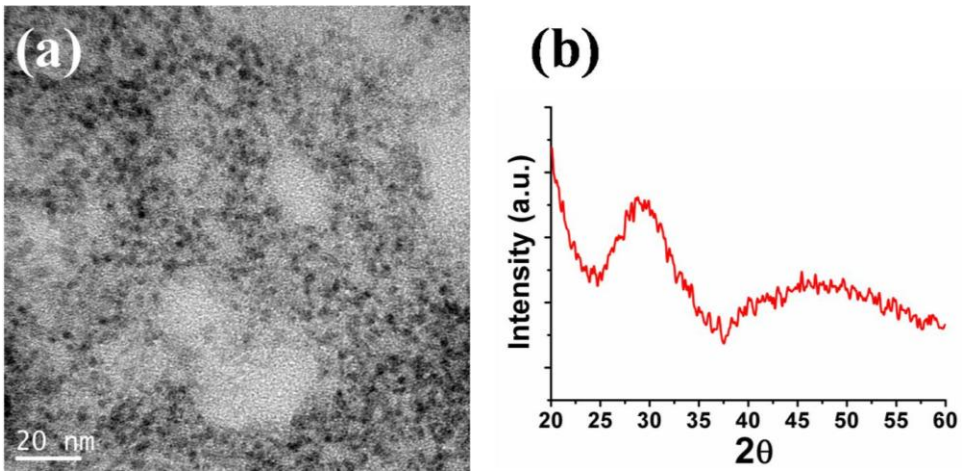


Fig. S1 Characterization of $PbTiO_3$ nanoparticles obtained after heating at 200°C for 48 hr with the presence of oleic acid. (a) TEM image; and (b) XRD pattern.

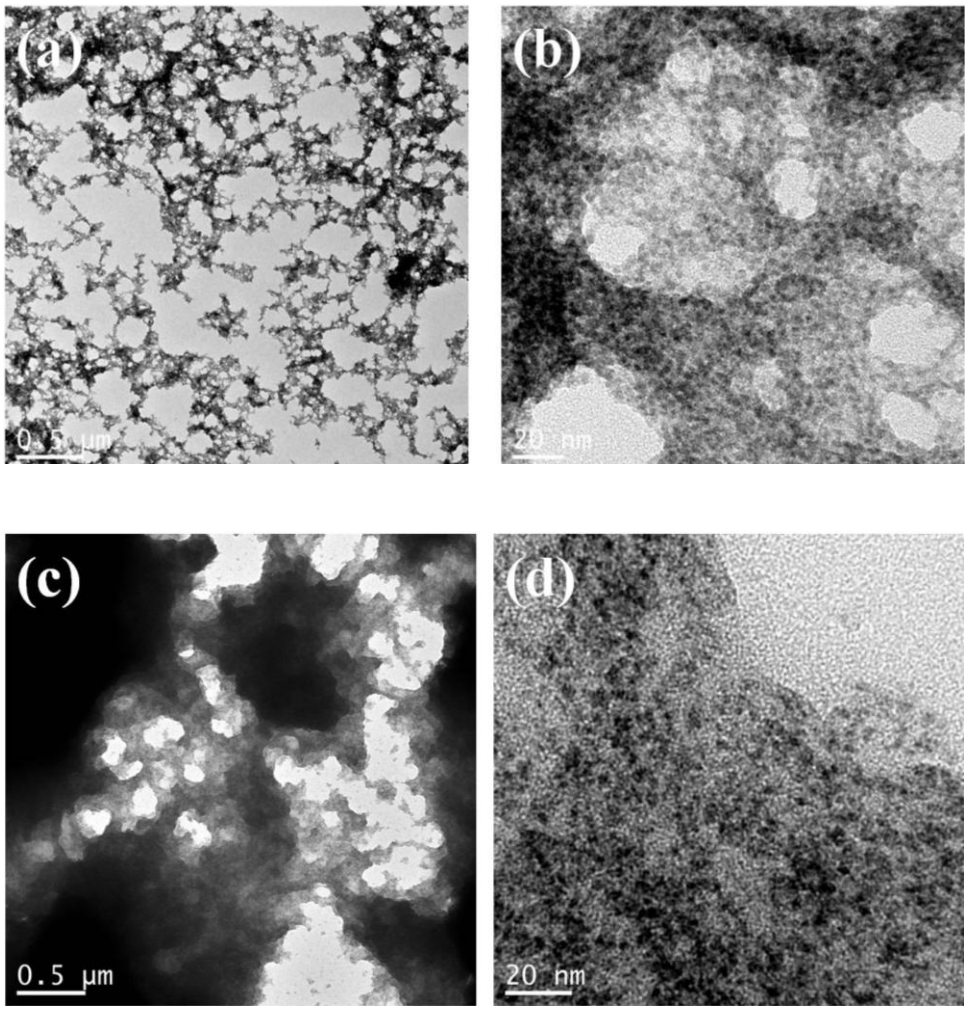


Fig. S2 TEM images of $PbTiO_3$ nanoparticles obtained after heating at 200°C for 2 hr *without* the addition of oleic acid. (a) and (b): nanoparticles aggregated in ethanol; (c) and (d): nanoparticles aggregated in toluene.

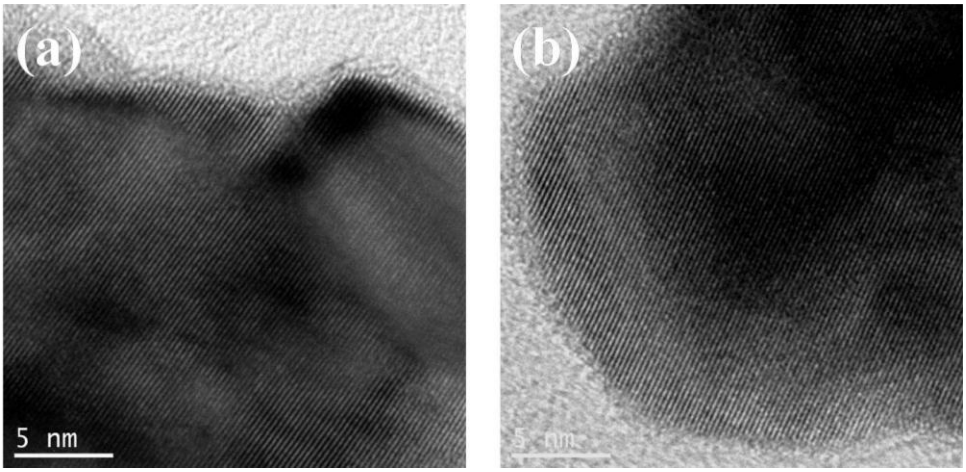
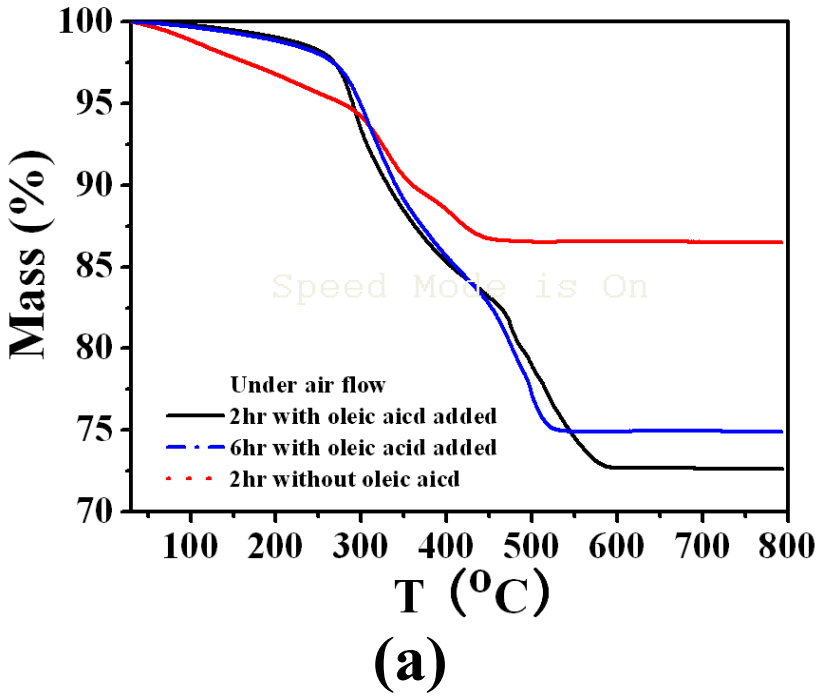
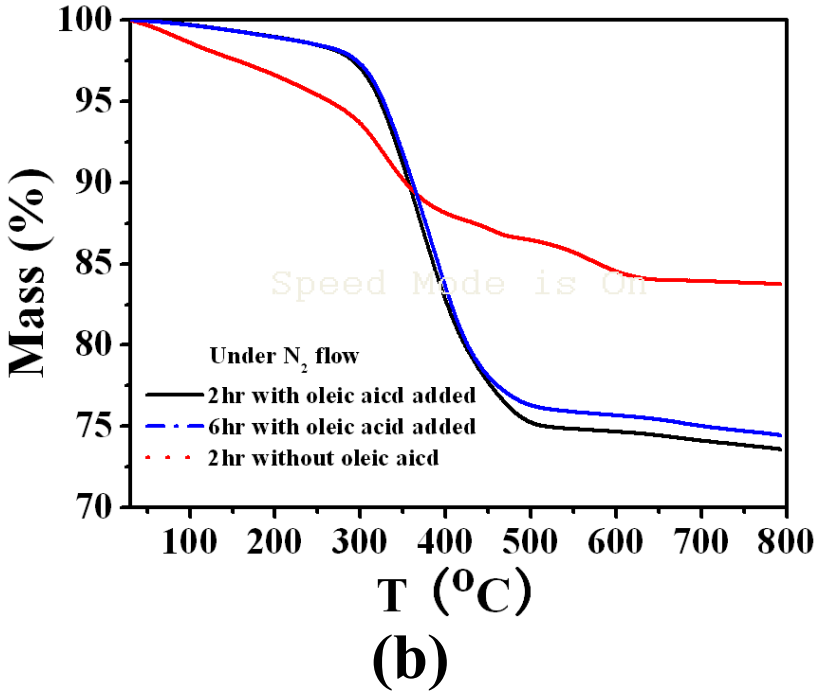


Fig. S3 High resolution TEM images of $PbTiO_3$ nanoparticles annealed at 500°C for 10 min. (a) particles obtained after heating at 200°C for 2 hr *with* the oleic acid utilized as surface capping ligand; (b) particles obtained after heating at 200°C for 2 hr *without* the addition of oleic acid. To prepare samples for TEM characterization, annealed $PbTiO_3$ nanoparticles were dispersed in ethanol by ultrasonication, followed by drop casting the suspension on carbon coated copper TEM grid and allowed to dry in air.


Mass (%)
T (°C)
Under air flow
2hr with oleic aicd added
6hr with oleic acid added
2hr without oleic aicd
Speed Mode is On

(a)


Mass (%)
T (°C)
Under N2 flow
2hr with oleic aicd added
6hr with oleic acid added
2hr without oleic aicd
Speed Mode is On

(b)

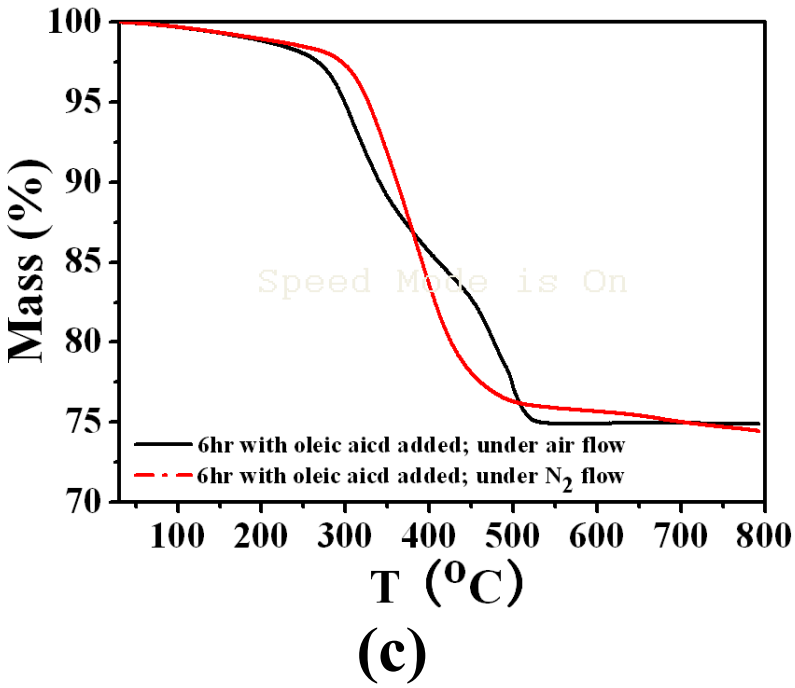


Fig. S4 TGA measurements on fresh $PbTiO_3$ nanoparticles under air flow (back curve) and N_2 flow (red curve). (a) TGA curves of particles under air flow; (b) TGA curves of particles under N_2 flow; (c) TGA curves of particles obtained after heating at 200°C for 6 hr *with* the oleic acid used as surface capping ligand; and (d) TGA curves of particles obtained after heating at 200°C for 2 hr *without* the addition of oleic acid.