

Correction to Hydrophobic Nanoparticle-Based Nanocomposite Films Using *In Situ* Ligand Exchange Layer-by-Layer Assembly and Their Nonvolatile Memory Applications

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The adsorption mechanism of LbL-assembled [amine (NH_2)-functionalized dendrimer/oleic acid (OA)-stabilized BaTiO_3 NP] $_n$ multilayers is not based on *in situ* ligand exchange between NH_2 groups of dendrimer and OA stabilizers. Therefore, BaTiO_3 NPs should be removed in the text. Correspondingly, we make five corrections in the text as follows.

Page 143, Abstract, second paragraph: “For example, inorganic NPs (including Ag, Au, Pd, Fe_3O_4 , MnO_2 , BaTiO_3) dispersed in organic media” should read “For example, inorganic NPs (including Ag, Au, Pd, Fe_3O_4 , MnO_2) dispersed in organic media”.

Page 145, column 1, second paragraph: “As previously mentioned, these hydrophobic stabilizers (OA, PA, or TOA) in a nonpolar solvent produce large quantities of a variety of metal (*i.e.*, Ag, Au, or Pd) and metal oxide (*i.e.*, Fe_3O_4 , MnO_2 , or BaTiO_3) NPs with uniform sizes and in high concentrations.” should read “As previously mentioned, these hydrophobic stabilizers (OA, PA, or TOA) in a nonpolar solvent produce large quantities of a variety of metal (*i.e.*, Ag, Au, or Pd) and metal oxide (*i.e.*, Fe_3O_4 or MnO_2) NPs with uniform sizes and in high concentrations.”

Page 147, column 2, third paragraph: “The versatility of our approach was tested in a qualitative investigation of the vertical growth of LbL nanocomposite multilayers prepared with a variety of well-defined metal NPs (5 nm PA- Ag_{NPs} , 6 nm TOA- Au_{NPs} , and 6 nm TOA- Pd_{NP} ⁴⁸) or transition metal oxides (7 nm OA- Fe_3O_4 , 6 nm TOA- MnO_2 ,⁵² and 7 nm BaTiO_3 ⁵³).” should read “The versatility of our approach was tested in a qualitative investigation of the vertical growth of LbL nanocomposite multilayers prepared with a variety of well-defined metal NPs (5 nm PA- Ag_{NPs} , 6 nm TOA- Au_{NPs} , and 6 nm TOA- Pd_{NP} ⁴⁸) or transition metal oxides (7 nm OA- Fe_3O_4 and 6 nm TOA- MnO_2 ⁵²).”

Page 150, column 2, last paragraph: “In a future publication, we will show that high-performance energy harvesting film devices using BaTiO_3 , and catalytic colloids using noble metal NPs and enzymes can be readily prepared using our approach.” should read “In a future publication, we will show that high-performance energy harvesting film devices using TiO_2 , and catalytic colloids using noble metal NPs and enzymes can be readily prepared using our approach.”

Page 151, column 1, middle paragraph (the following should be removed from the text):

“**Synthesis of OA- BaTiO_3 .** Barium titanium glycolate was first prepared for OA- BaTiO_3 NPs. In a 250 mL round-bottom flask, 78 mmol of barium oxide fine powder (97%, Aldrich) was added to 60 mL ethylene glycol. The reaction mixture was stirred vigorously until the added fine powder was dissolved and then diluted with 80 mL 2-propanol. Titanium isopropoxide (18 mL, 97%, Aldrich) was then added to the reaction mixture with vigorous stirring for 1 h. The product precipitated from solution was collected by centrifugation, washed with 2-propanol, and dried in a vacuum.

After synthesized barium titanium glycolate, OA- BaTiO_3 NPs were prepared as followed in a 250 mL three-neck flask, a mixture of 50 mL diphenyl ether and 5–45 mmol OA was dried at 120 °C for 1 h under an argon atmosphere with vigorous stirring. After the mixture was cooled to 100 °C, 5 mmol barium titanate glycolate was added under vigorous stirring until the added precursors dissolved. A 1.8g aqueous solution containing 30% hydrogen peroxide was then injected into the mixture slowly. The mixture was maintained in a closed system at 100 °C and stirred under mild reflux with water for 48 h under an inverse micelle condition. After the reaction mixture was cooled to room temperature, the product was readily precipitated by adding excess ethanol to the reaction mixture. The resulting precipitate was isolated by centrifugation and repeated washed with ethanol to remove the surfactant residuals.”

The changes do not affect the reported trajectories and conclusions of the paper.

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