Erratum to: Synthesis and characterization of lanthanide-doped sodium holmium fluoride nanoparticles for potential application in photothermal therapy

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The authors did not realize that the presentations of some TEM images were incorrect. The versions of such figures and the corresponding text should be changed as follows.

- Page 393, the paragraph “TEM images in Figs. 2(a) and 2(b) show silica- and gold-decorated NaHoF₄:Yb³⁺,Er³⁺ NPs with an average size of 20–30 nm and they are well dispersed. Gold NPs of smaller size of 8–10 nm and darker in contrast can be clearly seen to be attached on the surface of the silica shell and the silica coating can be seen at the edge as a line. Figures 2(b) and 2(c) show HRTEM images with the *d* spacing of gold NPs as 0.238 nm corresponding to the (1 1 1) plane and the *d* spacing of NaHoF₄:Yb³⁺,Er³⁺ NPs as 0.316 nm corresponding to the (1 1 0) plane, respectively. This again confirms the presence of gold and single crystalline nature of gold and NaHoF₄:Yb³⁺,Er³⁺. The SAED pattern in Fig. 2(d) shows gold diffraction rings (2.363 Å) of randomly oriented particles and NaHoF₄:Yb³⁺,Er³⁺ diffraction rings (2.921 Å) indicating random distribution of NPs.” should read “The TEM image in Fig. 2(a) show silica- and gold-decorated NaHoF₄:Yb³⁺,Er³⁺ NPs with an average size of 20–30 nm and they are well dispersed. Gold NPs of smaller size of 8–10 nm and darker in contrast can be clearly seen to be attached on the surface of the silica shell and the silica coating can be seen at the edge as a line. Figures 2(b) and 2(c) show HRTEM images with the *d* spacing of gold NPs as 0.238 nm corresponding to the (1 1 1) plane and the *d* spacing of NaHoF₄:Yb³⁺,Er³⁺ NPs as 0.521 nm corresponding to the (1 0 0) plane. This again confirms the presence of gold and single crystalline nature of gold and NaHoF₄:Yb³⁺,Er³⁺. The SAED patterns in Fig. 2(d) show NaHoF₄:Yb³⁺,Er³⁺ diffraction rings (2.919, 2.273, 1.796 and 1.689 Å corresponding to (1 0 1), (1 1 1), (0 0 2) and (1 0 2) planes, respectively) indicating random distribution of NPs.”

- Page 393, the corrected Fig. 2 and corresponding legend is given below.

Fig. 2 (a) TEM image of gold-decorated silica-coated NaHoF₄:Yb³⁺,Er³⁺ NPs with the silica coating and gold particles marked. (b) HRTEM image showing the *d* spacing of gold. (c) HRTEM image showing the *d* spacing of NaHoF₄:Yb³⁺,Er³⁺ NPs. (d) SAED patterns of NaHoF₄:Yb³⁺,Er³⁺ NPs.

- Page 394, the paragraph “The SEM image in Fig. 4 displays the morphology of NaHoF₄:Yb³⁺,Er³⁺@PPy samples. The SEM picture shows that the PPy has a distinct cauliflower-like or tumor-like structure. TEM image in Fig. 5(a) shows NaHoF₄:Yb³⁺,Er³⁺ NPs with an average size of 30 nm and they are well dispersed. The PPy coating of approximately 3 nm in thickness is attached on the surface of the NPs which is shown by the presence of darker shades on larger disc like nanoplates. This is also shown as a circular edge on the NPs. The interplanar spacing of NaHoF₄:Yb³⁺,Er³⁺ NPs of 0.316 nm corresponds to the (1 1 0) plane as shown in Fig. 5(b) and confirms the excellent single crystalline nature of NaHoF₄:Yb³⁺,Er³⁺ NPs.” should read “The SEM image in Fig. 4 displays the morphology of NaHoF₄:Yb³⁺,Er³⁺@PPy samples. The SEM picture shows that the PPy has a distinct cauliflower-like or tumor-like structure. The TEM image in Fig. 5 shows NaHoF₄:Yb³⁺,Er³⁺ NPs with an average size of 30 nm and they are well dispersed. The PPy coating of approximately 3 nm in thickness is attached on the surface of the NPs which is shown by the presence of darker shades on larger disc like nanoplates. This is also shown as a circular edge on the NPs.”
- Page 394, the corrected Fig. 5 and corresponding legend is given below.

Fig. 5 TEM image of NaHoF₄:Yb³⁺,Er³⁺/PPy core-shell NPs.

The authors apologize to the reader.