CORRIGENDUM

# Corrigendum: Fluorescence and microwave-absorption properties of multi-functional ZnO-coated α-Fe solid-solution nanocapsules

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# Corrigendum: Fluorescence and microwave-absorption properties of multi-functional ZnO-coated $\alpha$-Fe solid-solution nanocapsules

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(Some figures may appear in colour only in the online journal)

An error from calculation methods occurred in figure 6 in the published article. The correct figure is displayed below.

Computational errors led to incorrect data. The related content in the last paragraph in section 3.3 should be corrected as follows:

Generally, excellent EM-wave absorption results from efficient complementarities between the relative permittivity and permeability in materials. Only magnetic loss (or only dielectric loss) leads to weak EM matching. To reveal further the microwave absorption properties, the RL values of the composite PA were calculated using the relative complex permeability and permittivity at a given frequency and thickness layer, according to equations (1) and (2). Figure 6 shows the variation of RL versus frequency for the composites PA. It is found that the minimum reflection loss reaches −16.5 dB at 11.8 GHz ($f_m$) with a matching thickness ($d_m$) of 6 mm, while the absorption range under −10 dB is obtained in 7.4–17.2 GHz with an absorber thickness of 2–6 mm. The permeability and permittivity, the EM impedance match, and the microstructure of the absorber determine the absorption properties of an absorber. The dielectric ZnO shell could increase the dielectric losses in the $\alpha$-Fe/ZnO nanocapsules. The ZnO shell as a magnetically inactive layer causes a demagnetizing field and cuts off the magnetic connection between magnetic components, which increases magnetic losses in the $\alpha$-Fe/ZnO nanocapules. The special core/shell structure of the nanocapsules with ZnO shell and ferromagnetic $\alpha$-Fe solid-solution core is the vital factor for the above phenomenon.

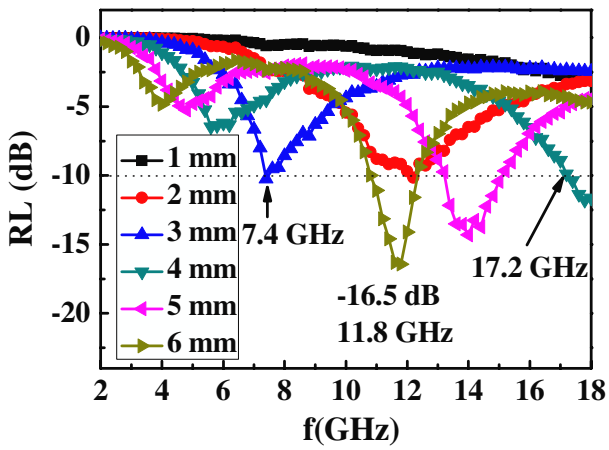


**Figure 6.** Frequency dependences of the RL for the composite PA at different thickness in the 2–18 GHz range.

Table 1 should be disregarded.

 