

Correction to the paper “Synthesis and magnetic properties of cobalt ferrite nanoparticles formed under hydro and solvothermal condition”

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ABSTRACT This paper is a corrigendum related to the article Vasil'ev B.V., Smyslov R.Yu., Kirilenko D.A., Bugrov A.N. Synthesis and magnetic properties of cobalt ferrite nanoparticles formed under hydro and solvothermal condition. *Nanosystems: Phys. Chem. Math.*, 2021, **12** (4), P. 492–504, <http://nanojournal.ifmo.ru/en/articles-2/volume12/12-4/chemistry/paper11/>

KEYWORDS single-domain cobalt ferrite, ferrimagnetic nanocrystals, size-controlled synthesis, stoichiometry, Rietveld refinement, coercive field, saturation magnetization, squareness

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In the paper [1], Fig. 3 contains a graphic misprint. The correct part (b) in this figure is given below.

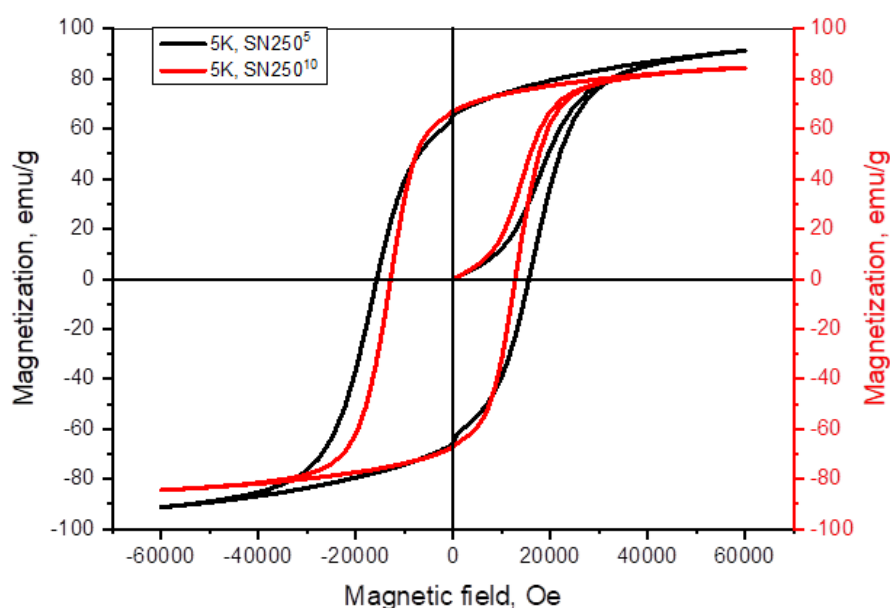


FIG. 1. The low-temperature magnetic hysteresis (M–H) loops for $\text{Co}_x\text{Fe}_{3-x}\text{O}_4$ nanoparticles synthesized under solvo- (a,b) and hydrothermal conditions (c)

In connection with the correction of Fig. 3(b) [1], it is necessary to correct a paragraph on p. 497. Now it should read like this:

Studies of the synthesized cobalt ferrite nanoparticles using SQUID magnetometry showed that their magnetization curves have hysteresis loops regardless of the type of precursor used, as well as the chosen conditions of hydrolysis and dehydration (Fig. 3, Table 3). It should also be noted that “constricted” hysteresis loops were recorded for cobalt ferrite nanoparticles obtained under hydrothermal conditions or in an organic solvent at temperatures of 150 and 200 °C (Fig. 3), which are typical for a mixture of soft and hard magnetic materials [1, 29, 30]. In this case, such a “necking” in the central part of the M–H loop can be explained by a small amount of superparamagnetic single-domain particles in ferrimagnetic $\text{Co}_x\text{Fe}_{3-x}\text{O}_4$ nanocrystals.

In Table 3 on Page 502 [1], the row titled “SN250⁵” should be now written as:

| | | | | | | | | | | | | |
|--------------------|------|------|----|-------|------|---|----|-----|---|---|----|---|
| SN250 ⁵ | 0.72 | 65.7 | 91 | 15700 | 0.09 | 7 | 77 | 245 | 0 | 0 | 65 | 0 |
|--------------------|------|------|----|-------|------|---|----|-----|---|---|----|---|

In ACKNOWLEDGMENTS, some information was omitted by the authors. Therefore, the correct version of the acknowledgments is given below.

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References

- [1] Vasil’ev B.V., Smyslov R.Yu., Kirilenko D.A., Bugrov A.N. Synthesis and magnetic properties of cobalt ferrite nanoparticles formed under hydro and solvothermal condition. *Nanosystems: Phys. Chem. Math.*, 2021, **12** (4), P. 492–504.

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Conflict of interest: the authors declare no conflict of interest.