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Erratum

Erratum to "Crystal structure and zinc location in the $BaZnFe_6O_{11}$ Y-type hexagonal ferrite" by Collomb et al. [J. Magn. Magn. Mater. 78(1) (1989) 77–84]

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In the paper "Crystal structure and zinc location in the $BaZnFe_6O_{11}$ Y-type hexagonal ferrite" by Collomb et al. [1], the detailed list of atomic positions gives the fractional coordinate location of the Me5 atom at the 18h symmetry site as *x*: 0.50317, *y*: –0.50317, and *z*: 0.19073 in a hexagonal cell. We believe this to be a typographical error, and that the fractional coordinate for the *z*-position should be approximately *z*: 0.109. The Y-type hexagonal ferrite has the space group symmetry R-3m. When this symmetry is applied to the positions given in the paper, using CrystalMaker software, the center to center distance between the Me5 atoms and the O5 atoms is only 0.27 A, an unrealistic number. In the paper, the closest-approach distance between Me5 and O5 atoms is listed as 2.048 A. Since the R-3m symmetry of the system is well-documented, the issue must lie with either the oxygen or metal atom fractional coordinate.

Since the oxygen positions are consistent with the placement of the other oxygen layers in the unit cell, the misalignment appears to be in the Me5 position. Another paper on Y-type hexagonal ferrites by the same group, with the same overall unit cell dimensions, but admittedly different ions (Mg as opposed to Zn), give the Me5 position as approximately 0.109 [2]. Using this value in the model of the Zn-containing Y-type hexagonal ferrite, we obtain a center to center approach of 2.07 A between the O5 and Me5 positions, acceptably close to the 2.048 A approach distance given in the paper. In addition, the paper by Townes et al. [3], which the Collomb paper states that it refines, has the 18h Fe position as 0.10967 in a hexagonal unit cell, in agreement with the suggested correction.

References

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