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CORRECTION

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Correction: Electronic structures and magnetic properties of the rare-earth-free permanent magnet α″-$Fe_{16}N_2$: first-principles calculations

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Correction for 'Electronic structures and magnetic properties of the rare-earth-free permanent magnet α″-$Fe_{16}N_2$: first-principles calculations' by Peirun Duan *et al.*, *J. Mater. Chem. C*, 2025, **13**, 6728–6735, https://doi.org/10.1039/D4TC04934A.

The authors regret that an incorrect version of Fig. 6 was included in the published article. The corrected Fig. 6 is shown in this notice.

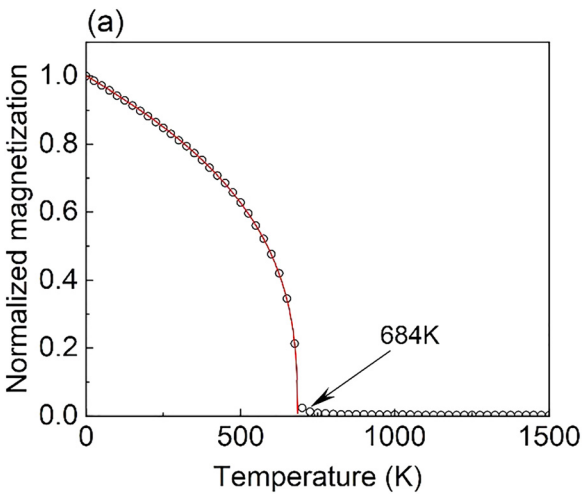

Fig. 6 Temperature-dependent magnetization curves for α″-$Fe_{16}N_2$.

The statistical analysis reported in the Results and discussion section should be updated accordingly: following eqn (2), the text "The estimated Curie temperature of the α″-$Fe_{16}N_2$ is 1369 K ... Therefore, the Curie temperature obtained in this work may be closer to the true Curie temperature of α″-$Fe_{16}N_2$." should be replaced with: "The estimated Curie temperature of α″-$Fe_{16}N_2$ in this work is 684 K, which is lower than the value of 813 K reported by Sugita *et al.*[1] This discrepancy may stem from the fact that Monte-Carlo (MC) simulations often target idealized bulk materials or perfect crystals, overlooking structural disorders, nitrogen atom ordering effects, and interface coupling phenomena inherent in real thin films. For reference, Bhattacharjee *et al.*[2] and Khan *et al.*[3] also obtained Curie temperatures of α″-$Fe_{16}N_2$ *via* the MC method, yielding 765 K and 820 K, respectively. Notably, the calculation of Curie temperature in MC simulations is highly sensitive to the input parameters of exchange integrals. Thus, the Curie temperature data presented in this work can serve as a valuable reference for the selection of exchange constants when calculating the Curie temperature of α″-$Fe_{16}N_2$ using the MC method."

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Consequently, the statements in the Abstract, Introduction and Conclusions section that the Curie temperature of α''-$Fe_{16}N_2$ is 1369 K, which is larger than that of pure bcc-Fe (1023 K), should be replaced with "The estimated Curie temperature of α''-$Fe_{16}N_2$ in this work is 684 K, which is much higher than the Curie temperature of the rare-earth permanent magnets NdFeB (585K).[4]"

The authors apologize to the readers and the scientific community for these errors and any confusion they may have caused.

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

References

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