Erratum and Addendum: "Low-temperature magnetic transition and high temperature oxidation in Inconel alloy 718" [J. Mater. Res. 11, 1133 (1996)]

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Temperature (5 K to 370 K) and magnetic field variations of the magnetic susceptibility of Inconel alloy 718 is presented.

The purpose of this note is to correct an error that appeared inadvertently in our above listed paper (quoted here as Ref. 2), published in this journal on the structural and magnetic properties of as-received and aged Inconel alloy 718. In Fig. 5 of the orginal paper, the ordinate label for the magnetization M, $M(10^{-3}$ emu/g), is incorrect; instead it should be M(emu/g). Also the plotted data in Fig. 5 are for the aged sample and not for the as-received sample as (incorrectly) listed in Ref. 1. The corrected data are shown in Fig. 1 here. The rest of the figures dealing with the magnetic properties in our paper, namely Figs. 3, 4, and 6, are correct and consistent with the data shown in Fig. 1 here. Because of the many applications of alloy 718, we take this opportunity to replot the temperature dependence of the magnetic susceptibility χ in Fig. 2 on a log–log scale so that values of χ versus T are more easily readable for different temperatures. Otherwise the data of Fig. 2 are identical to the data of Fig. 3 of our earlier paper. For reference, the magnitudes of χ (in units of 10^{-5} emu/g Oe) at 300 K are 8.5(1.65) for the as-received (aged) samples. Using the density $\rho = 8.2$ g/cm^3, these values of χ yield the initial permeability $\mu = 1.0087$ (1.0017) for the as-received (aged) samples. For the sake of completeness, the M versus H plots for the as-received sample are given in Fig. 3. These data were not published in Ref. 1.

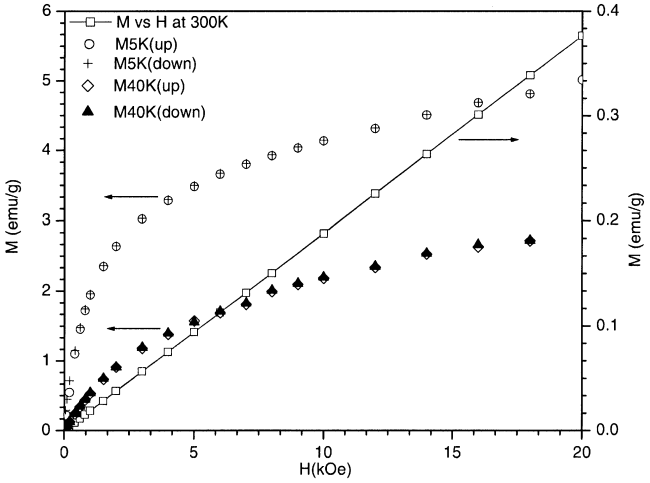

FIG. 1. Magnetization M versus applied field H for the aged 718 alloy at 300, 40, and 5 K. The data show no hysteresis.

ACKNOWLEDGMENTS

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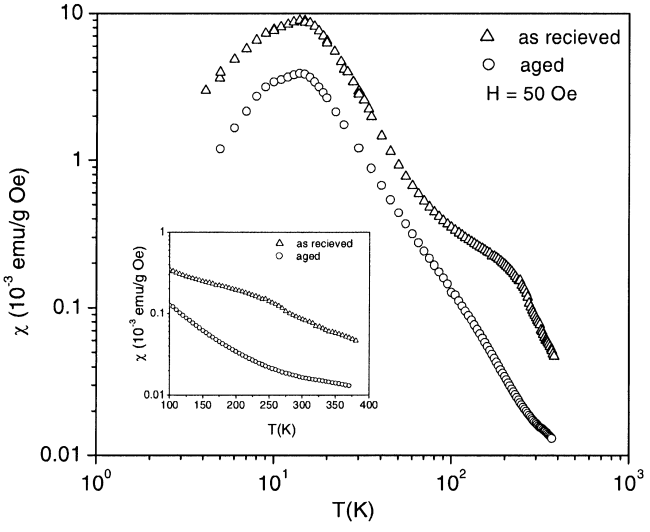

FIG. 2. Temperature dependence of magnetic susceptibility χ of as-received and aged alloy 718. The inset shows the data for the higher temperatures.

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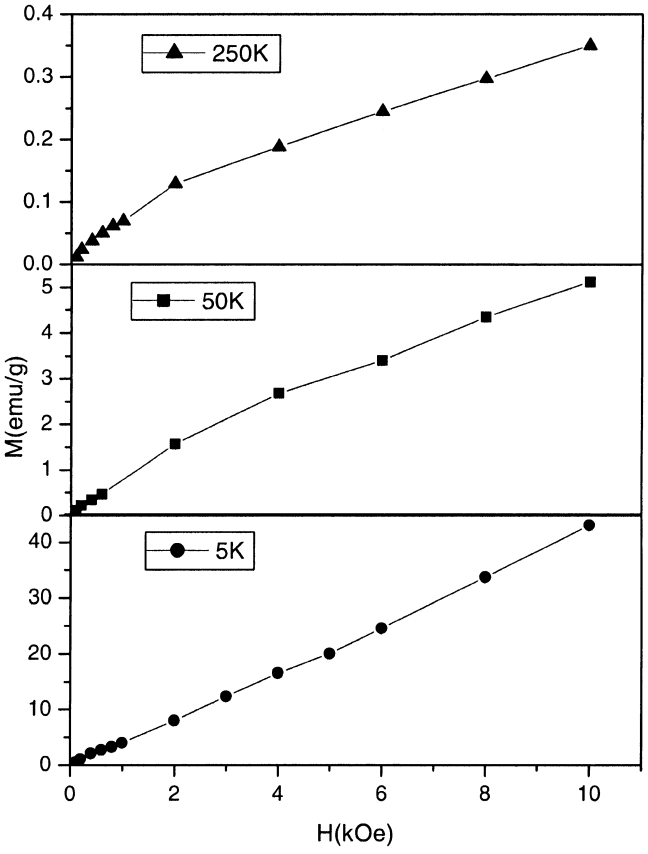

FIG. 3. Plots of the magnetization *M* versus the applied field *H* for the as-received sample at three temperatures shown. The lines joining the points are for visual clarity.