B. Bulk Magnetization

As shown in Fig. 1, the average magnetic hyperfine field varies with temperatures above $T/T_s \approx 0.65$ according to a Brillouin function with $J=1$. The results obtained from the measurements of the bulk magnetization as a function of temperature agree with the hyperfine field variation between room temperature and liquid-helium temperature. With the experimental information available now, it is not clear how much significance should be attached to the fact that the experimental curve follows $J=1$ curve at temperatures not far from the Curie point.

The slight reduction in magnetic moment compared to pure iron (2.22$\mu_B$) can be explained in terms of addition of electrons from the phosphorus and carbon atoms to the 3$d$ band in iron. This is also the model used to explain the nonunique hyperfine field. It is known that the addition of both carbon and phosphorus to iron reduces the magnetic moment per iron atom, e.g., $Fe_2P$ has a moment of 1.84$\mu_B$/iron atom and $Fe_5P$, $Fe_3P$, and $Fe_2C$ have moments of 1.32, 0.36, and 2.015 $\mu_B$/iron atom, respectively.\textsuperscript{13} The observed positive isomer shift (0.19 mm/sec) with respect to pure iron is consistent with the explanation just proposed.

The Curie temperature of the amorphous $Fe_{80}P_{12.5}C_{7.5}$ is about 60% lower than that of pure iron, indicating that the size of the exchange integral must be considerably reduced. Although the average nearest-neighbor distance (2.6 \AA) is about the same as in iron (2.48 \AA), it is known from the radial distribution function that there is a spread of about ±0.5 \AA in its value which might give rise to a net reduced exchange integral.

In summary, the results of magnetization and hyperfine field measurements definitely indicate that the amorphous alloy $Fe_{80}P_{12.5}C_{7.5}$ is ferromagnetic. The magnetization of such an alloy varies with temperature in the same way as that of a crystalline ferromagnet, i.e., essentially according to a Brillouin function with a relatively well-defined Curie temperature. Although the magnetic moment is only slightly smaller than that of pure iron, the Curie temperature is greatly reduced, possibly because of the lack of strict periodicity in the atomic arrangement.

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Electron Paramagnetic Resonance of Gd$^{3+}$ in YVO$_4$

JACK ROSENTHAL [Phys. Rev. 164, 363 (1967)]. The expression for $H_{1/2}$ in Eq. (2) should be corrected. The coefficient of $P^2$ in brackets which has the form $[-][+]^{-1}$ should be $[-]^{-1}$. Also the crystal-field parameters in Eq. (2) are shown in magnetic field units, while in Eq. (3) energy units are used. The connection, of course, is the factor $g\beta$. We are grateful to Dr. J. Bronstein for pointing this out and also for the information that the errors in his paper (Refs. 6 and 7) had already been corrected in Phys. Rev. 139, AB1 (1965).

Anisotropic Lattice Dynamic Studies and Line Asymmetries in Mössbauer-Effect Doublet Spectra, H. A. STÖCKLER and H. SANO [Phys. Rev. 165, 406 (1968)]. In Eq. (1), $\lambda_\pm$ should read

$$\lambda_\pm = \left(3^{1/2} \mp (3+q^2)^{1/2}\right)/\eta.$$ 

In the last paragraph of the paper the typographical error $d(I_2/I_1)/dR$ should be corrected to read $d(I_2/I_1)/dT$.

Stress Effects on the Paramagnetic Resonance of Yb$^{3+}$ in ThO$_2$ and Ho$^{3+}$ in CaF$_2$, Z. SROUBEK, M. TACHIKI, P. H. ZIMMERMANN, and R. ORBACE [Phys. Rev. 165, 435 (1968)]. Recently we were able to measure the $\Delta g_L$ of Yb$^{3+}$ in ThO$_2$ stressed along the [001] axis. The experimental value $\Delta g_L = -(1.1 \pm 0.3) \times 10^{-6}$ per kg/cm$^2$ agrees in sign and roughly in magnitude with the calculated value shown in (39). The $\Delta g_L$ in (39) was calculated from (36) without any covalency (overlap) enhancement of the crystalline field terms. Such an enhancement was formally introduced in the case of Ho$^{3+}$ stressed along [111] by multiplying the fourth-order term by factor of 3. The same correction applied to (36) yields $\Delta g_L = -1.2 \times 10^{-6}$ per kg/cm$^2$, giving much better agreement with experiment.

Dynamic Polarization of Na$^{23}$ and F$^{19}$ in NaF Containing Fe$^{7+}$ Molecular Ions, J. J. HILL [Phys. Rev. 157, 204 (1967)]. In Fig. 3, replace $a$ by $c$. In Fig. 7, replace Eq. (23) by Eq. (32). The last line of Sec. VII D should read “Fig. 7” instead of “Fig. 8.”