and all other quantities in curly brackets form a single "package".

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*In equation (5), $F_k^{(\xi)} = F_k^{(\xi)}(\xi_1 \ldots y_1 | \sigma')$ for $K=1, \ldots 7$, and $F_8^{(\xi)} = F_8^{(\xi)}(\xi_1 \ldots y_i | \sigma)$.

[1] V. I. Grigor'ev, J. Exptl. Theoret. Phys. (U.S.S.R.) **30**, 873 (1956); Soviet Phys. JETP **3**, 691 (1956).

Translated by M. A. Melkanoff
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Concerning the Letter to the Editor by V. A. Krasnokutskii "Light from Aluminum Melts in an Electrolytic Bath"

Z. RUZEVICH
Polytechnic Institute Poland, Vrotslav

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IN the above mentioned letter to the editor[1], V. A. Kranokutskii discusses an interesting light effect observed during electrolytic oxidation of aluminum or of aluminum melts. However, the author erroneously states that this phenomenon was first discovered by him. Light emission from aluminum electrodes accompanying the formation of oxidation film in electrolytic solutions has been known for several decades, and is described in many monographs devoted to the technical application of anode oxidation of aluminum[2,3]. In addition, Dufford[4] investigated the light emission under discussion in the same electrolytes used by Krasnokutskii and partially obtained similar results. Krasnokutskiis' statement that light emission is not observed in oxide solutions is applicable only to certain acids, while considerable light emission is observed in H_3PO_4 and in different organic acids[4-6]. The influence of different impurities in the aluminum melt on the spectrum of the light was the subject of detail investigations by Guminski[6].

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[1] V. A. Krasnukutskii, J. Exptl. Theoret. Phys. (U.S.S.R.) **30**, 192 (1956); Soviet Phys. JETP **3**, 120 (1956).

[2] A. Jenny. *Die elektrolytische oxydation des aluminiums and seiner Legierungen* Dresden-Leipzig, 1938.

[3] M. Schenk. *Werkstoff aluminum and seine anodische oxydation*, Bern, 1948.

[4] R. T. Dufford, J. Opt. Soc. Am. **18**, 17 (1929).

[5] A. Gunterschultz and H. Betz, Z. Physik **74**, 681 (1932).

[6] K. Guminskii, Bull. Acad. Pol. Sci. Letters, Ser. A, 145, 457 (1936).

Translated by J. L. Herson
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Paramagnetic Resonance in Alkali Metals

N. S. GARIF'IANOV
Technical Physics Institute, Kazan Branch, Academy of Sciences, USSR

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PARAMAGNETIC absorption resonance due to electron conductivity in metals has been studied by a number of authors[1-4]. We have investigated the dependence of the width of the electron resonance absorption curve on the particle size of metallic lithium containing about 5% impurities of different metals. Measurements were made at frequencies of the oscillating magnetic field of 9350, 400, 225 91 and 35 mcs/s using samples in which the average particle size of lithium varied within wide limits. The method of investigation was described in an earlier work[4].

It was found that the width ΔH of the absorption resonance curve in metallic lithium at room temperature gradually decreases from 20 to 3 Oe with the decrease of the average metal particle size from ~ 50 to $\sim 0.1\mu$.

The width of the curve and the intensity of absorption in samples of lithium with average particle size $\sim 0.1\mu$ remain constant in the frequency range from 9500 to 35 mcs/s and at temperatures from 300 to 90°K. In samples of lithium with larger average size particles the width of the curve also does not depend on the frequency or temperature*, only a distortion in the form of the absorption resonance curve is observed[3,6] which depends on the ratio of the particle size to the depth of the skin layer (see Fig.).

It was successfully shown at the 35 mcs/s frequency that lattice spin relaxation time is increasing with decrease of particle size.

The g-factor value was determined in samples of average particle size of 0.1μ at a 9500 mcs. The value was $g = 2.002 + 0.002$.

In the sodium sample of average particle size 0.1μ and containing 5% impurities, the absorption resonance curve at room temperature has $\Delta H = 110$ Oe, $g = 2.002$ at all investigated frequencies. The