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Preliminary Report on the Optical Properties of Magnesium

M. E. Graber

pass through two stages of power amplification, and are used as the input to a special oscillator attached to the end of the rod. This oscillator is similar in principle and construction to the Fessenden oscillator used in submarine sound signalling. Vibrations which have a fair purity of tone, and which have a considerable intensity over a wide range of frequencies are obtained in the rod.

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PRELIMINARY REPORT ON THE OPTICAL PROPERTIES OF MAGNESIUM

M. E. GRABER

The present research on the optical properties of single magnesium crystals was carried forward in the laboratories of the University of Iowa under the direction of Prof. L. P. Sieg. Employing the crystelliptometer, plane polarized monochromatic light was reflected from the crystal surface and the resultant elliptically polarized light analyzed to determine the phase and azimuth angles of its components. The crystals were studied in two positions: parallel and perpendicular, respectively, to the principle axis of the crystal, and two sets of optical constants (index of refraction, absorption index and reflecting power) were determined. Within the range of wave lengths studied (4160-6500A), the indices of refraction were:

First position, 0.25 to 0.36; second position, 0.30 to 0.44. The reflecting powers ranged from 63% to 80%, and the absorption indices from 3.6 to 7.

ELECTRICAL CONSTANTS OF DIELECTRICS FOR RADIO FREQUENCY CURRENTS

R. V. GUTHRIE, JR.

The electrical constants of dielectrics are the power factor and the dielectric constant, the power factor being that of a carefully insulated condenser using the given material as the dielectric. Losses in a condenser may be represented either as a series or a parallel resistance. If considered as in series, the losses may be determined by resistance variation, and if in parallel, the geometric capacity may be determined. From a consideration of