Proceedings of the Iowa Academy of Science

Volume 44 | Annual Issue Article 46

1937

Wetting of Hot Metal Filaments by Molten Metals

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GROWTH CONDITIONS FOR ZINC CRYSTALS

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Previous work by Schilling [1] showed that additions of Cadmium were necessary to produce conditions favorable to growth of single crystals. The present work has to do with the effect of other impurities on growth conditions. At present it has been found, by using zinc with somewhat less iron impurity than Schilling's zinc but with the same addition of Cadmium, that the region favorable to growth is more like the original one of Hoyem and Tyndall and considerably different from Schilling's region.

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HYSTERESIS IN ZINC CRYSTALS

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Hanson found that crystals under bending stress showed a small amount of "elastic hysteresis." It appears now that this hysteresis is characteristic of the apparatus used by Hanson, since a slight modification abolishes this hysteresis.

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WETTING OF HOT METAL FILAMENTS BY MOLTEN METALS

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In making thin films of metal by evaporation it is often convenient to evaporate the metal from an incandescent metal filament. In order that evaporation may take place properly the molten metal being evaporated must wet the incandescent filament. The work previously reported on the wetting of metal filaments

[1] Physics, 5: 1(1934) and 6: 111(1935).

by molten metals has been extended to include tantalum as a filament material. This report brings the work up to date. It includes the following metals as filament materials: nickel, platinum, molybdenum, tantalum, and tungsten. The following metals were evaporated from the molten state: aluminum, silver, gold, copper, nickel, chromium, and platinum.

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OPTICAL EXCITATION OF MERCURY-HYDRIDE

L. O. Olsen

A mixture of mercury vapor and water vapor in a resonance tube is illuminated with, (1) a mercury and hydrogen discharge tube; (2) a mercury and helium discharge tube. Photographs of the fluorescent spectra show that some mercury hydride molecules are formed in the resonance tube.

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THE ZEEMAN EFFECT ON THE HYPERFINE STRUCTURE OF OPTICALLY EXCITED MERCURY RESONANCE RADIATION

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Optically excited mercury resonance radiation was used as a light source to provide the sharpest possible hyperfine structure lines of Hg. 2537. This light source was placed in magnetic fields varying from zero to 2000 gauss. A lummer plate and a camera with a special quartz lens was used to secure the Zeeman hyperfine structure patterns. The patterns were analyzed by the newly-installed micro photometer of the State University of Iowa. The measurements and theoretical interpretations are given. The experi-

