

FIG. 2. Sound velocity for shear waves in different crystalline directions as a function of temperature.

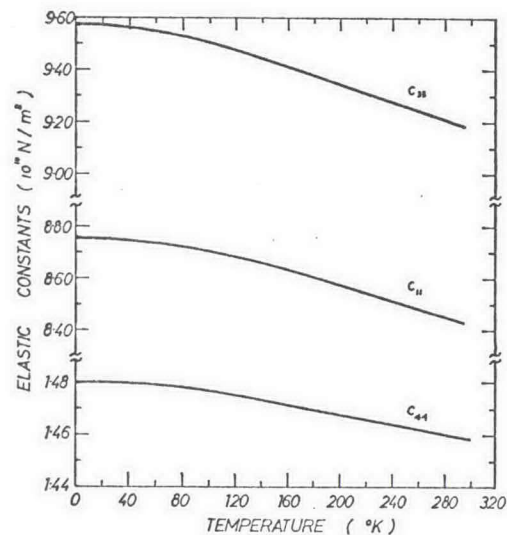


FIG. 3. The diagonal elastic constants as a function of temperature.

Cadmium sulfide is very close to being an isotropic material, as the values of the ratios c_{11}/c_{33} , c_{12}/c_{13} and $(2c_{44})/(c_{11}-c_{12})$ are all close to 1. Hence, the procedure devised by ANDERSON⁽¹⁶⁾ for evaluating the Debye temperature from the

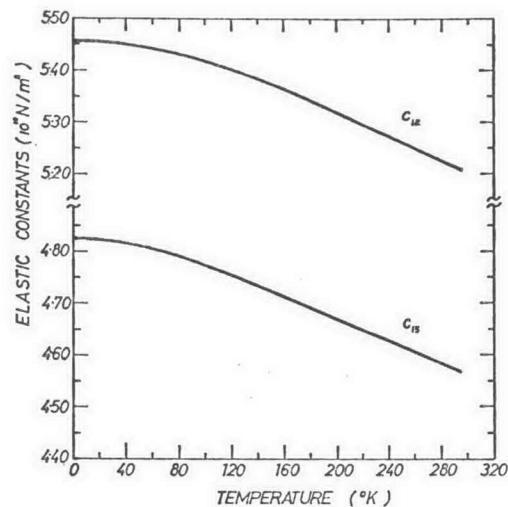


FIG. 4. The cross coupling elastic constants as a function of temperature.

isotropic Voigt-Reuss-Hill-Gilvarry average of the elastic constants is certainly applicable in the present case. Proceeding in this manner, the Debye temperature at 0°K is calculated to be 219.3°K. Unfortunately, low temperature specific heat data for CdS are not available, and thus no comparison can be made with the Debye temperature determined from specific heat data.

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