

A Test of Modified Indium Seal of a Window at Liquid Helium Temperature(Physics)

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order, can be interpreted in terms of a phonon anomaly and suggest incomplete cation-anion charge transfer in NMP-TCNQ.

Calculation of the Stacking Fault and Twin Boundary Energies of Body-Centered Cubic Sodium Metal Using Interaction Energy between Close-Packed Atomic Rows

YOUSUKE WATANABE

J. Phys. Soc. Jap., **43** (1977), 97.

A new method of calculation of the stacking fault and twin boundary energies in bcc metal is presented. This method is based on the model in which bcc crystal is built up of a bundle of close-packed atomic rows. Applying pseudopotential method, interaction energy between the atomic rows has been calculated, and then the energy of the two types of stacking fault and the energy of twin boundary in bcc sodium has been calculated. This method is found to be free from the convergence problem and superior to that formerly presented by Rao.

Anomalous Phonon Thermal Resistivity in Superconducting $Ti_{55}Nb_{45}$ Alloys

M. IKEBE, S. NAKAGAWA, K. HIRAGA and Y. MUTO

Solid State Commun., **23** (1977), 189.

The thermal conductivity of cold-worked and heat-treated $Ti_{55}Nb_{45}$ alloys has been measured in the temperature range between 0.6 and 1.5 K. Anomalously strong scattering of phonons for every sample and the remarkable enhancement in the thermal resistivity caused by the annealing at 500°C on cold-worked alloys have been found. These behaviors indicate the existence of an anomalous phonon scattering mechanism besides dislocation scattering in $Ti_{55}Nb_{45}$ alloys. Electron diffraction patterns show the circular diffuse streaks characteristic of the precursory lattice distortion for the w atomic configuration. Two kinds of models which correlate the anomalies in the phonon scattering with the lattice instability of the β phase of Ti-Nb matrix are described.

A Test of Modified Indium Seal of a Window at Liquid Helium Temperature

KOSHICHI NOTO and PETER STÖHR

Teion Kogaku (Cryog. Eng.), **12** (1977), 243.

A modified version of an indium seal with a very small loss area, in which pure In solder is used instead of pure In wire, has been tried for a glass window of 20 mm in diameter. It has turned out that this seal is vacuum tight against the liquid helium at 4.2K.

A seal of a 10 mm ϕ sapphire window with STYCAST 2,850 GT was also successfully tested at 4.2 K.