

## Twinning Deformation in Magnesium Compressed along the C-Axis(Physics)

著者	YOSHINAGA H., OBARA T., MOROZUMI S.
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the grouping method is not valid.

By the grouping method one attempts to obtain an average of many differential equations. It seems difficult to justify such a procedure mathematically.

### **An Estimate of Vacancy Migration Energy from Aging Experiments in an Iron 3.8 at% Molybdenum Alloy**

Y. IKEDA, T. GOTOH, K. ABIKO and H. KIMURA

Crystal Lattice Defects, **5** (1974), 163.

Resistivity change during isochronal aging of a high purity Fe-3.8 at.% Mo alloy is investigated. The resistivity first decreases between 300°C and 400°C, passing through a minimum it increases to a maximum at 650°C and decreases again. Molybdenum atoms are considered to form clusters in the first stage of resistivity decrease. The clustering at temperatures below 400°C is possible only when quenched-in excess vacancies are present and enhance the solute atom diffusion. This observation implies that vacancies in pure iron also migrate at an appreciable rate at around 350°C with an activation energy of about 1.2 eV.

### **Twinning Deformation in Magnesium Compressed along the C-Axis**

H. YOSHINAGA, T. OBARA and S. MOROZUMI

Materials Science and Engineering, **12** (1973), 255.

Deformation twinings in magnesium activated on the c-axis compression were investigated by light and electron transmission microscopies. Well-known twin forms of  $\{10\bar{1}3\}$  and  $\{30\bar{3}4\}$  habit planes were confirmed again, but  $\{10\bar{1}3\}$  twins were frequently observed to occur in groups along  $\{30\bar{3}4\}$  or grow from  $\{10\bar{1}3\}$  habit to  $\{30\bar{3}4\}$  habit. Transmission electron microscopic observations revealed that the well-developed  $\{30\bar{3}4\}$  habit twin has the same orientation relationship with the parent crystal as the  $\{10\bar{1}3\}$  twin. From these observations, it is concluded that the well-developed  $\{30\bar{3}4\}$  habit twins are the  $\{10\bar{1}3\}$  twins developed along  $\{30\bar{3}4\}$  planes.

A possible mechanism of the habit plane change is described and the relation between the twin and the compression band is discussed.

### **A Feasibility Study of Applying Neutron T-O-F Method for the Liquid Structure Analysis**

Shoichi TOMIYOSHI, Noboru WATANABE, Masakatsu MISAWA, Kenzo KAI and Motoharu KIMURA

Japan. J. Appl. Phys., **12** (1973), 1119.

A preliminary study of applying the time-of-flight neutron diffraction method for the determination of the structure factor of liquid metals has been examined. The diffraction pattern of liquid Sn at 260°C has been measured using a time-of-flight neutron diffractometer incorporated with a pulsed neutron source from an electron linear accelerator, and a fairly good agreement between the present