An Estimate of Vacancy Migration Energy from Aging Experiments in an Iron 3.8 at% Molybdenum Alloy(Physics)

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

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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

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

Deformation twinnings 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