therefore the boundary serves as a source for dislocations and microtwins. Planar faults, identified as microtwins are observed to emerge from the boundary area between the tungsten fibres and the matrix penetrating through the Nb₃W phase. The diffraction pattern analysis identified them as having the (111)ₜ habit plane. No systematic dislocation substructures have been observed in the matrix because of the high temperature at which the creep specimen was left after failure had occurred.

07. MATERIALS SCIENCE

07.9-6 INTERFACIONS IN THE SINGLE CRYSTALS OF Cd₁₋ₓ M₄·Te. By J. Przedmojski, M. Mycielski, Piotrowski, B. Palosz and B. Pura.

Institute of Physics, Warsaw Technical University, 00-662 Warsaw, Poland.

During the past several years physical properties of these crystals reffered also as "semimagnetic-semiconductors" have been extensively studied, although their structure up to now has not been identified especially for x>0.4. For x>0.4 multiple twinning or presence of hexagonal crystallities with c/a=1/6 were observed (A.Y. Wu, R.J. Sladek, J. Appl. Phys. (1982)52, 8569). Our measurements concerning X-ray investigations on crystals with x=0.4. Crystals were obtained by modified Bridgeman method. Line method, retigraph and powder technique as well as X-ray high temperature investigations were applied. From these investigations the zinc-blende structure with random stacking faults (twinning) were established.

07.9-7 INVESTIGATION OF THE NUCLEATION KINETICS OF A Li₂O-Al₂O₃-SiO₂-BASED GLASS CERAMIC. By U. Schiffner and W. Pannhorst, Schott Glaswerke, Mainz, Germany.

The nucleation kinetics of a Li₂O-Al₂O₃-SiO₂ glass ceramic have been investigated by the so-called development technique. Due to the very high stationary nucleation rates, which have been estimated to be about 10² nuclei/(mm²/sec) within the main part of the nucleation region, the investigations are mainly concerned with the transient nucleation. The investigations were performed with rods of about 5 mm thickness which have been drawn from the melt. Isothermal heat treatments in the nucleation region were performed with specimens of 0.5 mm thickness and after developing the nuclei to an observable crystal size the number of crystals were counted.

In the interval from 710 to 785 °C induction periods, i.e. time intervals within which no stable nuclei are formed, from about 6 min. down to about 15 sec. were observed. At higher temperatures the nucleation rates are so low that in effect also some time elapses before stable nuclei are formed. From the data a TTT-diagram is constructed.

The temperature usually chosen for the development of the nuclei was 1000 °C. Variation of the development temperature in the range from 920 to 1070 °C shows a strong linear dependence of the number of observable crystals with temperature.

The dependence of the TTT-curve on the heat treatment history of the specimens is shown in a series of experiments. Drawing the rods and quenching from 960 °C gives the same TTT-curve while quenching from 920 °C and 850 °C shifts the TTT-curve to lower times.