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 Ni_4W phase. The diffraction pattern analysis identified them as having the $(111)_{Ni}$ 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.

07.9–6 IMPERFECTIONS IN THE SINGLE CRYSTALS OF $Cd_{1-x}Mn_xTe$. By J.Przedmojski, *A.Mycielski, *T.Piotrowski, B.Pałosz and B.Pura.
Institute of Physics, Warsaw Technical University, ul.Koszykowa 75, 00-662 Warszawa, Poland.
*Institute of Physics, Polish Academy of Sciences, Al.Lotników 32/46, 02-668 Warszawa, 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 $x \geqslant 0.4$. For $x > 0.4$ multiple twinning or presence of hexagonal crystallities with $c/a = \sqrt{6}$ were observed (A.Y.Wu, R.J.Sladek, J.Appl. Phys. (1982) 53, 8589). Our measurements concerning X-ray investigations on crystals with $x = 0.4$. Crystals were obtained by modified Bridgeman method. Laue 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.

07.9–5 INVESTIGATION BY X-RAY DIFFRACTION METHODS OF THE WORKING LIFE OF DIMENSIONALLY STABLE ANODES (DSA) FOR INDUSTRIAL ELECTROCHEMISTRY. By Chr. Modès, W.C. Heraeus GmbH, Hanau, Fed. Rep. of Germany

There are usually three mechanisms which cause passivation of activated electrodes during technical electrolysis:

1.) The electrocatalyst in the anode coating of the DSA has been used up after the normal operating life of the electrode (e.g. by oxidation to volatile or soluble oxides) → normal wear.

2.) The electrode coating has peeled off from the electrode substrate.

3.) The electrode coating has been poisoned by unfavorable additives or by decontaminations in the electrolyte.

The above mentioned mechanisms have been studied on electrodes obtained from Heraeus Elektroden GmbH using different diffraction methods on the automated Stoe diffractometer, e.g. Bragg Brentano and the transmission geometries.
Results will be presented which have been obtained with both conventional scintillation counters and a curved position sensitive proportional counter.

07.9–7 INVESTIGATION OF THE NUCLEATION KINETICS OF A LI_2O-AL_2O_3-SIO_2-BASED GLASS CERAMIC. By U. Schiffner and W. Pannhorst, Schott Glaswerke, Mainz, Germany.

The nucleation kinetics of a Li_2O-Al_2O_3-SiO_2 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 10^9 nuclei/(mm³sec) 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 980 °C gives the same TTT-curve while quenching from 920 °C and 850 °C shifts the TTT-curve to lower times.