

16.8-03 EXPERIMENTAL REFINEMENT OF RECIPROCAL LATTICE ANGLES. By V.I. Lisoivan, Institute of Inorganic Chemistry, Academy of Sciences of the USSR, Siberian Department, Novosibirsk, USSR.

A method for the refinement of d -spacings by a single-crystal spectrometer has been published in 1960 (Bond, Acta Cryst. (1960) 13, 814). Barnes (Mater. Res. Bull. (1967) 2, 273), Burke (Acta Cryst. (1968) A24, 683), Bond (Acta Cryst. (1975) A31, 698) and Lukaszewicz (1976) have improved the method by the additional reexamination of corrections. The three lattice parameter measuring method in the case of the orthogonal axes for a thin specimen has been reported by the present author (Apparatura i metody rentgenovskogo analiza (1974) 14, 151). In the present work two schemes of the precision measurement of reciprocal lattice angles are described. The samples are thin slices of single crystals. In the first scheme only the Laue geometry is used, but in the second the Laue and the Bragg geometries are used. The first case provides the simultaneous determination of all the angles of the reciprocal lattice in the same volume of crystals. In the second case only two reciprocal lattice angles are measured. The corrections for a normal displacement from reflection planes and for refraction of X-rays are given. The method proposed has been applied to perfect crystals of silicon, germanium and $KY(WO_4)_2$. The precision of the angle measured is limited only by the angle reading errors.