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Abstracts of Forthcoming Articles

Ionic Conductivity of Some Alkaline Earth Halides. C. E. Derrington, A. Lindner, and M. O'Keeffe. Department of Chemistry, Arizona State University, Tempe, Arizona 85281. The ionic conductivity above and below the melting temperature has been measured for the fluorides, chlorides and bromides of calcium, strontium and barium, and for magnesium chloride. The observed behavior is of three types: I ($MgCl_2$, $CaCl_2$, $CaBr_2$, $BaBr_2$) there is an increase in conductivity of several orders of magnitude on melting. II ($BaCl_2$, $SrBr_2$) there is a solid–solid transition accompanied by a large increase in conductivity with little subsequent change on melting. III (CaF_2, SrF_2, BaF_2, $SrCl_2$) the conductivity of the solid is continuous and changes only slightly on melting.

Structure Cristalline de Be_3P_2. A. El Maslout, J. P. Motte, and C. Gleitzer. Laboratoire de Chimie du Solide, Université de Nancy I, 54037 Nancy Cedex, France and A. Courtois and J. Protas, Laboratoire de Mineralogie et Cristallographie, Université de Nancy I, 54037 Nancy Cedex, France. Be_3P_2 is studied by X-ray diffraction from powder and crystal, and by neutron diffraction from powder. The cell is tetragonal with $a = 10.22$ Å and $c = 20.39$ Å—group $I_{4_1/a}cd$—$z = 32$. The structure is refined ($R = 0.04$). The cell is like a superstructure of antifluorine with ordering of vacancies and beryllium atoms. The nature of the chemical bond Be–P is discussed with Suchet's model.

Synthèse et Propriétés Magnétiques de Solutions Solides entre l'Oxyde de Chrome CrO_2 et l'Oxyhydroxyde de Cobalt CoOH. M. Pernet and J. C. Joubert. Laboratoire de Rayons X, C.N.R.S. B.P. 166, Centre de Tri, 38042 Grenoble Cedex, France. Solid solutions of general formula $(1-x)\ CrO_2$, xCoOOH have been prepared by hydrothermal synthesis under very high pressure conditions (80 Kbar). $Cr^{6+}O_3$ and $CoCr^{6+}O_4$ were used as starting materials. Homogeneous ferromagnetic phases have been obtained when $0 \leqslant x \leqslant 0.5$. X-ray powder patterns clearly demonstrate the isotype with InOOH, and orthorhombic distorted rutile type structure. The results of the magnetic measures performed on samples with different compositions indicate that part of the Cr^{4+} cation have been reduced to Cr^{3+}, and that the general formula of the solid solutions should be written $Cr^{4+}_{1-(x+y)}Cr^{3+}_yCo^{2+}_xO_2H_{x+y}$.

Effect of Growth Conditions on the Genesis of CdI_2 Polytypes. Gyaneshwar. Department of Physics, M. M. H. College, Ghaziabad, India and G. C. Trigunayat. Department of Physics, University of Delhi, Delhi, India. The growth history of solution grown cadmium iodide crystals has been unfolded by successive cleavage. It has been revealed that all the crystals involve structural transformations during growth, including changes from the lower to higher polytypes and vice versa, as well as changes in the degree of disorder and arrangement of dislocations. The results are explicable in terms of creation and ordering of stacking faults during growth.

Planar Defects in β Alumina. Y. Le Cars and J. Thery. Laboratoire de Chimie Appliquée de l'Etat Solide (ERA 387), 11, rue P. et M. Curie, Paris 75005, France and D. Gratias and R. Portier. Laboratoire de Metallurgie Structurale des Alliages Ordonnés (ERA 221) 11, rue P. et M. Curie, Paris 75005 France. Sodium β alumina crystals were elaborated by melting of a mixture of Na_2CO_3 and Al_2O_3 or by PbO flux evaporation and studied by transmission electron microscopy. They exhibit regular planar defects lying in the {11.0} prismatic planes. These defects are described as antiphase boundaries for the cationic sublattice with fault vectors 1/2 ⟨10.0⟩ (such faults do not affect the anionic sublattice). As a consequence it would be interesting to study precisely the structure of the sodium β cationic lattice in the vicinity of the melting point.

Phosphures Ternaires de Lithium. II. Structure Cristalline de LiBeP. A. El Maslout, J. P. Motte, A. Courtois, and C. Gleitzer. Laboratoire de Chimie du Solide, Université de Nancy I, 54037 Nancy Cedex, France, and Laboratoire de Minéralogie, Université de Nancy I, 54037 Nancy Cedex, France. This structure is determined with X rays and neutron diffraction. The cell is tetragonal with $a = 3.617$ and $c = 6.032$ Å, group $P4/_nmm$, $z = 2$. The refinement gives $R = 0.06$. The bonds are discussed and the structure, anti-PbFCl type, is replaced in the Flahaut's classification of MXY compounds,