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Abstracts of Forthcoming Articles

Evidence for the Existence of Iron Tungsten Bronzes. I. J. McColm, R. J. D. Tilley. School of Materials Science, University of Bradford, Bradford BD7 1DP, England. And C. P. M. Barton and N. N. Greenwood. Department of Inorganic and Structural Chemistry, University of Leeds, Leeds LS2 9JT, England. X ray diffraction, high resolution electron microscopy, and Fe-57 Mössbauer spectroscopy have been used to study the WO_3–Fe system. The results from the diffraction methods can be interpreted either on a scheme involving bronze formation leading to a phase Fe_xWO_3, or on a scheme whereby a reduced tungsten oxide is in equilibrium with $FeWO_4$. However, the Mössbauer results show that up to $x = 0.0193$ in Fe_xWO_3, a bronze is formed with either an orthorhombic or tetragonal structure while above $x = 0.0193$, the phases are $FeWO_4$ and reduced tungsten oxides. The Fe_xWO_3 bronze contains a few isolated [102] crystallographic shear planes, which implies a very slight deviation from the ratio WO_3. Reaction of Fe with WO_3 or $FeWO_4$ with WO_3 and W at 950°C under vacuum leads to the bronze phase.

Etude Structurale de Cs_2SnF_6. J. Durand, J. L. Galigne, and A. LariLavassani. Laboratoire de Chimie Minerale C, Chimie des Materiaux, E.R.A. 314, Universite des Sciences et Techniques du Languedoc, Place Eugene Bataillon, 34060 Montpellier, France. The Cs_2SnF_6 structure is of the K_2GeF_6 type (trigonal P3m1). The unit cell dimensions are $a = 6.322$ (6) Å, $c = 5.032$ (5) Å; $Z = 1$. Each tin atom is linked to six fluorine atoms at the corners of a nearly regular octahedron with Sn–F = 1.952 (7) Å. The SnF_6^{2-} anions are isolated. Each cesium atom is surrounded by 12 fluorine atoms. The final R index is $R = 0.045$ from 453 X ray reflections.

Interaction Phonon Acoustique-Microprecipites dans les Semiconducteurs: Cas de GaAs. P. L. Vuillermoz. Laboratoire de Physique de la Matiere, Institute National des Sciences Appliquees de Lyon, France. The use of a specific relaxation time in the Callaway's model allows us to take into account the scattering of acoustic phonon by microprecipitates. This model, used for GaAs, agrees very well with the low temperature thermal conductivity measurements.

Classification, Notation, and Ordering on a Table of Inorganic Structure Types. J. Lima-de-Faria and M. O. Figueiredo. Junta de Investigacoes Cientificas do Ultramar, Alameda D. Afonso Henriques 41–4° E, Lisbon-1, Portugal. The inorganic structures are classified according to their structural units into five categories: atomic, group, chain, sheet, and framework. Each category is subdivided into homogeneous and heterogeneous, and further subdivisions are based on the constitution and packing of the structural units. A definition of structure types is proposed, and a notation for inorganic structure types is presented to account for the coordination of the atoms, the kind and packing of the structural units, and the condensation process of the groups in chains, sheets and frameworks. Generalized symbols for the stacking sequences of layers are also proposed. A general table including about 800 inorganic structure types is presented, divided along one direction according to the five structural categories and their subdivisions, and along the other direction according to general formulas.

Magnetic Susceptibility of the One-Dimensional Conductor $(H_3O)_{1.6}[Pt(C_2O_4)_2]nH_2O$. D. Heitkamp and H. S. Räde. Institut für Chemie, Kernforschunganlage Jülich. And H. J. Keller and H. H. Rupp. Institut für Anorganische Chemie der Universität Heidelberg, Germany. The magnetic susceptibility of the dioxalatoplatinate acid $(H_3O)_{1.6}[Pt(C_2O_4)_2]nH_2O$, a mixed valency planar (MVP) compound with columnar structure and one-dimensional metallic conduction properties, has been measured in the temperature range 1.5–300°K. The observed paramagnetism, as in other MVP-compounds, may be described by a linear 1/T dependence with a break in the slope at a characteristic temperature. The Curie constants as well as the point of discontinuity have been found to depend on the crystal water content. The results are discussed in terms of different theoretical concepts.