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Abstracts of Forthcoming Articles

Dimorphisme du Disulfure de Lanthane LaS_2. SIMONE BENAZETH, MICHELINE GUITTARD, AND JEAN FLAHAUT, Laboratoire de Chimie Minérale Structurale, Faculté des Sciences Pharmaceutiques et Biologiques de Paris V, 4, avenue de l'Observatoire, 75270 Paris Cédex 06, France. The stoichiometric lanthanum disulfide LaS_2 presents a reversible phase transition at about 750°C. The α low-temperature form is monoclinic with the $LaSe_2$ type of structure. All the crystals are twinned with the same twin law (100). The cell parameters are $a = 8.18$; $b = 8.13$; $c = 4.03$ Å; $\gamma = 90°$, space group $P2_1/a$. The β high-temperature form has the orthorhombic structure previously described with the parameters $a = 8.13$; $b = 16.34$; $c = 4.14$ Å, space group $Pnma$. The two structures are compared.

The Structure of Quartz at 25 and 590°C Determined by Neutron Diffraction. A. F. WRIGHT AND M. S. LEHMANN, Institut Laue Langevin, 156X, 38042 Grenoble Cédex, France. Analysis of single-crystal data on the α to β transformation in quartz, which takes place at 573°C, showed that the model which, until now, has best agreed with available X-ray data does not hold for the neutron data. In the earlier model both oxygen and silicon atoms move to special positions (6*j* and 3*c* in the space group $P6_222$). The new data for β-quartz were best explained by assuming a disorder for the oxygen atom around the 6*j* position, and in order to keep regular SiO_4 tetrahedra, a corresponding small disorder in the silicon atom is assumed.

Phase Relations and Exsolution Phenomena in the System NiO–TiO_2. THOMAS ARMBRUSTER, Institut für Mineralogie der Ruhr-Universität, D-4630, Bochum, West Germany. The phase relations in the system NiO–TiO_2 were studied between 1000 and 1600°C using quenched powder specimens, DTA runs, and single-crystal diffusion couples. Quenching experiments establish the stable phases TiO_2 (rutile), $NiTiO_3$, an ilmenite structure type, $Ni_{2(1+x)}Ti_{1-x}O_4$ ($x > 0.16$), a cation-excess spinel, and $Ni_{1-2x}Ti_xO$ (rock salt structure type). DTA runs reveal the existence of an additional nonstoichiometric ilmenite phase $Ni_{1-2x}Ti_{1+x}O_3$ ($x < 0.03$) above 1260°C. In quenched (1500°C, 1450°C) or slowly cooled single-crystal diffusion couples, mutual oriented exsolutions occur in the rutile guest crystal and in the ilmenite diffusion zone. Orientation relations are:

$$\{010\}_{\text{rutile}} \| \{0001\}_{\text{ilmenite (exsolutions)}}; \quad \langle 101\rangle_{\text{rutile}} \| \langle 110\rangle_{\text{ilmenite}},$$

$$\{0001\}_{\text{ilmenite}} \| \{010\}_{\text{rutile (exsolutions)}}; \quad \langle 110\rangle_{\text{ilmenite}} \| \langle 101\rangle_{\text{rutile}}.$$

The cation-excess spinel decomposes below 1375°C into oriented intergrowth of $NiTiO_3$ (ilmenite) and NiO:

$$\{111\}_{NiO} \| \{0001\}_{NiTiO_3}; \quad \langle 110\rangle_{NiO} \| \langle 110\rangle_{NiTiO_3}.$$

Mise en Evidence de l'Entité Sb_2F_4O dans un Compose d'Addition Moléculaire avec l'Urée: Etude Structurale de $((NH_2)_2CO)_2$, Sb_2F_4O. M. BOURGAULT, R. FOURCADE, AND G. MASCHERPA, Laboratoire de Chimie Minérale D, Université des Sciences et Techniques du Languedoc, Place Eugène Bataillon, 34060 Montpellier Cédex, France. The X-ray structure determination of $|(NH_2)_2CO|_2 \cdot Sb_2F_4O$ shows the existence of linked units urea–Sb_2F_4O which show the Sb_2F_4O entity, not yet known. Crystal structure was solved with a single-crystal X-ray diffraction study (the final R value is 0.046). The Sb_2F_4O unit is composed of a symmetric and short Sb–O–Sb bridge, and of four fluorine atoms, two being bonded to each antimony atom and situated in "*trans*" position relative to the Sb–O–Sb bridge. The bridge bond strength is assigned to a $p\pi d\pi$ overlap.

The Crystal and Molecular Structure of tris (ortho-Aminobenzoato)aquoyttrium(III). $Y(H_2NC_6H_4COO)_3 \cdot H_2O$. SHARON M. BOUDREAU AND HELMUT M. HAENDLER, Department of Chemistry, University of New Hampshire, Durham, New Hampshire 03824. tris(*ortho*-Aminobenzoato)aquoyttrium(III), $Y(H_2NC_6H_4COO)_3 \cdot H_2O$, crystallizes in the monoclinic space group, $C2/c$, with eight molecules in a unit cell of dimensions: $a = 30.89(1)$ Å, $b = 9.09(1)$ Å, $c = 14.85(1)$ Å, and $\beta =$

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