

A large family of niobium phosphate bronzes and bronzoids with $\text{KNb}_3\text{P}_3\text{O}_{15}$ structure

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Publication date

1990

Journal

European journal of solid state and inorganic chemistry

Volume

27

Issue

4

Pages

525-535

Description

[en] Nine new phosphate bronzoids- $\text{ANb}_2\text{TiP}_3\text{O}_{15}$, $\text{ATa}_2\text{TiP}_3\text{O}_{15}$ and $\text{ANbSbTiP}_3\text{O}_{15}$ ($A = \text{K, Rb, TI}$)-and one new phosphate bronze $\text{RbNb}_3\text{P}_3\text{O}_{15}$ have been synthesized. The cell parameters of these phases have been determined and the crystal structure of $\text{RbNb}_3\text{P}_3\text{O}_{15}$ has been established from a single crystal X ray diffraction study. They are all isotypic with the niobium phosphate bronze $\text{KNb}_3\text{P}_3\text{O}_{15}$ whose structure is closely related to that of the tetragonal tungsten bronze (TTB). The structural evolution in the series is discussed