

## Crystal Structures and High-Temperature Phase Transitions of the New Ordered Double Perovskites SrCaCoTeO<sub>6</sub> and SrCaNiTeO<sub>6</sub>

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**Abstract :** In the present work we report X-ray powder diffraction measurements of SrCaCoTeO<sub>6</sub> and SrCaNiTeO<sub>6</sub>, at different temperatures. The crystal structures at room temperature of both compounds are determined; and results showing the existence of high-temperature phase transitions in them are presented. Both compounds have double perovskite structure with 1:1 ordered arrangement of the B site cations. At room temperature their symmetries are described with the P21/n space group, that correspond to the (a+b-b-) tilt system. The evolution with temperature of the structure of both compounds shows the presence of three phase transitions: a continuous one, at 450 and 500 K, a discontinuous one, at 700 and 775 K, and a continuous one at 900 and 950 K for SrCaCoTeO<sub>6</sub> and SrCaNiTeO<sub>6</sub>, respectively with the following phase-transition sequence: P21/n → I2/m → I4/m → Fm-3m.

**Keywords :** double perovskites, characterisation DRX, transition de phase

**Conference Title :** ICSR2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020