



Structural phase transition in a perovskite-type $\text{NH}_3(\text{CH}_2)_3\text{NH}_3\text{CuCl}_4$ crystal : X-ray and optical studies.

Autorzy

Zbigniew Czapla
Janusz Przesławski
Matthew Crofton
Jan Janczak
Olaf Czupiński
Adam Ingram
Marek Kostrzewa

Rok wydania

2017

Czasopismo

Phase Transitions

Numer woluminu

90

Strony

637-643

DOI

10.1080/01411594.2016.1252983

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

X-ray powder studies and optical studies (polarized microscopic observation and linear birefringence studies) of the crystal $\text{NH}_3(\text{CH}_2)_3\text{NH}_3\text{CuCl}_4$ are presented. The X-ray powder studies revealed a change of symmetry from orthorhombic room-temperature phase to monoclinic phase above 434 K. A reversible phase transition of the first order at 434 K on heating and 432 K on cooling was observed in birefringence studies. Optical polarized microscopic observation revealed monodomain and multidomain states in the room-temperature orthorhombic phase with domain walls in (110) and (1-10) planes. The hypothetical prototypic phase is expected to be tetragonal. The change of symmetry from orthorhombic to monoclinic and expected domain structure was found above 434 K in the (010) plane.

Słowa kluczowe

Organic–inorganic compounds, phase transitions, X-ray diffractometry, linear birefringence, ferroelastic domains

Adres publiczny

<http://dx.doi.org/10.1080/01411594.2016.1252983>

