

Abstract Submitted
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Crystal Growth of MoO_2 and $\text{K}_x\text{MoO}_{2-\delta}$ ¹ B.S. DE LIMA, C.A.M. DOS SANTOS, L.M.S. ALVES, S.S. BENAION, A.D. BORTOLOZO, Departamento de Engenharia de Materiais - Escola de Engenharia de Lorena - USP, M.R. ANDREETA, Instituto de Física de São Carlos - USP, J.J. NEUMEIER, Department of Physics - Montana State University — During the last years our group has searched for new quasi-one- dimensional (1D) conductors, which led to the discovery of $\text{K}_x\text{MoO}_{2-\delta}$. The electrical resistivity of this compound is well described by a power law in temperature [1]. In this presentation, progress on the crystal growth of $\text{K}_x\text{MoO}_{2-\delta}$ will be discussed. Crystal growth of the parent compound MoO_2 utilizes chemical vapor transport (CVT) with iodine as transport agent. Crystal growth of $\text{K}_x\text{MoO}_{2-\delta}$ by CVT was carried out using high purity K_2MoO_4 , MoO_3 , and Mo powders which were mixed in appropriate amounts ($0 \leq x \leq 0.25$) and sealed with I_2 in quartz tubes, followed by heat treatment in temperature gradients from 750 to 950°C for 100 h. The crystals were characterized by X-ray diffraction, scanning electron microscope (SEM), Raman spectroscopy, electrical resistance and magnetization measurements.

[1] L. M. S. Alves *et al.*; Phys. Rev. B 81, 174532 (2010) and references therein.

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