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PROCEEDINGS

Molybdenum (II) acetate as a precursor for molybdenum trioxide

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Transition metal structures (such as cobalt, nickel, and molybdenum) have been the subject of studies in recent years due to their electrical, catalytic and magnetic properties. Orthorhombic molybdenum trioxide (α -MoO₃) is relevant because it is an antioxidant material, leading to its catalytic properties that are influenced by the valence state of molybdenum ions and the local environment where they are inserted. These structures have been investigated in developments of sensors, energy storage and the formulation of gels for the treatment of chronic diseases [1]. In this perspective, the present work proposes the use of the molybdenum (II) acetate as a metallic precursor for obtaining α -MoO₃ structures by the thermal decomposition method [2]. The Mo (II) acetate belongs to a group of metal complexes composed of two highly correlated Mo ions, in which each cations are connected to complexes containing oxygen. This reagent could favor, in specific chemical route, the crystallization of Mo_xO_y [2][3]. The syntheses yields were characterized by X-ray diffraction (XDR), scanning electron microscopy (SEM), and energy-dispersive analysis (EDS). The X-ray diffraction results suggested α -MoO₃ crystallite of the 77 nm (by the Scherrer equation). By means of microscopy analysis were observed that the obtained morphology is microrod-like, with a of approximately 774 nm and a length of the 37 micrometers. The EDS analysis only showed energies related to molybdenum (Mo) and oxygen (O), confirming the purity of the obtained material.

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