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**Investigation of the temperature influence on the growth of alpha-MoO3 nanosheets**

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Nanostructures of molybdenum trioxide (MoO3) have been the subject of recent research due to their catalytic, electrical, and chemical properties, which enable various applications such as the development of batteries, electrocatalysts, antibacterial gels, as well as prospects for applications in nuclear medicine. The literature reports the synthesis of MoO3 nanostructures by chemical methods, in which the primary obtained system is the orthorhombic structure (alpha-MoO3) with distinct morphologies.In this study, we investigated the influence of temperature on the growth of MoO3 nanosheets using MoO3 microbelts as substrates.The alpha-MoO3 microbelts were obtained by thermal decomposition at 340°C for three hours, followed by annealing at 700°C to increase the crystallinity of the system. After this step, the microbelts were subjected to thermal treatment in an open atmosphere at 800°C for the growth of nanosheets. The samples were characterized by XRD, SEM/EDS, and TGA/DSC. XRD results show the structural stability of the alpha-MoO3 phase after thermal treatment at 800°C. Morphological characterizations indicate that the microbelts acted as substrates for the growth of nanosheets with a thickness of 66 nm, following the vapor-solid mechanism described in the literature, and these results are corroborated by thermal analysis measurements.