

EFFECT OF ORGANIC SPECIES ON THE CHARACTERISTICS OF MOLYBDENUM-VANADIUM OXIDE

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ABSTRACT

In this study, molybdenum-vanadium oxide samples were prepared via reflux method. Urea and hexane were applied in the mixture in order to improve the physicochemical properties of the mixed oxide. A control sample without the presence of organic species was also prepared. X-ray diffraction analysis showed that the precursors were in a complex mixed phases. All of the precursors were calcined in N₂ flow at 573, 623, 673, 723 and 773 K for 2 hours. Calcined samples were denoted as Contcalc, Urcalc and Hexcalc. Samples calcined at 573 K were still in a complex mixed phases. When calcined at 623 K, Contcalc and Hexcalc showed a hexagonal MoVO_x phase while Urcalc was in a monoclinic MoO_x phase. However, calcination at 773 K has managed to transform all samples into the monoclinic MoO_x phase. On specific surface area analysis, Urcalc gave the highest value, which was 10.8 m²g⁻¹.

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