Solvathermal synthesis of nanostructured molybdenum-vanadium mixed oxides

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With the use of microscopic, spectroscopic, gravimetric and diffraction methods the kinetics and peculiarities of spontaneous and thermally-induced polycondensation of molybdenum and vanadium oxoacids in aqueous medium has been investigated. It has been shown that polycondensation occurs with the induction period the length of which exhibits an increase at the rise of V : Mo ratio. The polycondensation rate and the length of the induction period is very sensitive to the presence of surfactants and polymers in the mature solution that permits one to exert an effective control over the process of the colloidal oxide formation. The mechanism of polycondensation processes during solvathermal synthesis of bare and mixed oxides of molybdenum and vanadium of general composition $(1\text{-}x)V_2O_5 : xMoO_3$ was proposed.

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