

Thematic course: Hydrochemical synthesis of metal chalcogenides. Part 6.

Kinetic-thermodynamic research on conditions for formation of substitutional solid solution of $\text{PbS}_y\text{Se}_{1-y}$ in citric-ammoniac system

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Abstract

The boundary conditions for the $\text{PbS}_y\text{Se}_{1-y}$, $\text{Pb}(\text{OH})_2$ formation in «lead(II) acetate – thiourea – selenourea – sodium citrate – ammonium hydroxide» systems have been identified by analyzing the ion balances using thermodynamic constants and taking into account crystallization factor. The integrated kinetic studies of $\text{PbS}_y\text{Se}_{1-y}$ deposition with thio- and selenourea have been carried out; activation energy and particular orders of reaction on system components have been defined, the formal-kinetic equation for rate of salt lead transformation in $\text{PbS}_y\text{Se}_{1-y}$ have been obtained.