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Synthesis of $Hg_xPb_{1-x}Se$ solid solutions by ion-exchange substitution

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Abstract

For the first time by the method of ion-exchange substitution of lead on mercury in PbSe films, sustained in $Hg(CH_3COO)_2$ solution, the thin polycrystalline layers of $Hg_xPb_{1-x}Se$ solid solutions with mercury content up to 40 atomic % are obtained. The synthesized solid solutions are investigated by the methods of X-ray diffraction and energy-dispersive analysis. The dependence of a structure and morphology of $Hg_xPb_{1-x}Se$ films from duration of a contact of lead selenide film with the solution of mercury salt is established.