

Investigations of the surface morphology of electrodeposited Ag-In coatings by means of optical, scanning-electron and atomic-force microscopy

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Abstract

Comparative investigations of the surface morphology of electrodeposited silver-indium alloys with chaotic distribution of the different phases, as well as with spatio-temporal structures onto their surface were performed by means of optical, scanning-electron and atomic-force microscopy.

The morphology of the different phases forming the heterogeneous chaotic structures is quite different and they are well distinguishable both in the SEM and AFM measurements. The coatings with periodical spatio-temporal structures are multilayered with very small thickness of the separate sublayers and in the SEM images the areas of the different phases (dark and light areas) are well visible only using low electron beam voltages. The AFM investigations show in some areas ordered structures, probably connected with the natural convection during the electrodeposition.

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