

Study of structural parameters of porous anodic oxide depending on electrolyte temperature

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Abstract: The results of studies on the effect of electrolyte temperature during anodizing of thin aluminum films on SiO₂-Si plates on the morphology of porous anodic alumina (PAA) films are presented. The pore diameter and interpore distance were determined by computer analysis of SEM images of the morphology of the anode films. The data obtained showed that the pore diameter doesn't depend on the

temperature of oxalic acid solution and the time of the process, but is determined only by the anodizing voltage. For anodizing mode at 30 V with an electrolyte temperature in the range of 5-40 °C, the pore diameter of the PAA films was 20 ± 0.5 nm, and the interpore distance was about 77.7 ± 1.0 nm.

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