THE MECHANISM OF CHARGE TRANSFER IN NEAR-SURFACE LAYERS OF IMMERSION OIL WITH WEAKLY AND STRONGLY DISSOTIATED IMPURITIES

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S u m m a r y

For immersion oil, it is shown for the first time that the charge transfer in near-surface layers (at $U < 1$ V, all voltage U is applied to these near-surface layers) corresponds to the Schottky emission. The parameters of the given process and their change during addition of impurities which dissociate weakly or strongly are estimated. A new model of formation of double electrical layers in dielectric liquids is offered. The basis of this model is the adsorption of not only ions but also neutral impurities. We estimate the concentration of such impurities in pure immersion oil (about 0.1 %) and show that there are enough such molecules for the formation of a thin dielectric layer with parameters, which can be obtained on the basis of the analysis of the charge-transfer process.