Complexing of copper(I) in solutions
for activation of dielectric materials

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Abstract
Possibility of using solutions on the basis of copper(I) for nonconducting surface activation is studied. These solutions are used before chemical metallization. Solutions possess sufficient stability and activity. It is established that concentration Cu(I) in a solution should make 0.3-0.5 mol/l. It provides necessary quantity of copper on a surface (0.3-0.5 $g/м^2$). Chloride of copper(I) is slightly soluble compound. The solubility increase follows the account of the complexation of ions Cu^+ and Cl^-.

Questions of thermodynamic balance in difficult system «Cu(I)─H_2O─Cl^-─$CuOH^{solid}$─$CuCl^{solid}$» are analyzed. The complexation processes allow raising solubility of CuCl. Existence areas of complex compound of copper(I) are defined. Concentration of ions Cu^+ and CuCl can be neglected. If concentration of ions Cl^- less than 0.5 mol/l, copper is in the complex form of $[CuCl_2]^-$. If concentration of ions Cl^- 0.5 mol/l, copper is in the complex form of $[CuCl_3]^{2-}$. The solubility increase is connected with complexation Cu(I) and pH solution. Concentration characteristics of activation solution are established.