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論文

無電解銅めっきの析出形態制御

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Morphology Control of Electroless Copper Plating Deposit

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Abstract

Electroless copper plating has been widely applied in the electronics field because the deposited films consist of a rock-like structure which is superior in ductility and conductivity. However, when electroless copper is deposited on a single orientation substrate like rolled copper foil, the deposited films are influenced by the performance of the following electro plating. Accordingly, our study aims at the preparation of electroless copper plating films consisting of blade and protrusion-like structures with many orientations. Deposited films consisting of blade and protrusion-like structures were obtained from a bath comprising 0.03 mol/dm^3 of $CuSO_4 \cdot 5H_2O$ or $CuCl_2$, 0.3 mol/dm^3 of formaldehyde and 0.24 mol/dm^3 of EDTA and operated at pH 12.5 and 60°C. It was especially desirable to use EDTA of R=8 for the blade-like structure and R=16 for the protrusion-like structure. In our study, we are using "R" as the mole ratio obtained by dividing the value of the complexing agent concentration by that of the metallic salt concentration.

Key Words: *Electroless Copper, Orientation, Surface Morphology, Peel Strength*