PROCESS OF CONTROLLING GRAIN GROWTH IN METAL FILM

ABSTRACT

THIS SHEET HAS BEEN REPLACED

A process for controlling grain growth in the microstructure of thin metal films (e.g., copper or gold) deposited onto a substrate. In one embodiment, the metal film is deposited onto the substrate to form a film having a fine-grained microstructure. The film is heated in a temperature range of 70-100°C for at least five minutes, wherein the fine-grained microstructure is converted into a stable large-grained microstructure. In another embodiment, the plated film is stored, after the step of depositing, at a temperature not greater than –20°C, wherein the fine-grained microstructure is stabilized without grain growth for the entire storage period.

FIG.3

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