

Nano-Structured Metal Deposition by electroplating method for PCB required for Space Application

Space Applications Centre (SAC) has developed Nano-Structured Metal Deposition by electroplating method for PCB. This technology ensures the deposition of <100 nm copper and gold metal deposition by electroplating method for RF/Microwave PCB circuits fabrication. Nano crystalline and ultra-fine grain deposited copper by this technology can potentially offer improved reliability and functionality to the PWB. Secondly Nanocrystalline deposition significantly contribute for the isotropic etching characteristics of copper during the lithographic etching process, hence wiring density can be increased through grain size reduction. Nano soft gold plating deposit provides an extremely pure deposit of gold and non-porous coating.

Applications area

- PTH Gold plated PCBs for RF/Microwave applications.
- MLBs with high aspect ratio boards.

Salient features

With this technology it is possible to etch 100-micron track width and spacing. Moreover, fabrication process passes through all qualification tests including following environmental and functional tests.

Hot Storage	125 °C - 168 Hours
Thermal Cycling	- 65 °C - 10 min., +125 °C - 10 min., No. of Cycles: 200 (100 + 100)
Humidity	- 40 °C ± 2 °C 90 - 95 % RH for 21 days
1mil Wire, 5/10/20mil Ribbon Bonding (5 bonds of each) using parallel gap method	

SAC Technologies

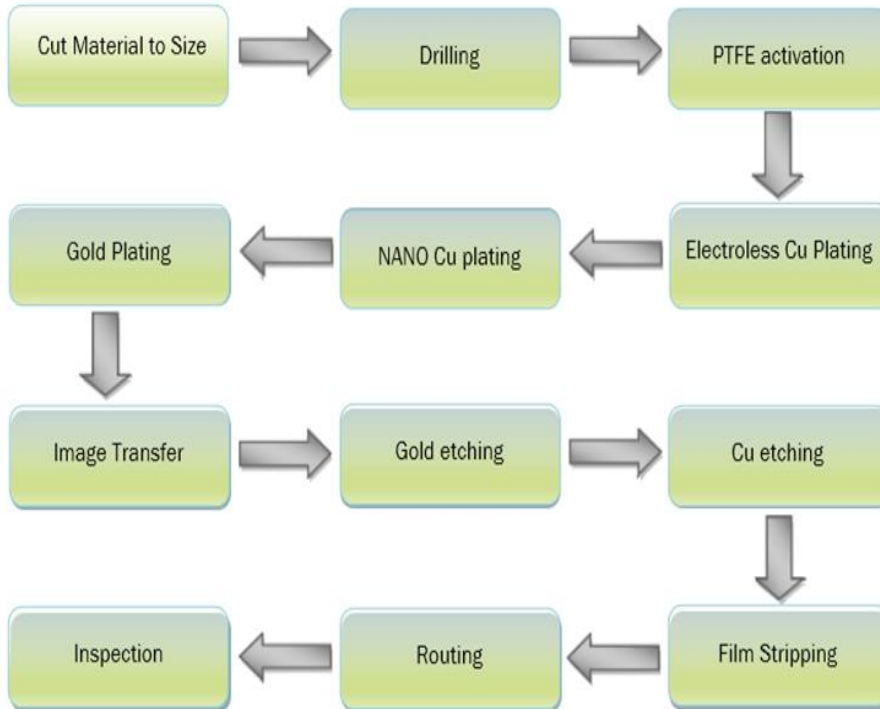


Broad Specifications

Copper nano deposition < 100 nm

Gold nano deposition < 100 nm

Process Schematic diagram



Technology Transfer

SAC/ISRO, offers to transfer this technology of the **Nano-Structured Metal Deposition by electroplating method for PCB required for Space Application** developed by SAC to industries in India with adequate experience and facilities. Enterprises interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

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