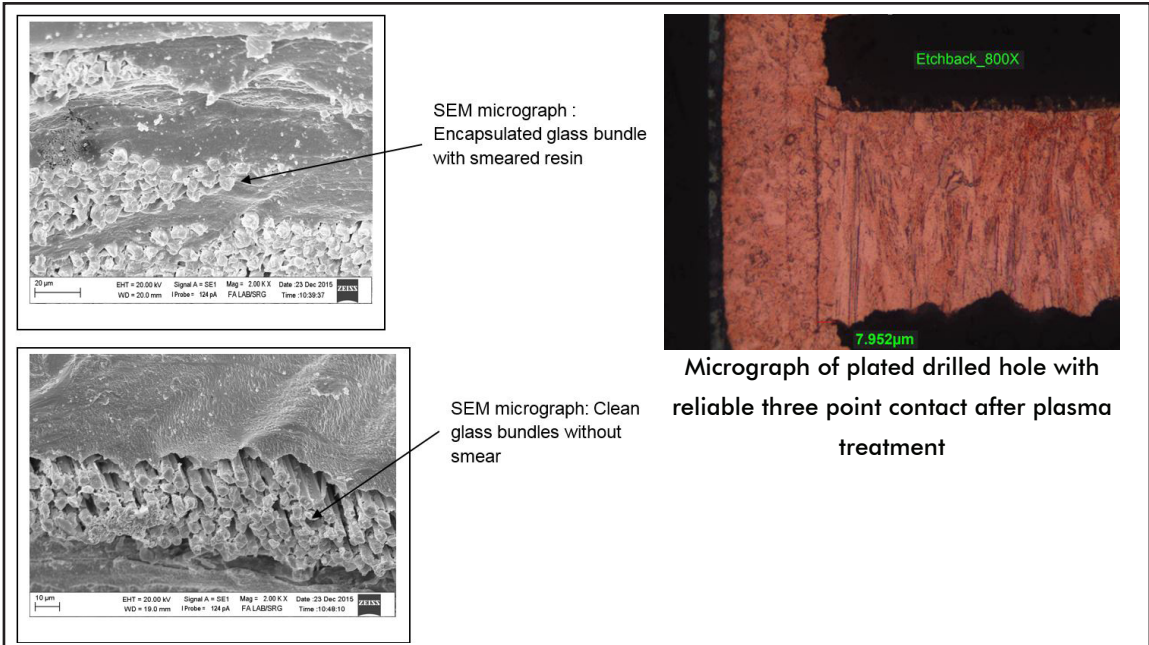


Plasma Enhanced Desmearing - Etch Back and Activation process for Plated through Hole (PTH) realization in Printed Wiring Boards (PWBs)

U R Rao Satellite Centre (URSC) of Indian Space Research Organisation (ISRO) has developed the technology of Plasma Enhanced Desmearing - Etch Back and Activation process for Plated Through Hole (PTH) Realization in Printed Wiring Boards (PWBs). A plasma cleaning process was developed and qualified for Desmearing- etch back in high layer count multilayer PWBs and surface activation of drilled through holes in fluoropolymer based microwave laminates prior to seed layer metallization. This process will ensure reliable mechanical and electrical interconnection along the hole wall during metallization. Plasma Desmear uses controlled chemical reactions to clean epoxy resin from the inside of drilled holes in PCBs. Plasma etchback is a similar process, but in addition to the residue, it also removes some of the substrate surrounding the interconnects. These processes ensure circuit reliability in PCBs by promoting good electrical contact between their interconnects and their copper through-plating.



Salient Features & Major Specifications

- ✦ Plasma Technology for De-smearing and Etch back
- ✦ Machine Specifications (typical)
 - RF Generator Power : 5 kW
 - Frequency : 40 kHz
 - 3 gas channels with mass flow controller
 - Gases used: CF_4 , O_2 , N_2
- ✦ Parameters : Specification
 - Min through hole size : 0.3 mm
 - Aspect Ratio : 1:8
 - Hole wall Copper plating thickness : Min.25 microns
 - Positive Etch back : Max :12 microns
 - Etch back variations : ± 2 microns
 - Laminate voids : NIL
 - Specific Equipment requirements :
 - a) Plasma machine with accessories like input gas cylinders, nitrogen gas generators.
 - b) High jet water cleaning machine.
 - c) Conveyerised micro-etching machine.

Technology Transfer

URSC/ISRO offers to transfer this technology of Plasma Enhanced Desmearing - Etch Back and Activation process for Plated through Hole (PTH) realization in Printed Wiring Boards (PWBs) to industries in India with adequate experience and facilities. Industries interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

Technology Transfer & Industry Coordination Division (TTID),
Programme Planning and Evaluation Group (PPEG),

📍 U R Rao Satellite Centre (URSC), ISRO, HAL Airport Road,
Vimanapura Post, Bangalore – 560 017.

✉ Email-id: tt-icd@ursc.gov.in

☎ Fax No: 080-25205261

🌐 <https://www.ursc.gov.in/industry/index.jsp>