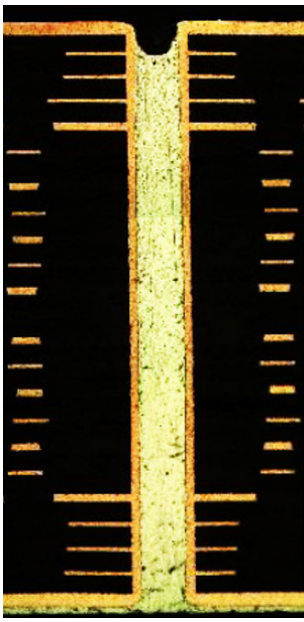
Shadow

Direct Metallization

For the Highest Performing and Most Reliable Direct Metallization, Start with Shadow

The **Shadow** direct metallization process is a patented graphite based slightly alkaline aqueous dispersion of conductive colloids and proprietary additives used to make through-holes and blind vias conductive for subsequent copper electroplating.

Shadow enables the plating of high performance and exotic materials with reduced processing steps and fewer interfaces to form a continuous metallurgical structure for improved reliability in critical applications.



KEY FEATURES

- Reduced power and water usage
- Simple, easy to control, four-step process
- Unsurpassed reliability verified with IST, HATS and Thermal Cycling
- No formaldehyde, no chelating agents, no heavy metals
- High copper-to-copper direct bonding strength
- No need for expensive palladium activators
- Lowest particle size for fine feature performance
- Consistent particle size throughout bath life
- Compatible with materials such as PI, LCP, Rigid Flex and PTFE
- Allows for copper plating without flash plate
- Improves production flow and processing costs
- No hydrogen bubble issue in the holes

MacDermid Alpha ELECTRONICS SOLUTIONS

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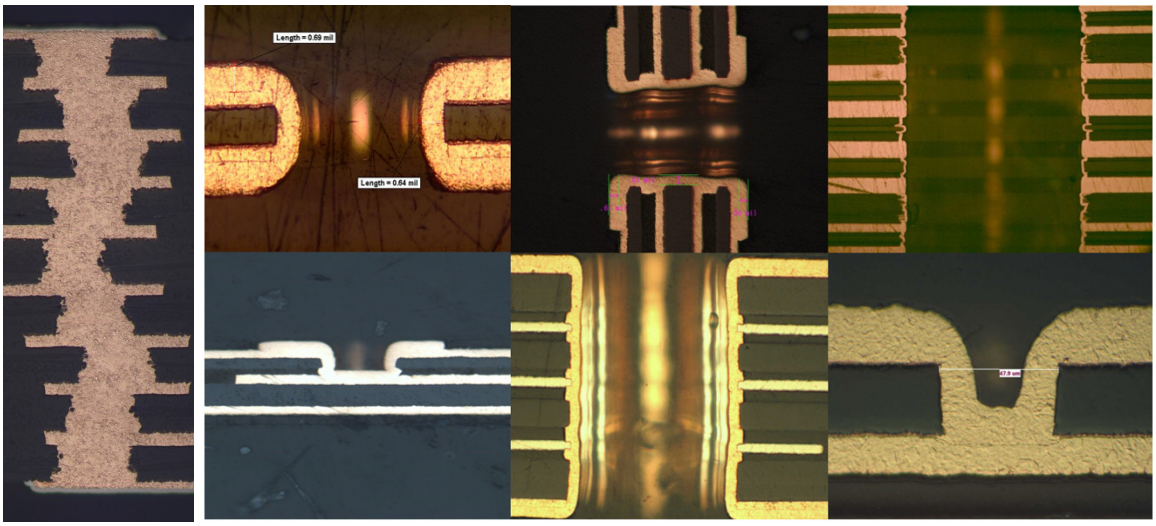
PCB, Any Layer HDI. Shadow Does It All

Shadow is the number one direct metallization solution for advanced through hole and via plating sold today. Whether you're plating single or stacked vias, low or high aspect ratio through holes, Shadow does it cleaner, faster, and more reliably than any other metallization process.



Shadow is capable of plating materials that electroless copper and other direct metallizations cannot. Complex designs such as any layer HDI, complex blind vias and high aspect ratio through holes are no match for Shadow technology. Advanced substrates such as high frequency RF materials, PTFE and flex boards are fully compatible with the Shadow process.

Environmentally Friendly Value