Decapsulation for Failure Analysis
Without Damage
to Cu and Ag Wires

Improving Decapsulation results using

Laser and Plasma decapsulation processes

Abstract

With advances in IC manufacturing and the increase in complexity and functionality, knowing why a device has failed becomes ever more critical. Additionally many of the EMC (Epoxy Mold Compound) materials make their removal very difficult. Also, the use of new materials, such as Cu and Ag wire, make some of the decapsulation methods not feasible.

Laser ablation and plasma decapsulation, are uniquely suited to over come many of the challenges of other decapsulation methods. Laser ablation is quick to remove much of the EMC quickly while plasma can be used to effectively remove the remainder of the EMC, down to the second wire bond, without the damage to Cu and Ag wires, caused by other methods.

Agenda

- Why is decapsulation needed for failure analysis?
- What are some of the challenges in removing EMC?
- What about Ag wires?
- Some of the existing methods for EMC removal
- Safety Concerns
- Laser ablation of EMC
- Plasma decapsulation
- Automated cleaning
- Conclusions
- Questions?

Personal Biography
Bruce Wilson

Bruce is the Director of Sales & Marketing at BSET EQ providing innovative plasma and thermal solutions to the microelectronics test and manufacturing community. Bruce is responsible for all sales and marketing at BSET EQ, with a focus on North America.

Bruce has been supporting back end microelectronics manufacture and test for over twenty years. He has worked, worldwide, with organizations to solve their most challenging manufacturing and testing problems and supplying appropriate equipment to support these processes.

Bruce is a certified Shearography Level II NDT operator and has received multiple commendations for technical presentations worldwide. Bruce has also coauthored papers on high vacuum and thermal processing of microelectronic devices.