

ELECTRONIC MATERIALS

ELECTRONIC PACKAGING AND INTERCONNECTIONS 2021

Continuing advances in microelectronic, optoelectronic and nanoelectronic devices require new materials and technologies to meet the increasing electrical, thermal, mechanical, reliability, performance and environmental demands placed on interconnects and packaging at all levels. This symposium will address current researches in packaging materials and processes, including Pb-free solders, microstructure-design, alternative interconnects, conductive adhesive, epoxy, 3D packaging, wafer level packaging, reliability, and root cause analysis.

Topics of interest include, but are not limited to:

- Advanced packaging materials and processes, e.g., 3D packaging, wafer level packaging, photonic packaging, Internet of Things (IoT), flexible electronics, wire bonding, automotive and power electronics
- Interconnects for packages, e.g., Pb-free solder, micro bumps, through-silicon-vias (TSVs), direct Cu to Cu bonding, wire bonding, conductive adhesive, transient liquid phase bonding, sintered nano powder joints, optoelectronic interconnects, and alternative interconnect materials at chip and package levels
- Additive manufacturing and 3D printing for electronics industry
- Other packaging materials, e.g., epoxy, molding compounds, epoxy flux, thermal interface material (TIM), and substrate materials
- Reliability and failure analysis for next generation packages
- Continuing challenges in implementing Pb-free solders for interconnect, plating and thermal interface material (TIM) applications
- Developments in next-generation Pb-free solders for improved reliability
- Developments in high temperature Pb-free solders and associated interconnects for automotive and power electronics

- Developments in low temperature Pb-free solder alloys and fine pitch solder joints
- Electromigration, thermomigration, stressmigration and mechanical effects
- Whisker growth in Sn, Sn-based alloys and other metallic systems
- Advanced characterization methods as applied to interconnect technology
- Fundamental materials behavior including phase transformations, computational thermodynamics, solidification, microstructure evolution, corrosion, mechanical, thermal, and electrical properties of solders and intermetallic compounds

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