

Electromigration in Low Temperature Solder at Board Level

Board Assembly

Motivation:

- Verify if electromigration would be a potential risk for low temperature soldering (LTS) for the 2nd level interconnect (SLI) solder joints
- Almost all published studies to date on electromigration are for first level interconnect

Objective:

- Determine current density vs resistance increase for a range of solder joint sizes (100 microns to 500 microns)

Priority:

- Near term needs; high industry influence

Strategy/Approach:

- Design appropriate test vehicles which can pass current in both directions through mixed alloy solder joints
- Focus on SLI – BGA solder Joints, both mixed SAC-BiSn and homogenous Bi-Sn
- Microstructural characterization post electromigration

Leadership/Participants:

- Intel, IBM, Nokia, Dell, Indium, Heraeus, Shinko, MacDermid Alpha expressed interest
- Universities can be engaged
- Contact: Haley.Fu@inemi.org