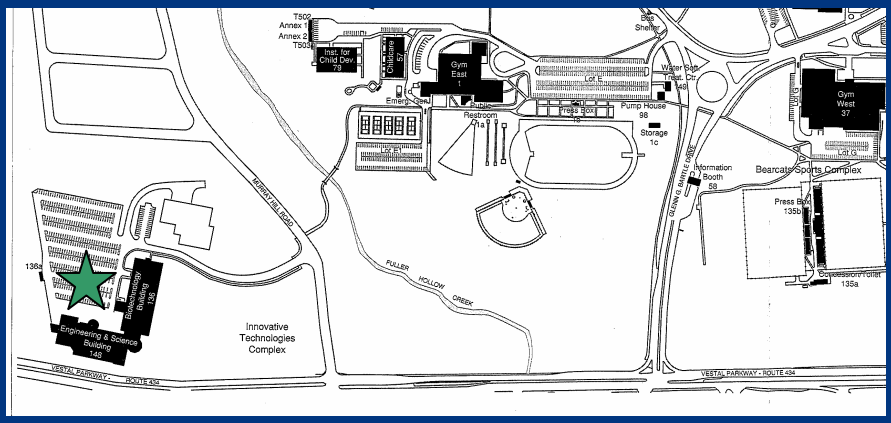
AREA Consortium

June AREA Consortium Meeting

Binghamton University, Engineering and Science Building: Rotunda & Room ES-2008

- **Dates: June 6th 8am-6pm (6pm reception, 7pm dinner)**
  June 7th 8am- 12noon (Lunch served, lab tours or meetings follow)
- **DIRECTIONS: The AREA Consortium will be held in the Engineering and Science Building at the Innovative Technologies Complex (ITC) at Binghamton University.**



- **Also, if you go to the link below and click on the right most blue pin ("Engineering and Science Building Entrance"), it can provide you with directions.**
- **http://research.binghamton.edu/directions.php (Wait ~5 seconds for pins to appear.)**
- **Call my cell if you are lost (607-768-4597)**

IBL VAC-645 Vapor Phase

Oven has been installed and tested in the Lab. The vacuum option has shown reduced flux voiding on small solder joints.

- A test vehicle has been built by using this oven with LGA and other surface mount components on the board.

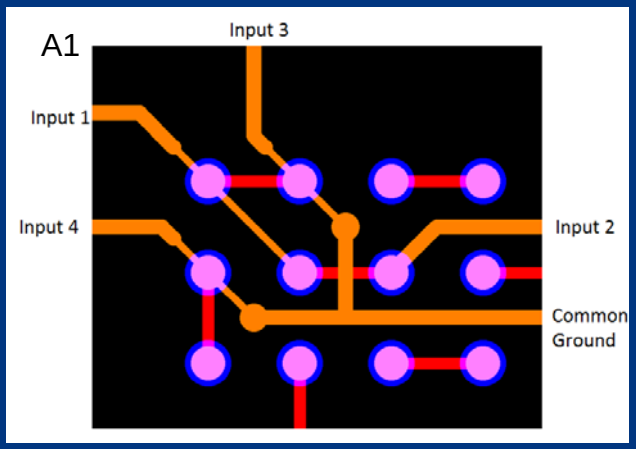
Website Updates

We have added many new files to the 2012 website. They include;

- Several new reports
- A site for gerber files of our test boards designed by Mike Meilunas
- Martin Anselm's PhD dissertation and defense slides

High Speed Shear Testing

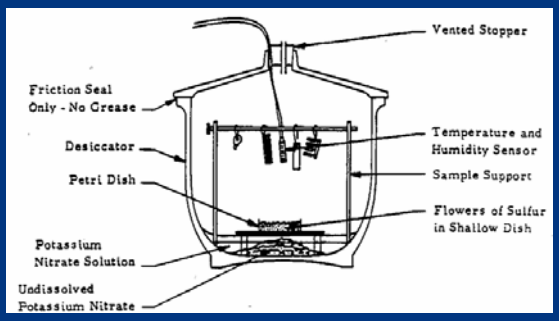
Lower speed tests (50 and 75 mmps, producing mostly mixed-mode failures) were concluded for the 3 cells that had been tested at higher speeds (reported in March). We also plan "round robin" tests with a consortium member to see if we get operator-dependent results.



Mike's design for pad crater detection

Creep Corrosion

A new humid sulfur testing chamber is under construction. It will give us increased chamber space and improved corrosion uniformity. A new test vehicle has been purchased for testing of both surface-mount and wave fluxes for their propensity for corrosion creepage.



Conformal Coating

We have been getting a lot of interest on conformal coating after my presentation in March on a possible research topic on the process and materials available in the industry.

- Two areas of interest have been discussed on the subject.
  - Low standoff component reliability in thermal cycling
  - Ag2S formation mitigation on chip resistors
- Some early discussions suggest we could have a single test board designed for testing of conformal coating materials and process.
- Issues are finding appropriate parts and facilities to coat our test board (built here in our lab). Also we need to decide if we are going to use no-clean or WS flux chemistries.

Solder Microstructure

We are continuing our research on the Sn grain morphology on SAC solder alloys and SACX (X is doppant).

- We are trying to understand the failure mechanism of BGA vs LGA samples, which have different twinning morphologies (interlaced vs beach ball, respectively), in both thermal cycling and cyclic bending tests. To better understand the failure mechanism, we are carefully investigating the microstructure evolution during aging and thermal cycling.
- We are analyzing the morphology and distribution of precipitates using backscattered electron imaging and quantifying them by image analysis technique.
- The Sn grain morphology is characterized using electron backscatter diffraction (EBSD).
- We will discuss the grain growth, recrystallization and intergranular crack growth for both beach-ball and interlaced twinning structures at the June meeting.

Dage Equipment Repair

The HBP cartridge has been shipped to California for repair. We are not certain how long it may take to get the equipment repaired.

0.3mm Pitch Printing Activities

A project focused on 0.3mm pitch CSP assembly is near the launch point with new test boards now in fabrication.

- In preparation for this we will present some of our historical printing data for this device summarizing key learning points and recommendations that will be useful to guide future experiments.

Eco-Compliance
By Krista Crotty of Alberi EcoTech

A presentation is being prepared for the June meeting to cover the latest information and developments in electronic product environmental compliance, including best practices for compliance, gathering information, and assessing parts/components/data. With this lecture we should be able to minimize overall corporate risk as it relates to the environmental compliance of the electronic products.

The presentation will include, but are not limited to:

o Update on RoHS Recast, WEEE, REACH

o Overview of current auditing and enforcement to date

o Best practices for product eco-compliance

o Review of a current corporate project, including review of a product compliance package (TCF)

o Review of industry activities

o Recommended industry participation (conferences, standards, etc)

We are requesting additional areas of concern from our members that could be included in this presentation!

Some Hotel Options for the June Meeting

Traditions at the Glen

If you are into history and a reasonable rate...

4101 Watson Boulevard, Johnson City, New York 13790 (607) 797-2381

http://www.traditionsresort.com/

"This historic site of this Johnson City, NY resort was built in 1919 as a private residence for Mr. Eliot Spalding, who was then treasurer of the Endicott Johnson Shoe Company. Several years later, it was purchased by the Kalurah Shrine to be used as a clubhouse for their new nine-hole golf course. IBM Corporation acquired the facility in 1935 to for an employee country club; and in 1938 the company converted the building into a hotel for visiting customer executives." -

http://www.traditionsresort.com/history.html

Holiday Inn Express in Vestal

We have a corporate rate with them of around $90.night.

3615 Vestal Parkway East, Vestal, NY

(607) 348-0088

http://www.hiexpress.com/hotels/us/en/vestal/bgmny/hoteldetail

Hampton Inn and Suites

3708 Vestal Parkway East

Vestal, NY 13850

Request Universal room rate ($99/night)

607-797-5000 or 800-426-7866 (Reservations only)

http://www.hamptoninn.com

Residence Inn

4610 Vestal Parkway East

Vestal, NY 13850

607-770-8500 or 800-331-3131 (Reservations only)

Request Universal room rate

http://www.residenceinn.com