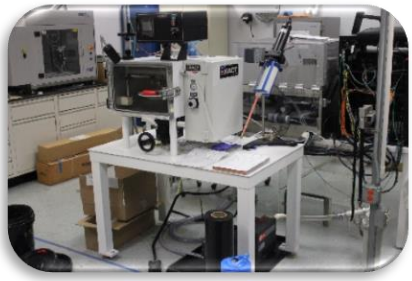
ENCAPSULATION SERVICES

Encapsulation is the process of applying a dielectric gel to isolate circuitry aimed to operate at voltages that would normally arc in such proximity in air alone. Hermetic package sealing processes with solder or glass frit are used to isolate critical microelectronic circuits from the surrounding environment.

Exact Dispensing VC-18 Vacuum Chamber System: This vacuum chamber designed to create a vacuum environment while dispensing encapsulant to insure void free coverage.

1. Chamber size: 457mm^2
2. Vacuum range: Down to 2 Torr
3. Mixer volume: 400mL
4. Mix ratios available: 1:1, 2:1, 3:1, 4:1 & 10:1
5. Charge: $60/hour (academic)



SST 5100 Solder vacuum oven: The programmable vacuum furnace is routinely used to obtain void-free solder joints without the use of flux. It is presented here as the tool used for hermetic lid sealing.

1. Hermetic package sealing
2. 80Au20Sn recipe w/ <1% voiding established
3. Vacuum down to 50mTorr
4. Gas backfill pressure up to 40 psig
    a. N_2 & Forming gas configured
    b. Ar & He optional
5. Operating temperature up to 450°C
6. Forming gas (4 to 5% H_2/N_2) equipped
7. Formic acid cleaning step established
8. 300mm^2 graphite heated working plate

Fisher Isotemp 281A Vacuum Oven: The Fisher Isotemp vacuum oven is used to cure epoxies, encapsulants, solders, and other materials that do not give off chemical residues.

1. Chamber area: 200mm x 200mm
2. Operating temperature: Up to 280°C
3. Charge: $3/hour (academic)

Diener electronic PICO 5: A plasma ash chamber tool plumbed with oxygen (O_2) to selectively remove organics then argon (Ar) to remove any oxide created during the oxidation run.

1. Work size: 125mm x 300mm
2. Power: 150W
3. Charge: $10/hour (academic)

HIGH DENSITY ELECTRONIC CENTER
700 RESEARCH CENTER BLVD
FAYETTEVILLE, AR 72701

TELEPHONE: 479 575 2519
INFO@HIDEC.EDU
WWW.HIGH-DENSITY-ELECTRONICS.UARK.EDU