

Low Temperature Top Seal for the LAPPD Project

Dean Walters

Bob Wagner

Argonne National Laboratory

Marc Kupfer

J. Ernesto Indocochea

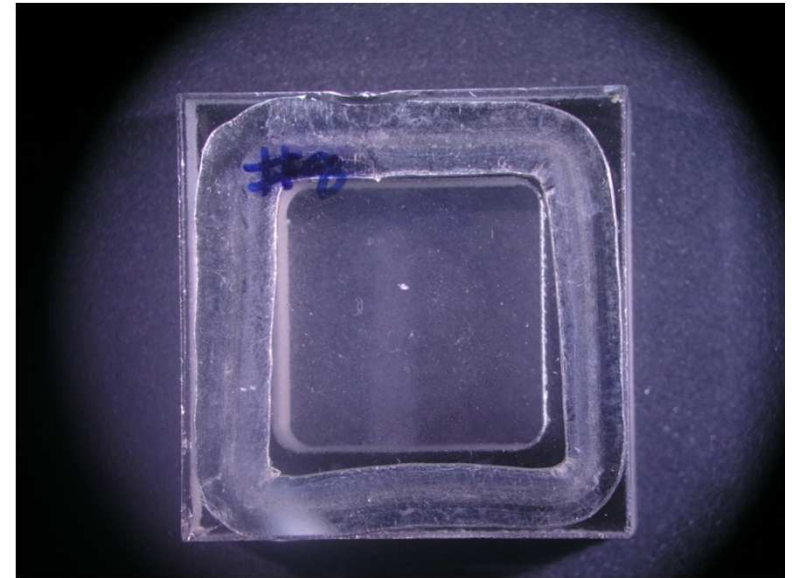
Alcides Raraz

University of Illinois - Chicago

Past Successes with a compression seal

1 inch Sample Parts

- With a loading of 800 lbs, seals have been made between both glass and NiCr coated glass substrates.
- The seal filler was pure indium in the form of .062" diameter wire
- These seals were made in air.
- All the parts were cleaned in acetone and alcohol.
- At loads of 600 lbs and lower the joint between the ends of the wire became a problem.
 - Although there is evidence that a seal was made at loads as low as 300 lbs .



800 lbs – 100 In – 20°C – 1 minute

Future Plans

- Investigate the reduction and removal of the oxide layer on filler material and the substrate coatings.
- Continue to try tests of wire joints.
- Look at a other coating materials such as: chromium and aluminum
- Start to do the tests in the in vacuum rather than in air.



Plans in Parallel

- Continue to pursue the soldering method
 - The system above has a heating capability to perform soldering in vacuum
- Fab samples that do not use flat surface to compress the seal, these samples will use beveled edges. It will be investigated that by applying the load in a small area improves the seal performance.