Curing Silicon Gel

Elizabeth Chen

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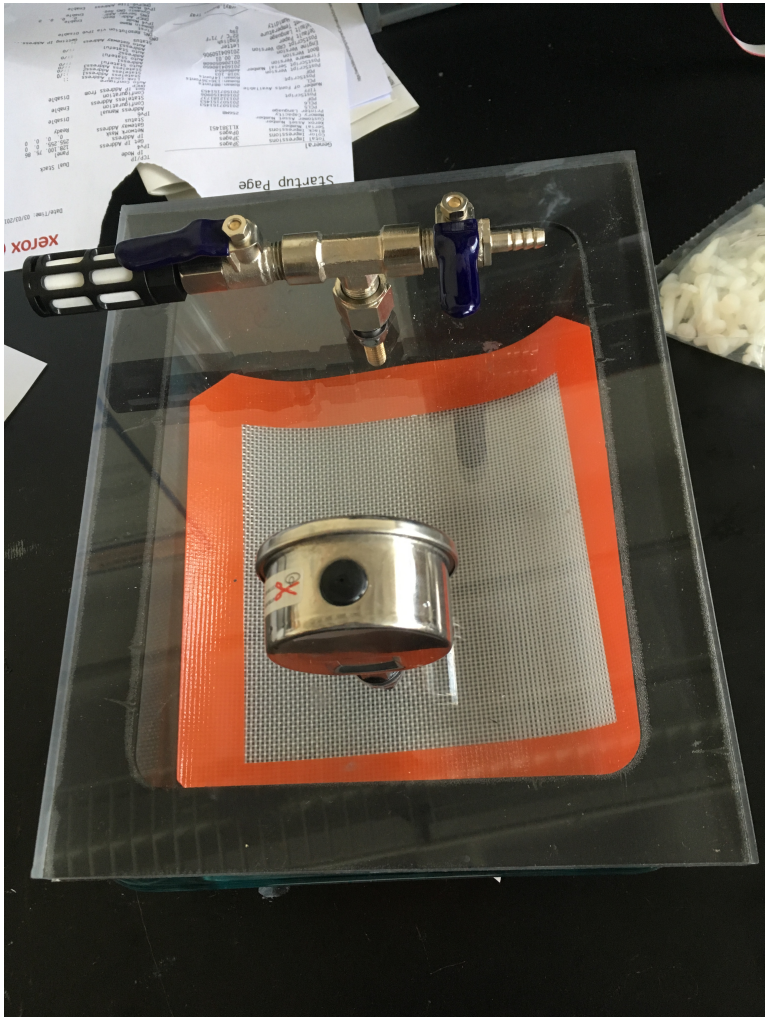
Haider's Vacuum Chamber

- Located in the lab room on the 8th floor
- Suitable for deaerating the gel

Haider's Vacuum Chamber

Vacuum Pump



Chamber

Initial Attempts...

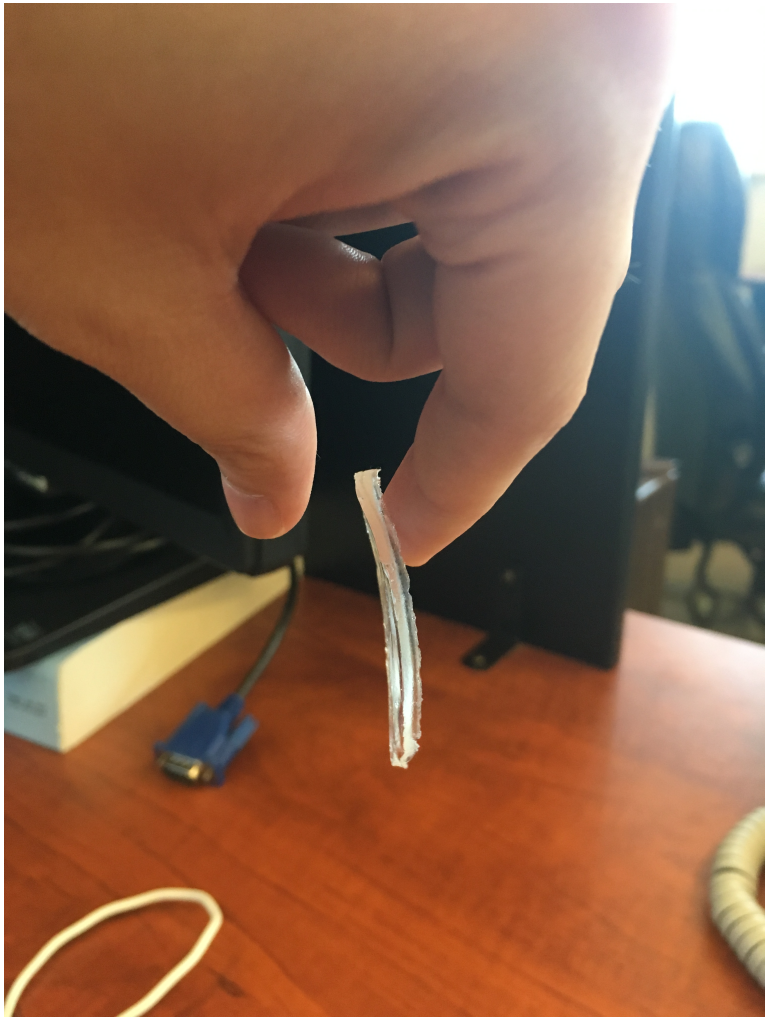
- Attempted to make mini gel pucks
- Worked with 1:1 mixture of Compound A and B
- Used cardboard and plastic ziplock bags to make gel mold
- Deaerated for 15 minutes

Initial Attempts...

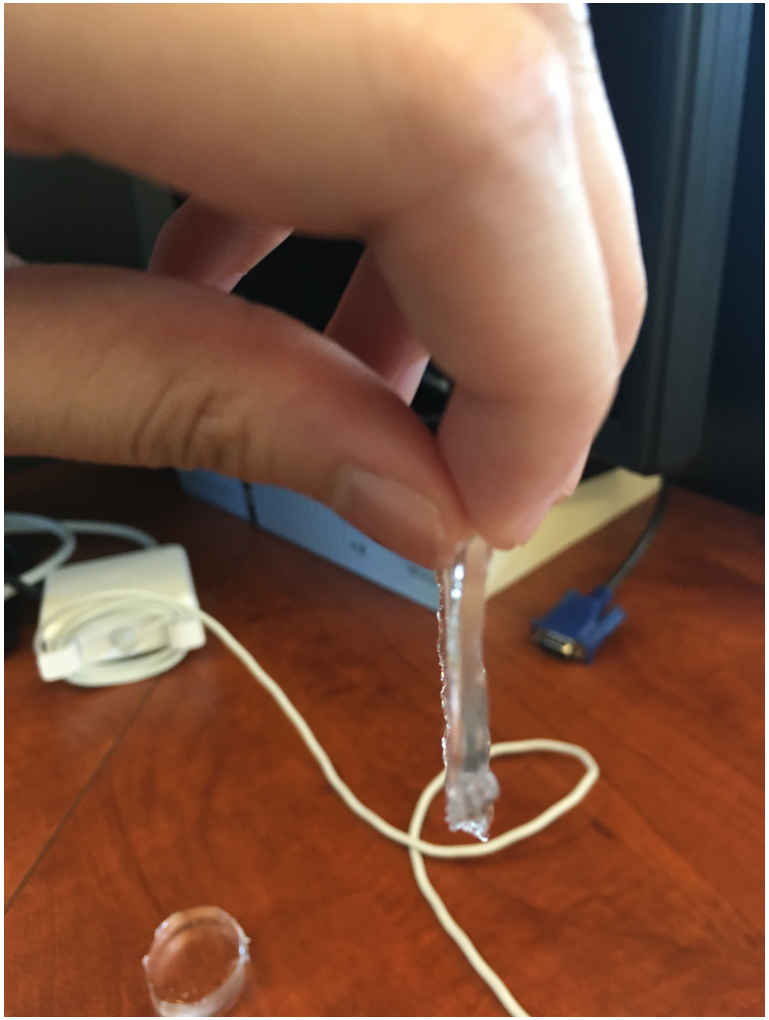
Plastic ziplock bag + cardboard gel mold

Bubbles leaving gel during deaeration

Products from Initial Attempts



Products from Initial Attempts



Products from Initial Attempts

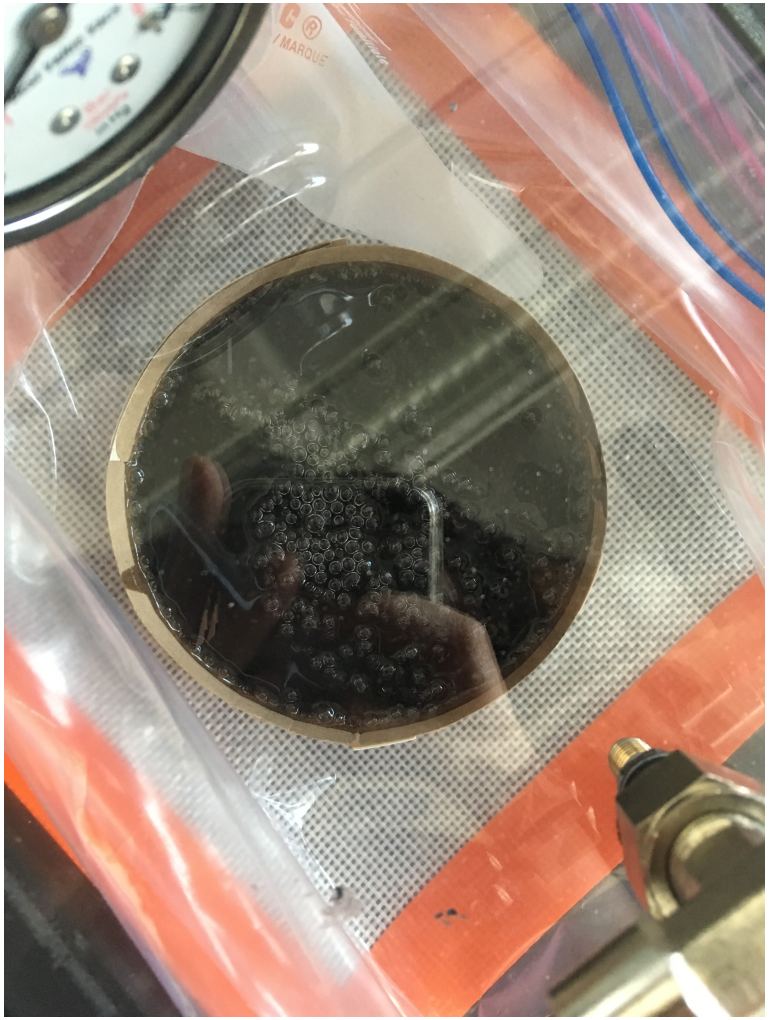
Some Thoughts on Initial Attempts

- After hardening, gel was sticky
- Difficult to peel finished gel off of mold
- Shape of the gel wasn't "perfect"
- Vacuum system worked well with removing air bubbles

Second Attempt

- Made 10 cm diameter disk for gel mold
- Changed to a roughly 2:1 mixture of compounds A and B
- Deaerated for 15 minutes

Second Attempt



Products of Second Attempt

Some Thoughts on Second Attempt

- Gel was less sticky than first try
- Easier to peel off of mold
- Gel surface had marks because of the marks on the disk

Undergraduate Engineering Research Day

- Conference for undergraduate engineering students to showcase summer research work with faculty members, fellow students, and high school students
- Gave a podium presentation on my project this summer

Future Directions

- Transmission studies with 3-inch PMTs used in the detector
- See how mixing ratio or other gel-curing conditions affect final gel transparency

Next Steps

- Away from the 18th to the 25th
- Continue to cure silicon gel
- Complete work term report