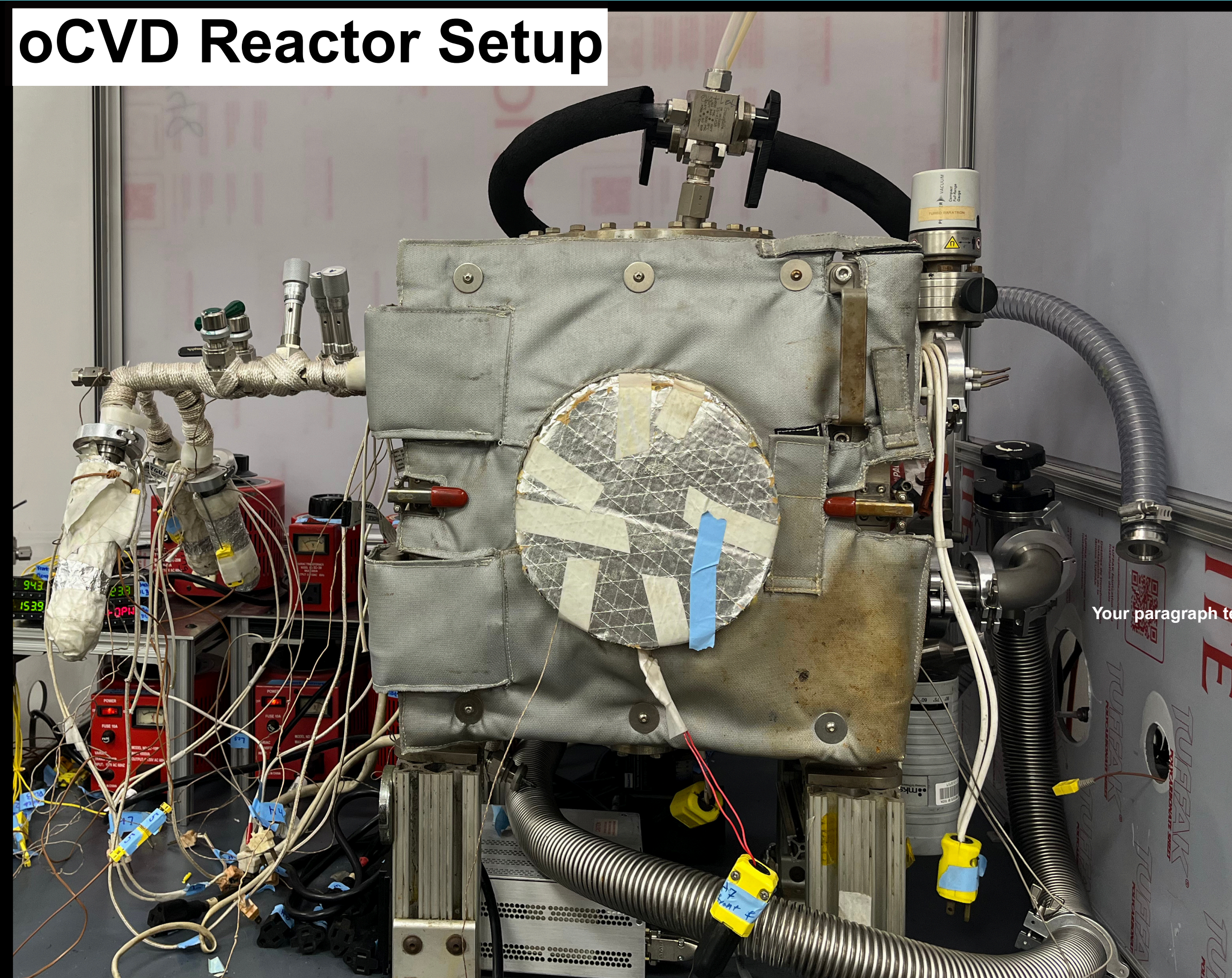


Assembly of the oCVD Reactor

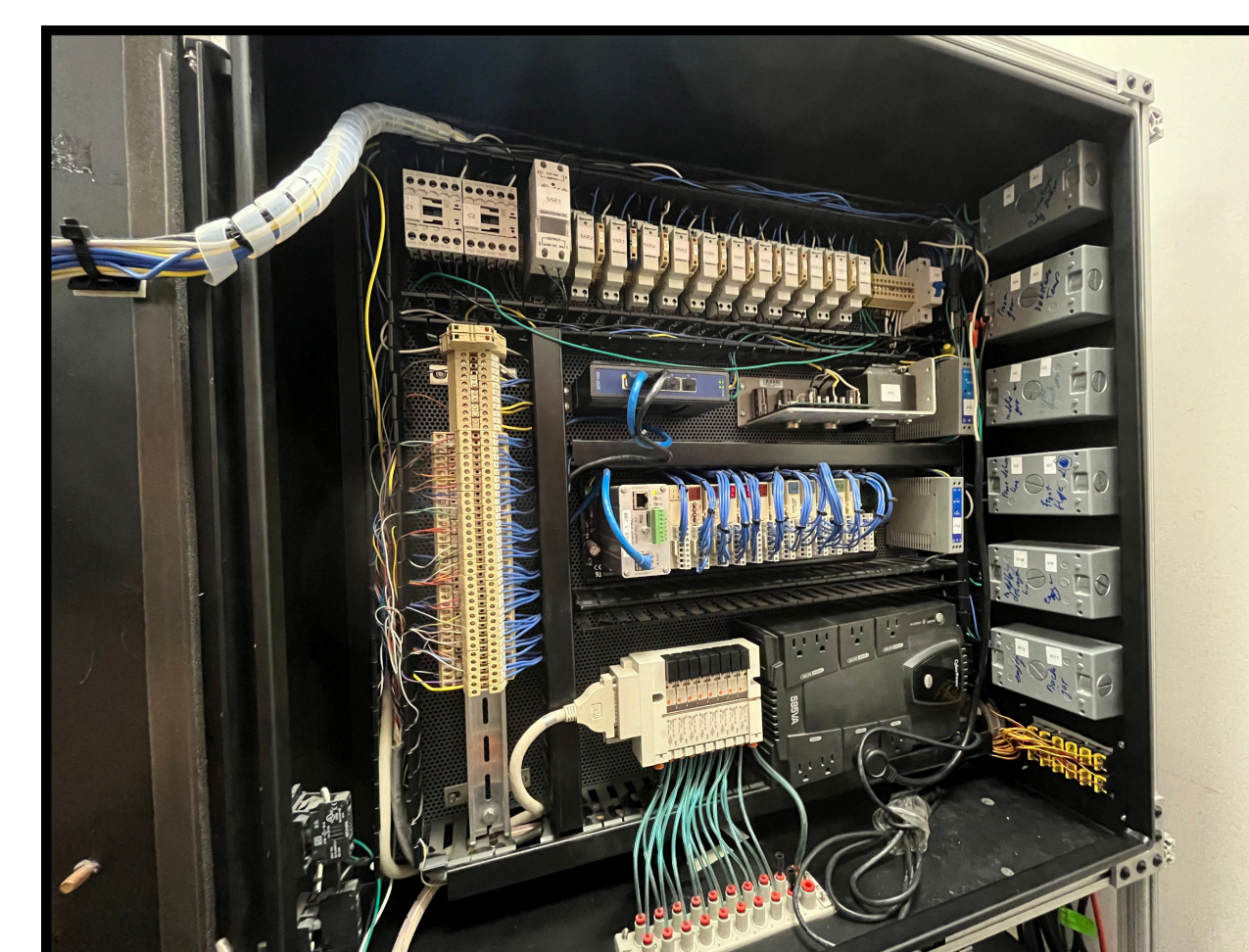
Project Overview

- oCVD reactor produces semiconducting polymers for energy devices.
- Project goal: Assemble a complete reactor system.
- Reactants are vaporized by heating, then sent to a chamber at 200 °C and 15 mTorr.
- PID controller regulates pressure and temperature via valves and relay.
- Once stable, vapor reactants polymerize on the substrate to form conductive films.

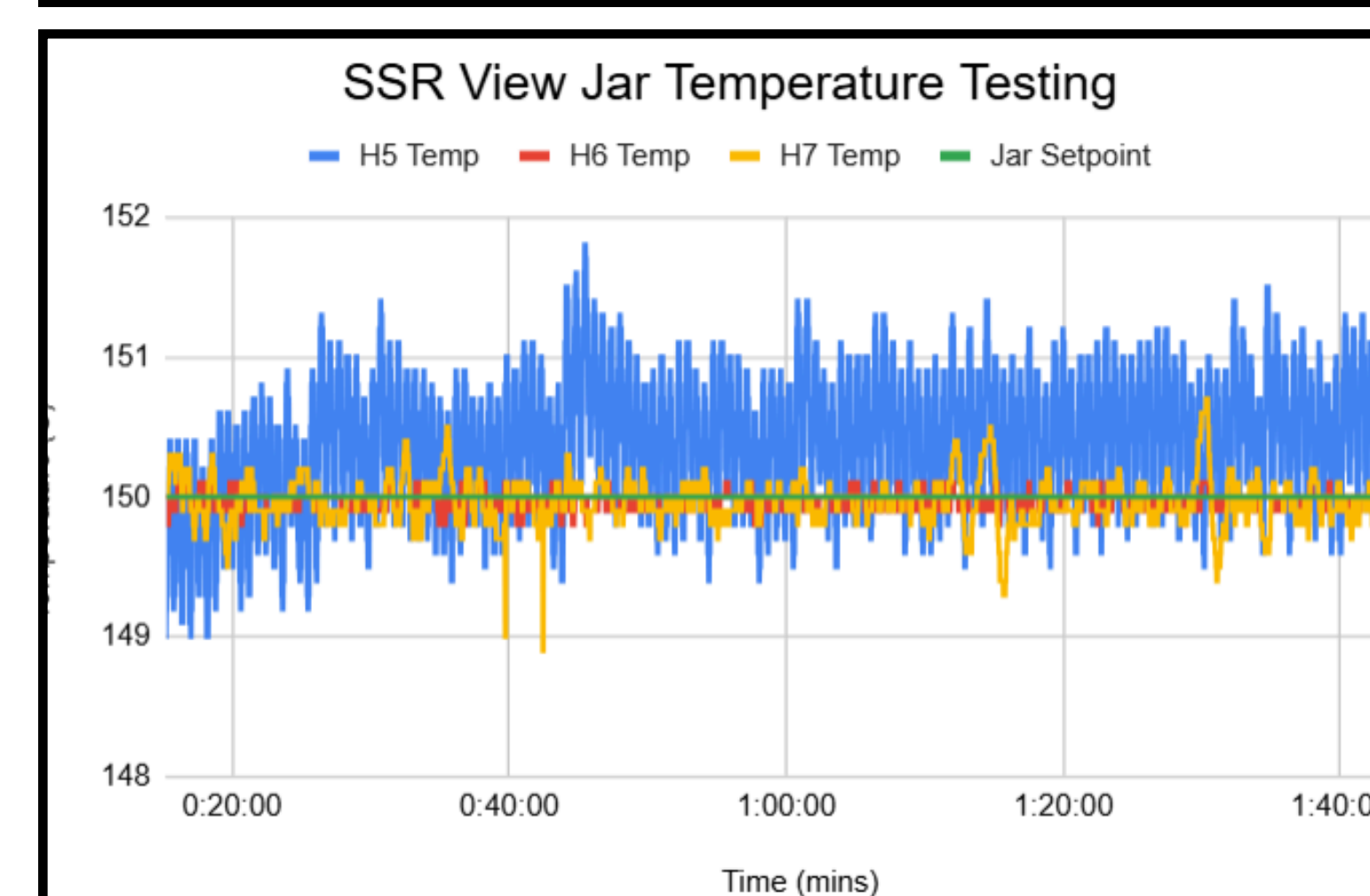
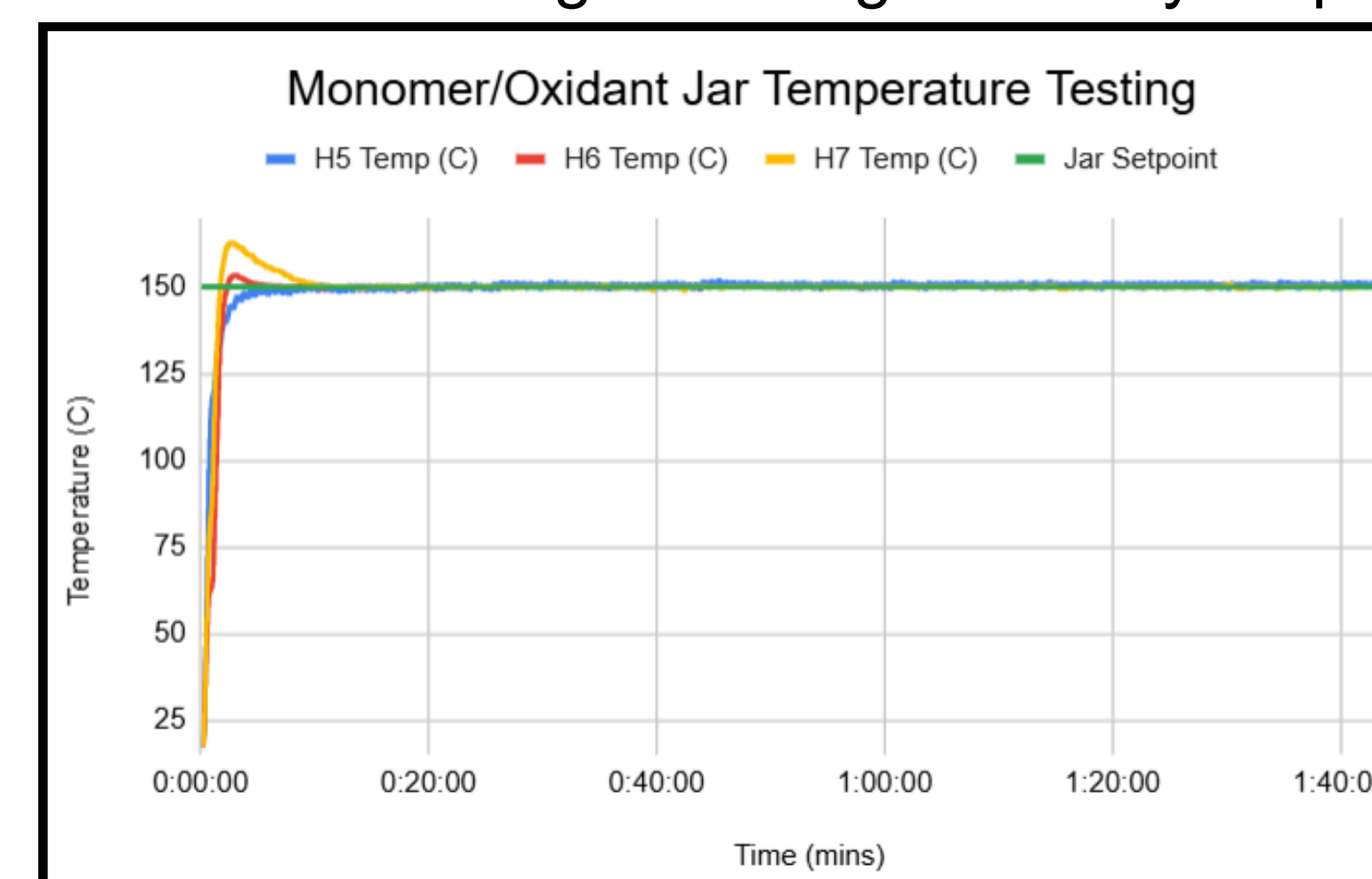
oCVD Reactor Setup



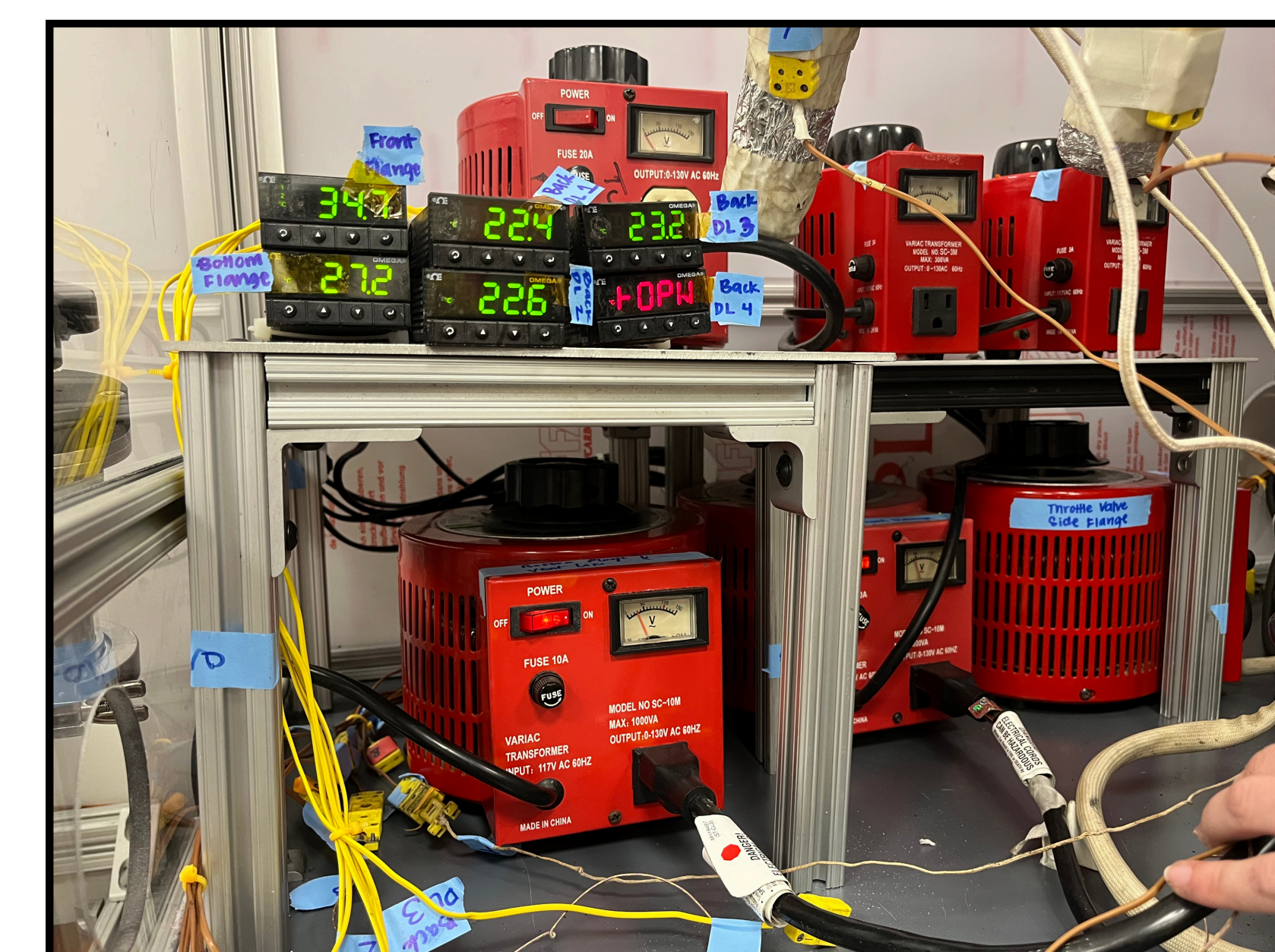
Testing



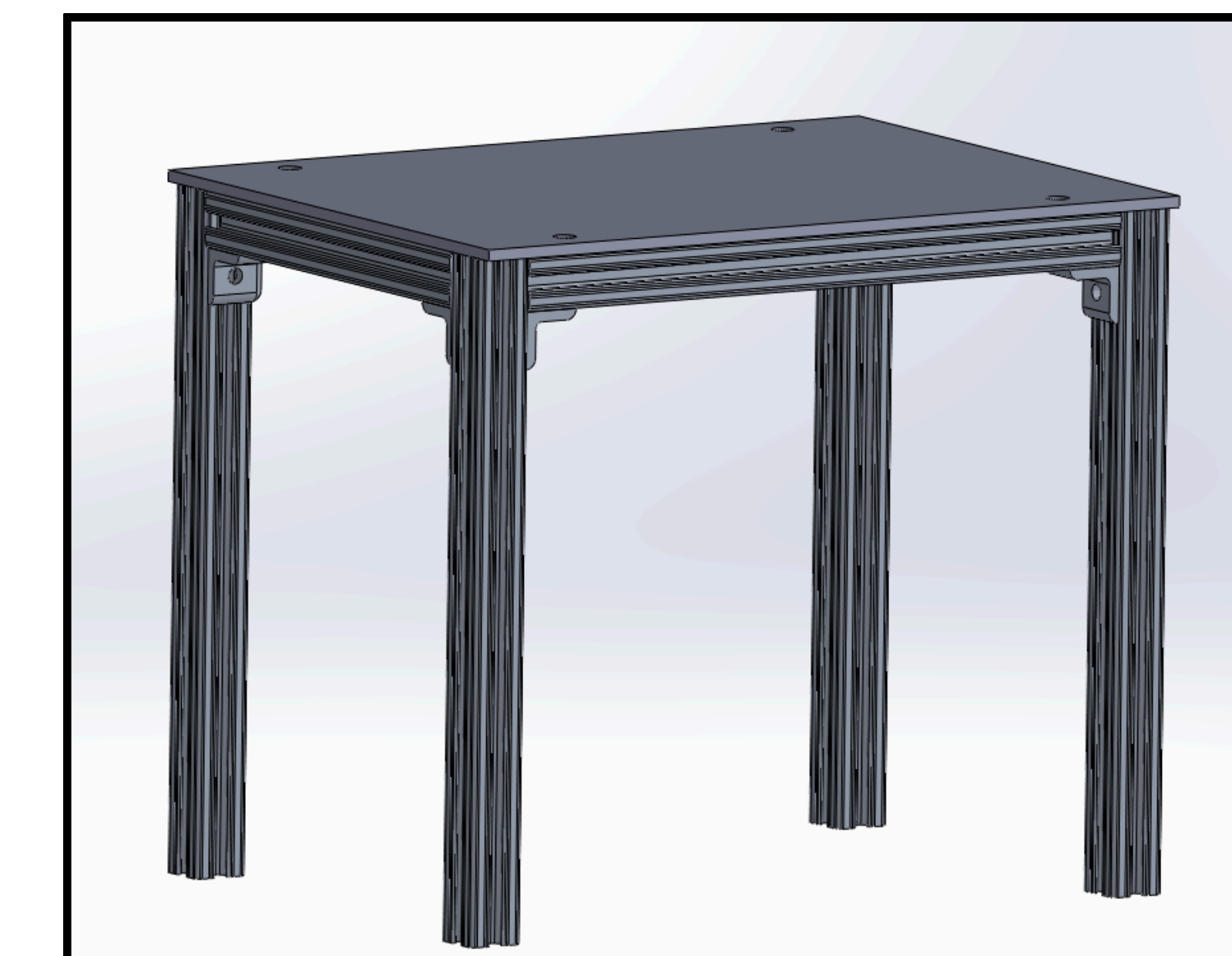
- PAC Display monitored and controlled temperature
- Control box managed testing and relay response.



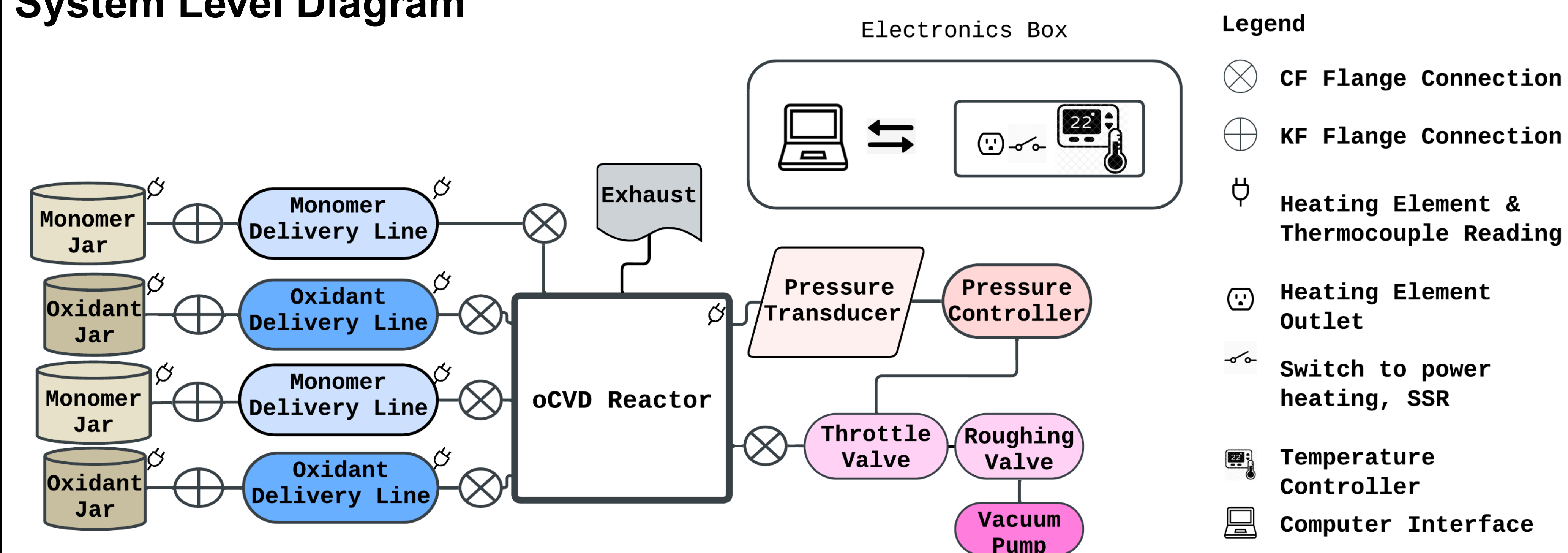
Manufacturing



- Table stands built for equipment organization.
- Made from T-slot bars and sheet metal.
- Water-jet and bandsaw used for fabrication.
- Hold Variac transformers and temperature readers.



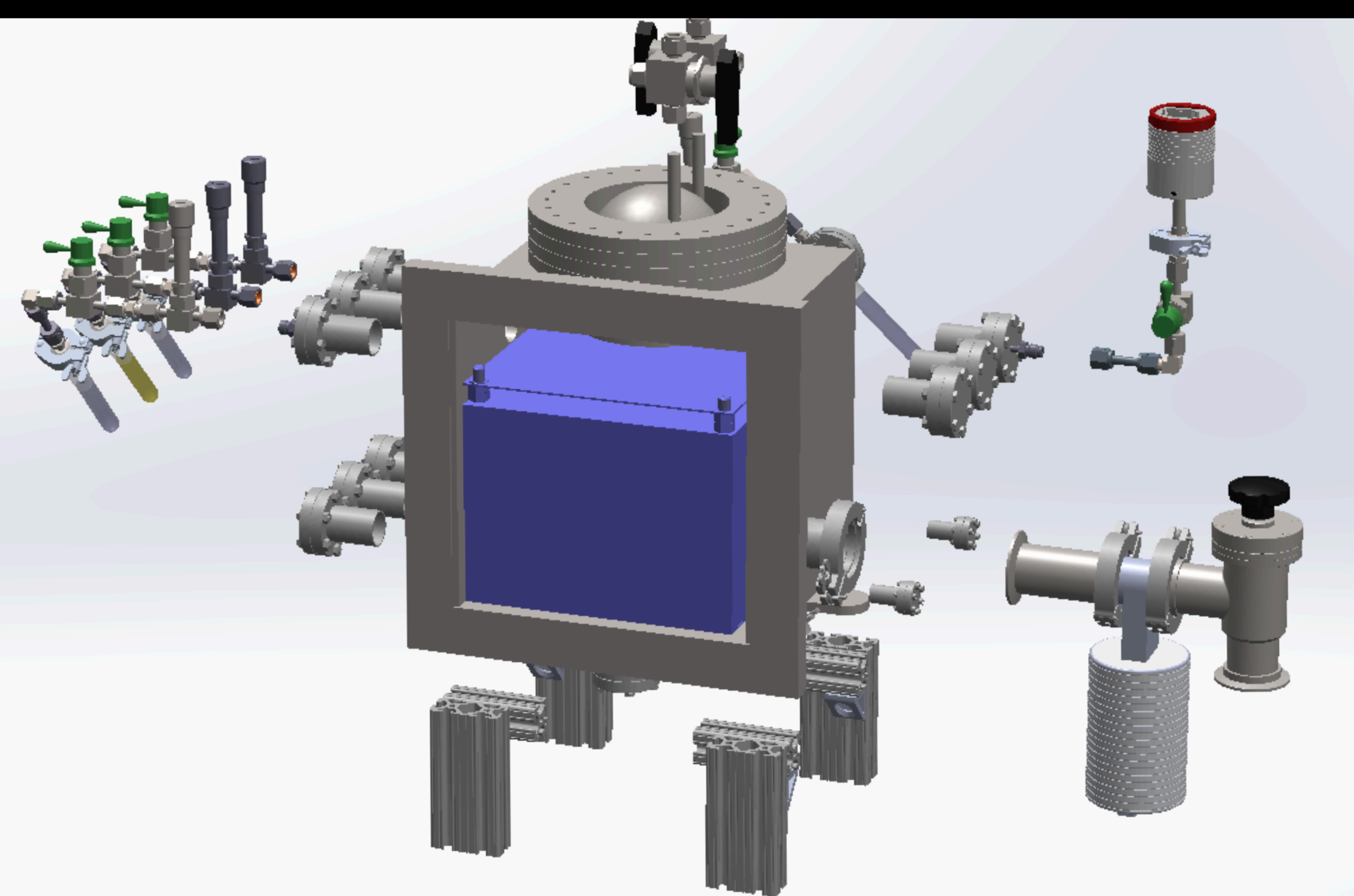
System Level Diagram



Acknowledgments

The team would like to thank Dr. Scott Shaffar and Michael Lester of San Diego State University for organizing and providing assistance throughout this design process.

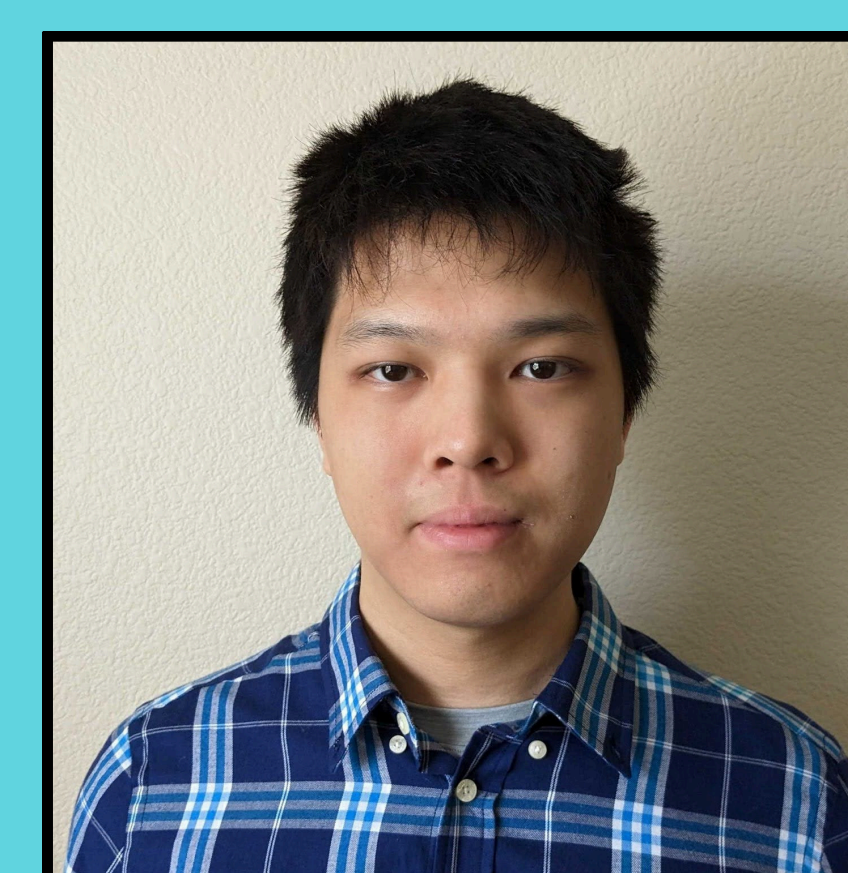
The team would also like to thank Dr. Meysam Heydari-Gharahcheshmeh, head of the AMED Lab, for the continuous support and help along the way.



Meet the Team



Katie Hardwicke



Derek Chan



Jacob Artolachipe



Ivan Sarabia

SPRING 2025