

Automatic Control of an Inertial Electrostatic Confinement Device

Rochester Symposium for Physics Students

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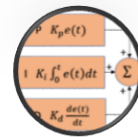
Fusion



Plasma Confinement



Houghton University Fusor



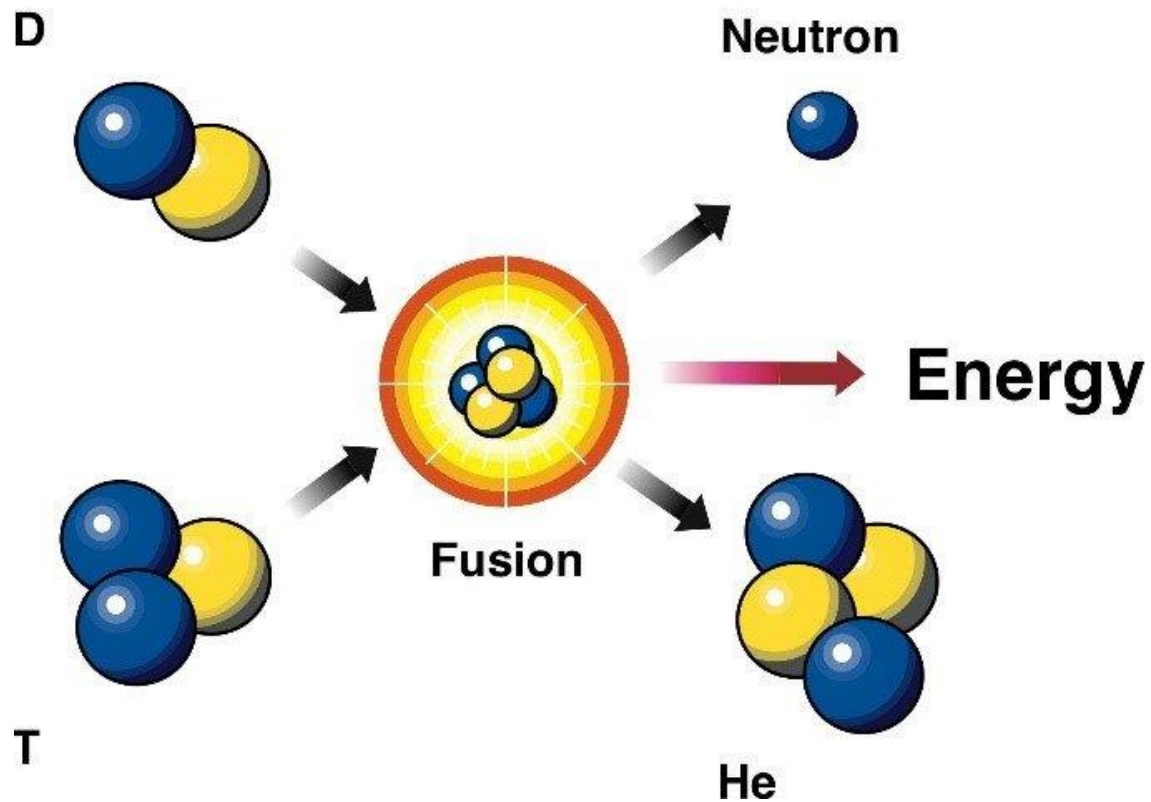
Automated Control



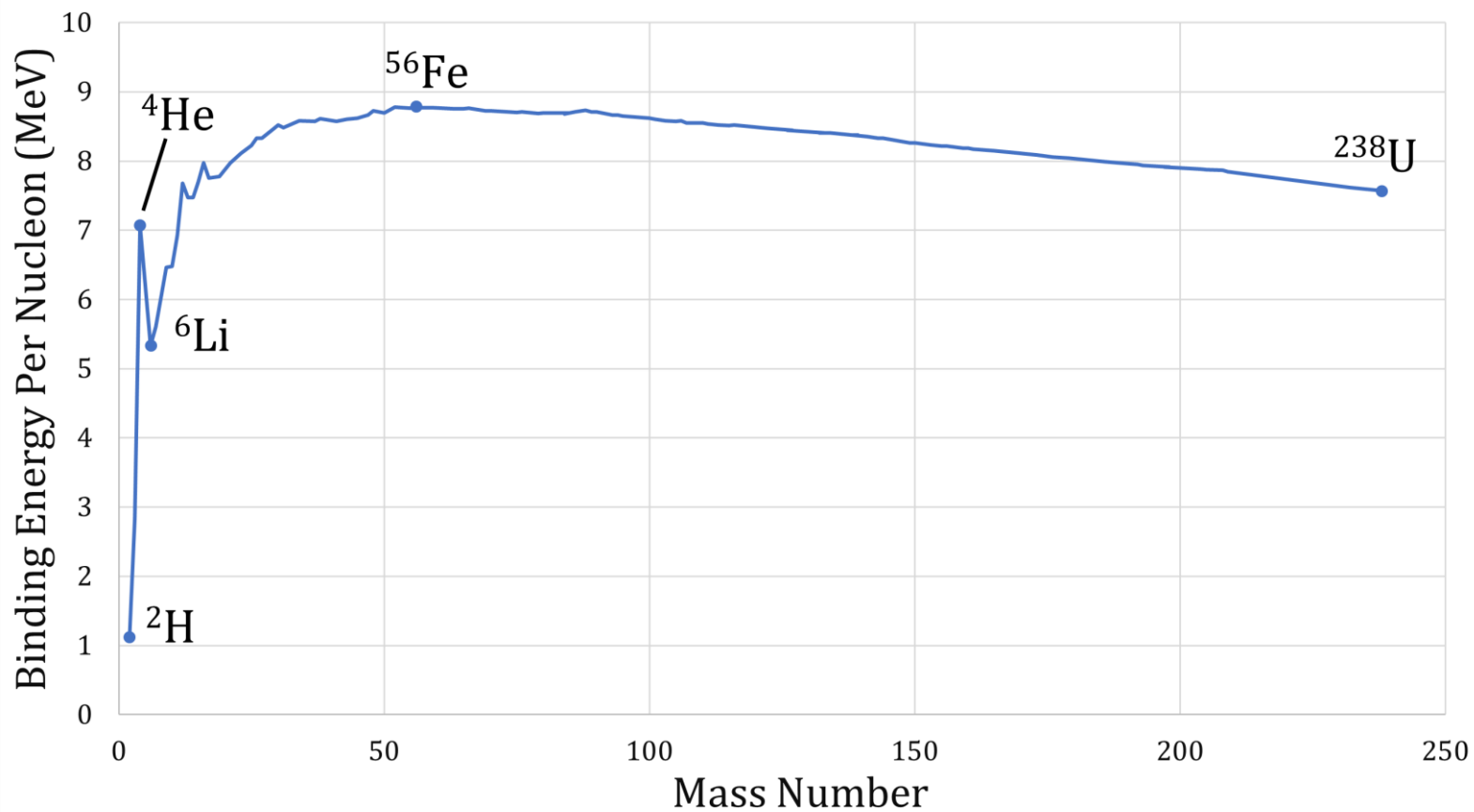
Next steps

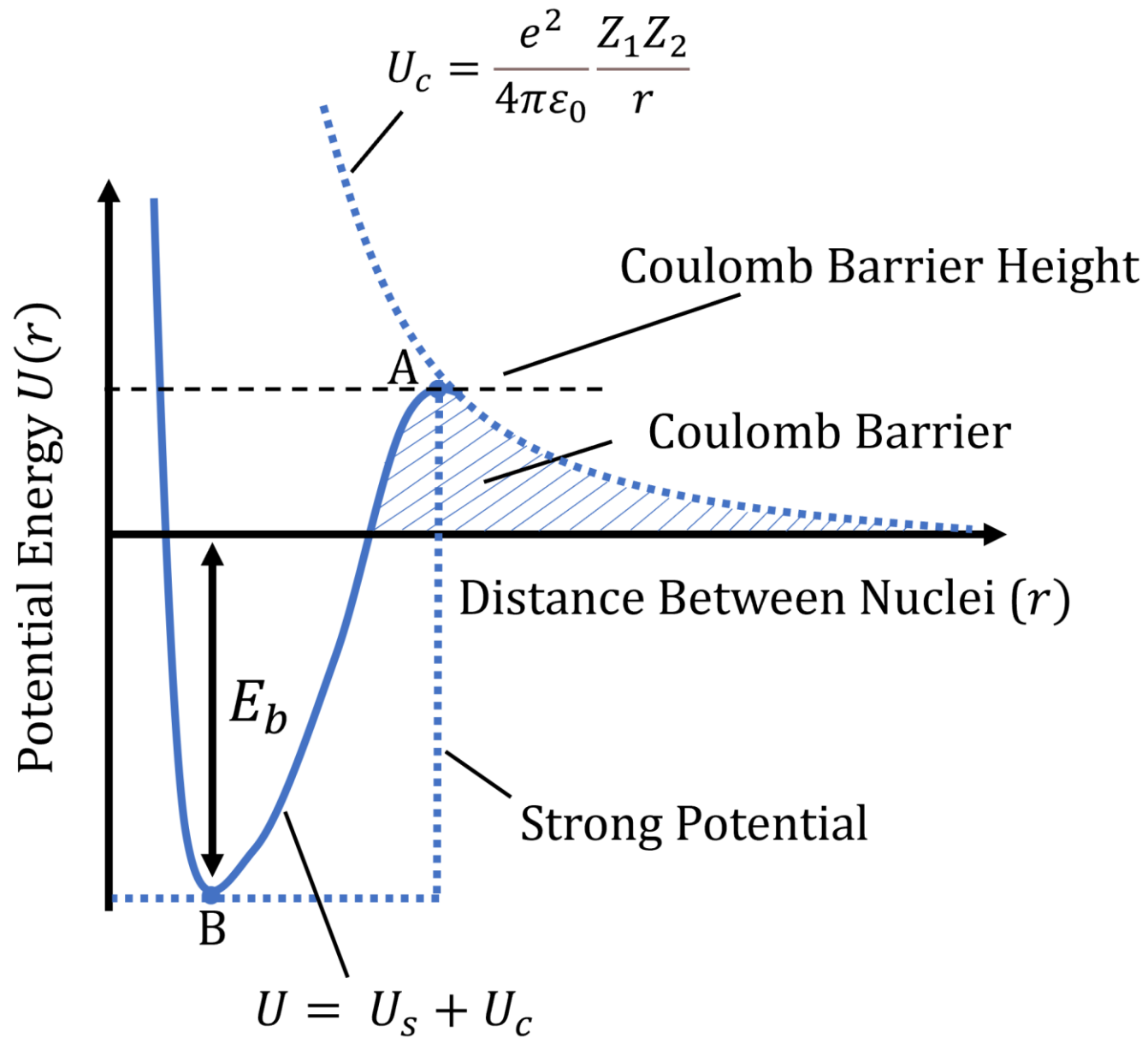


Fusion



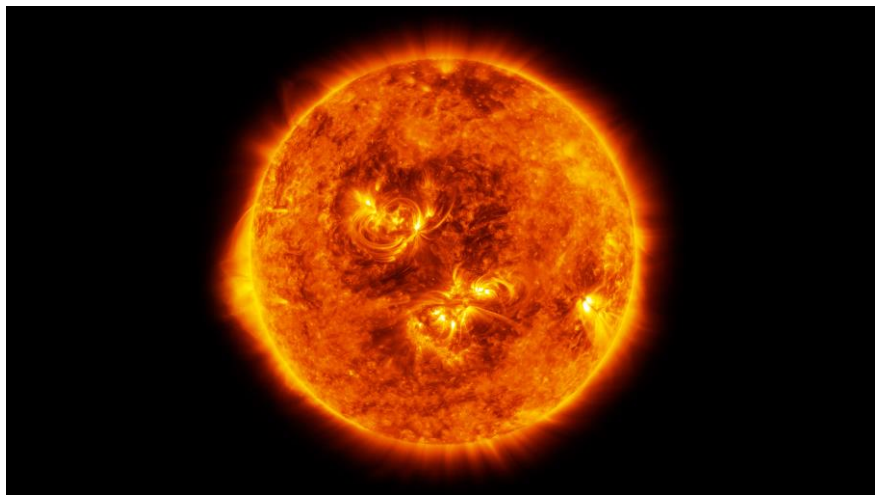
<https://www.energy.gov/science/doe-explainsnuclear-fusion-reactions>



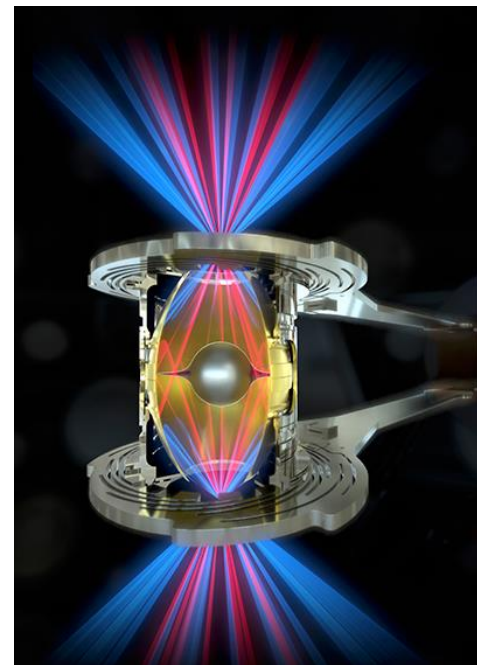




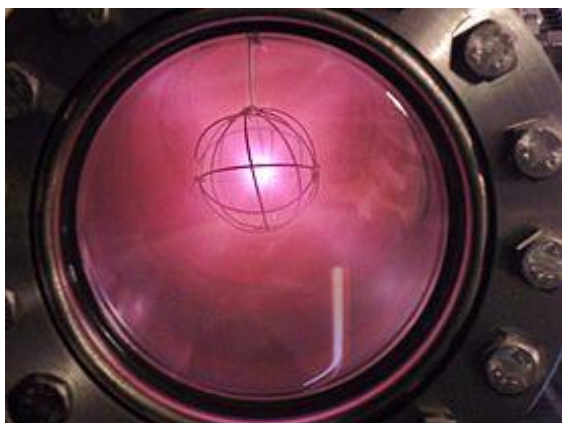
Confinement of Plasmas



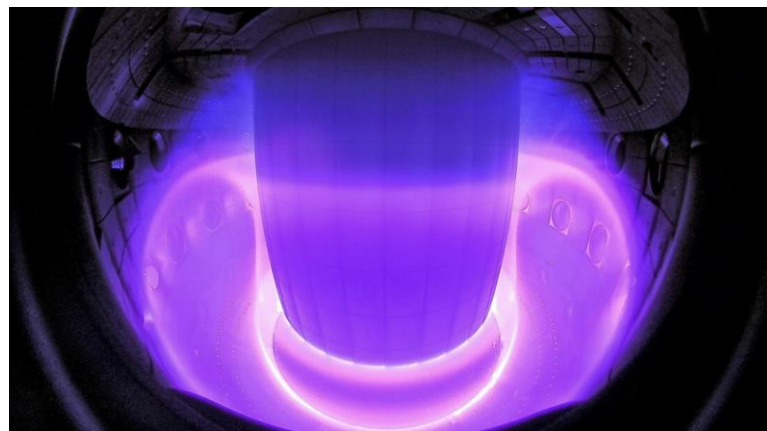
Gravitational Confinement



Inertial Confinement



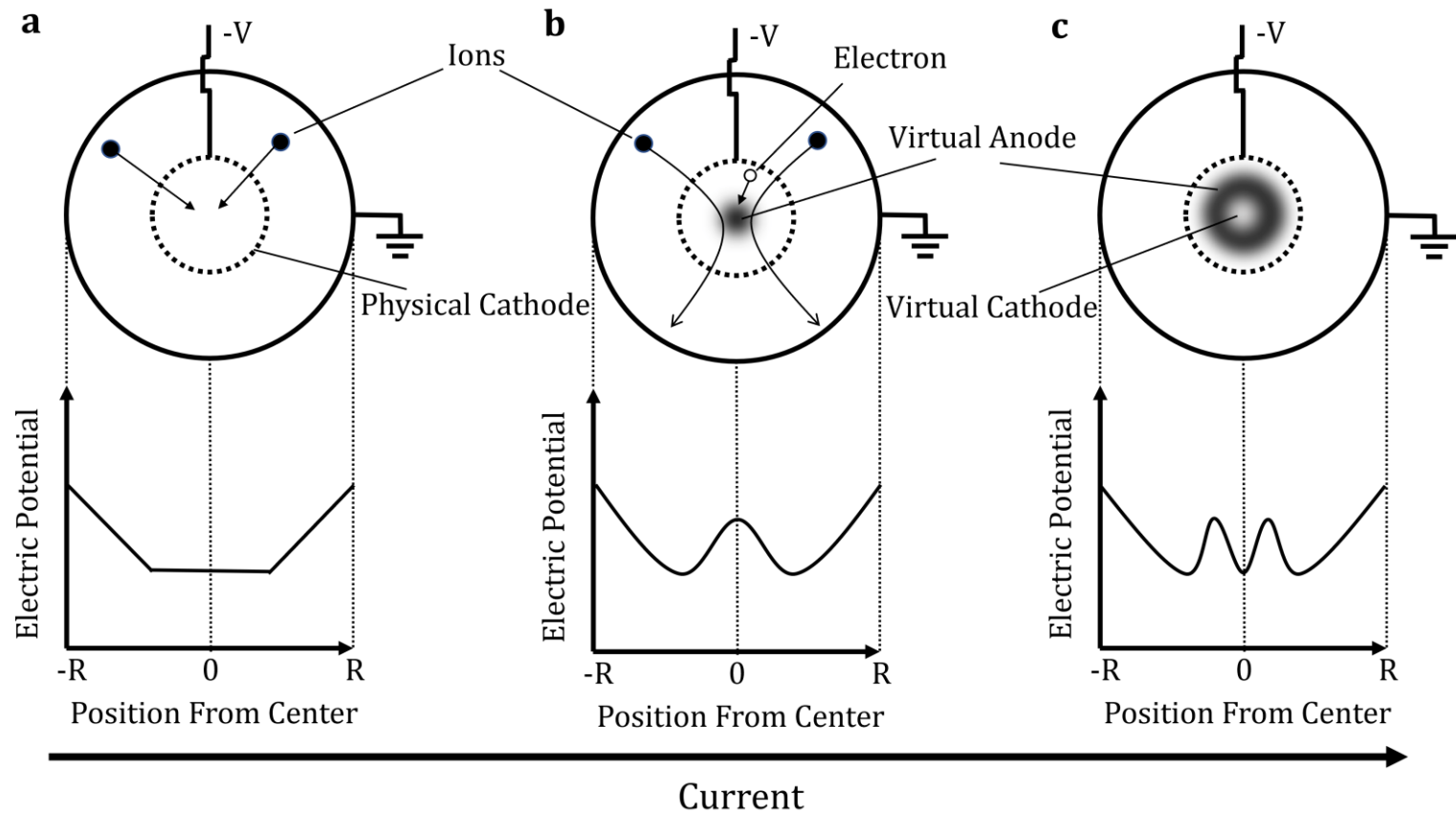
Inertial Electrostatic Confinement



Magnetic Confinement

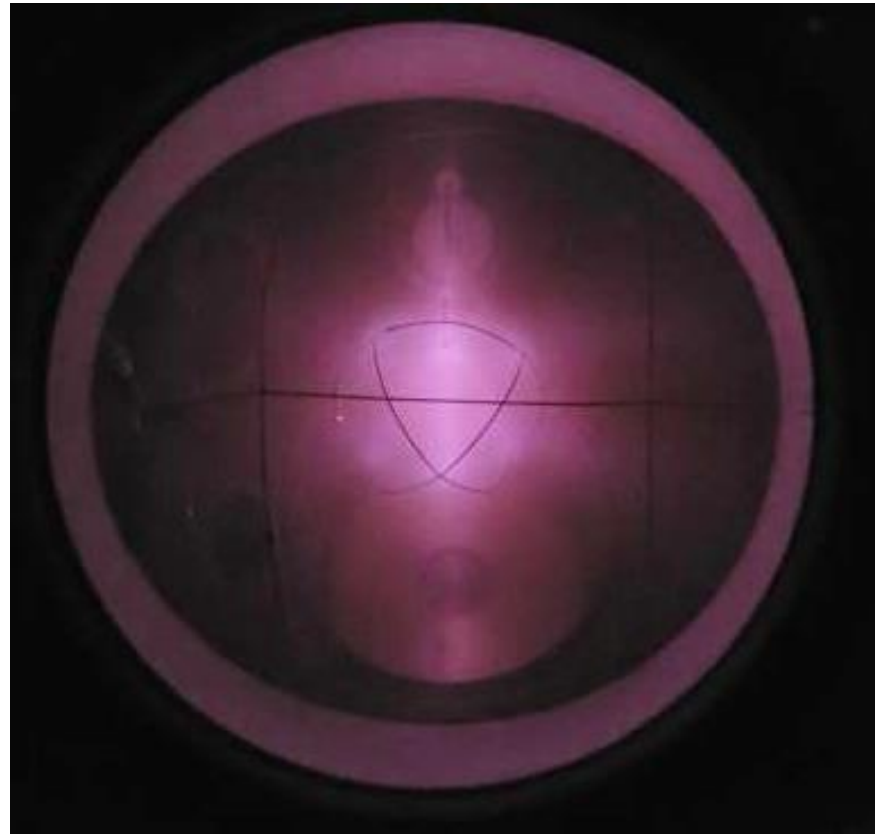


Inertial Electrostatic Confinement (IEC)





The Houghton University Fusor





Lab
Computer

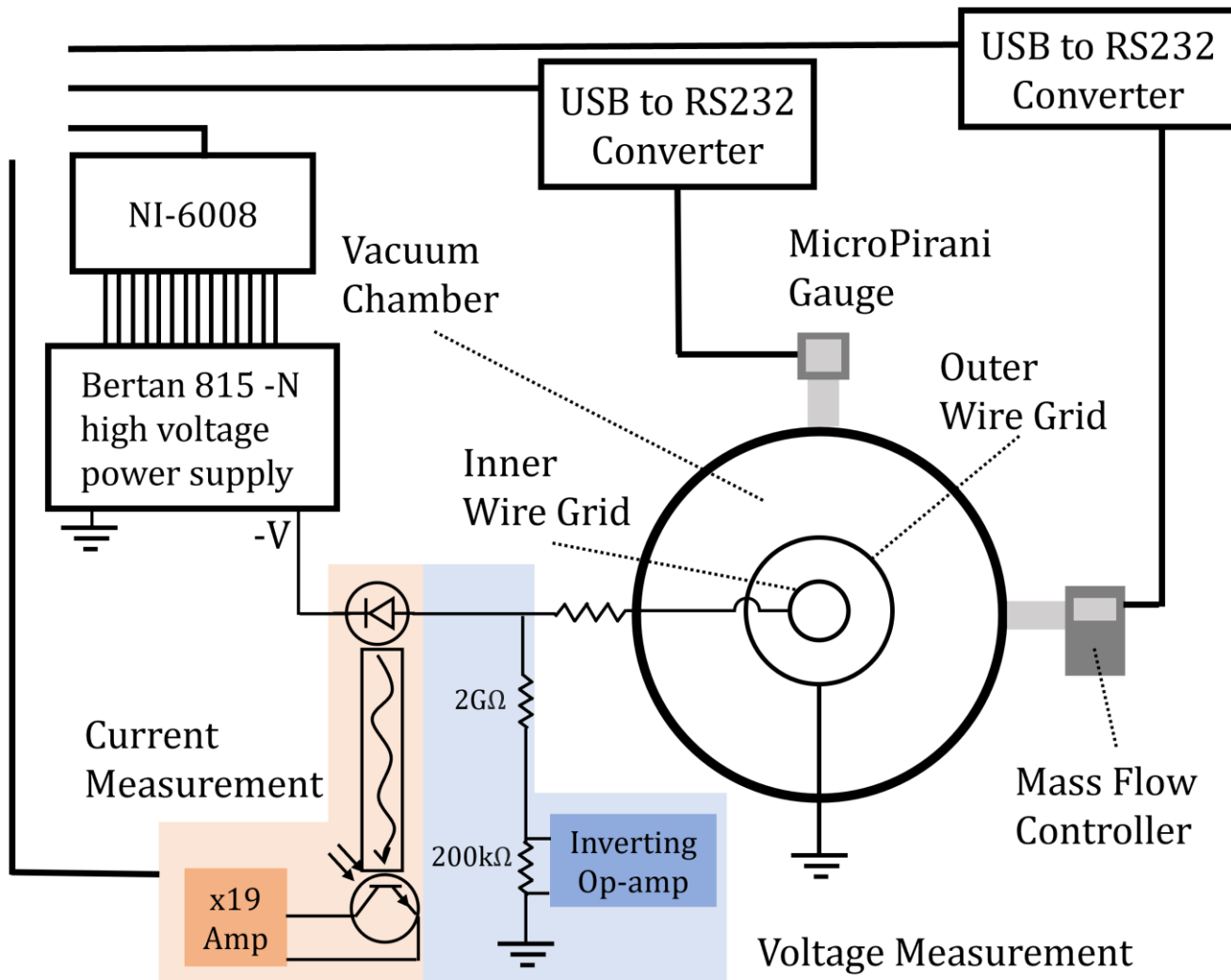


Ethernet

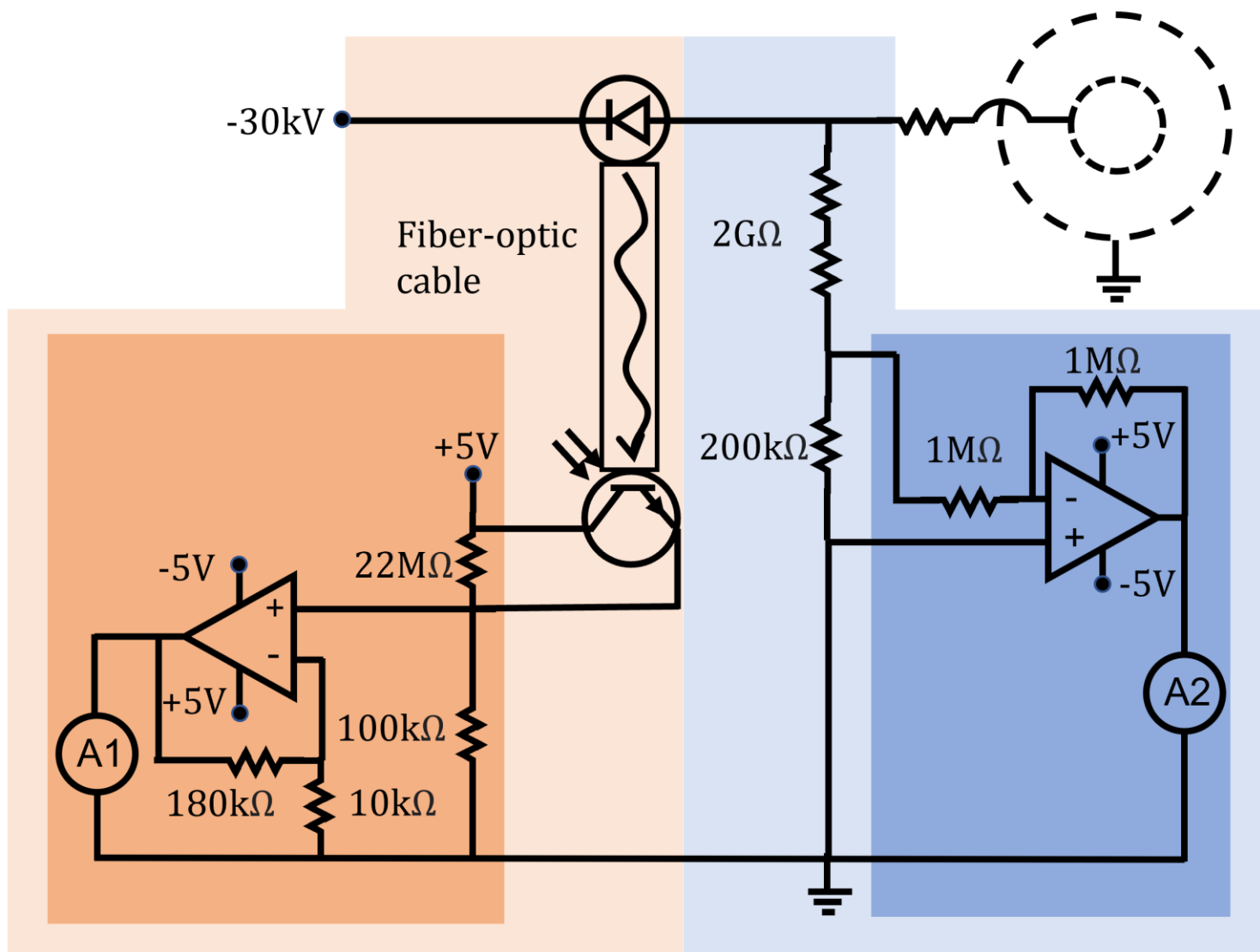


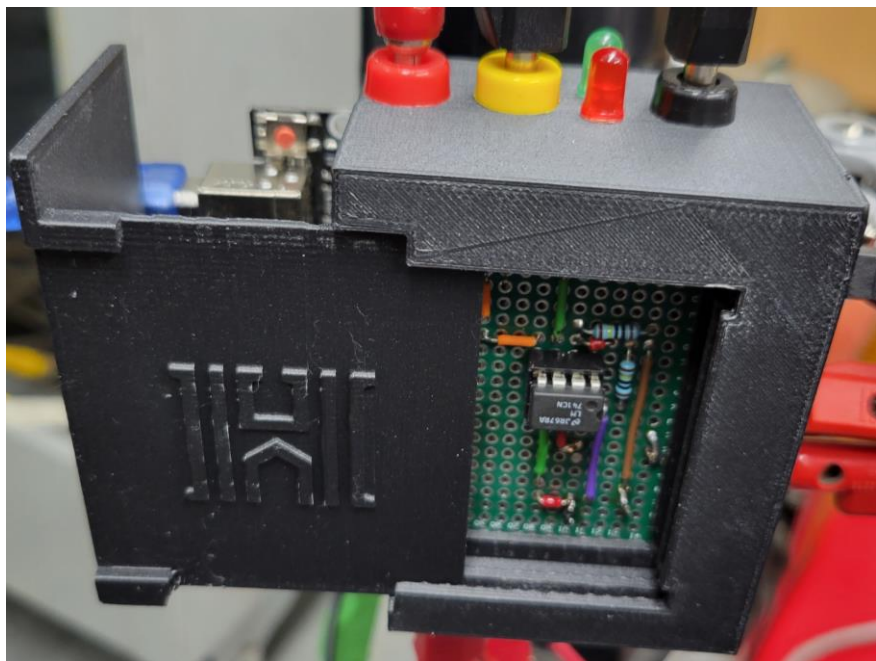
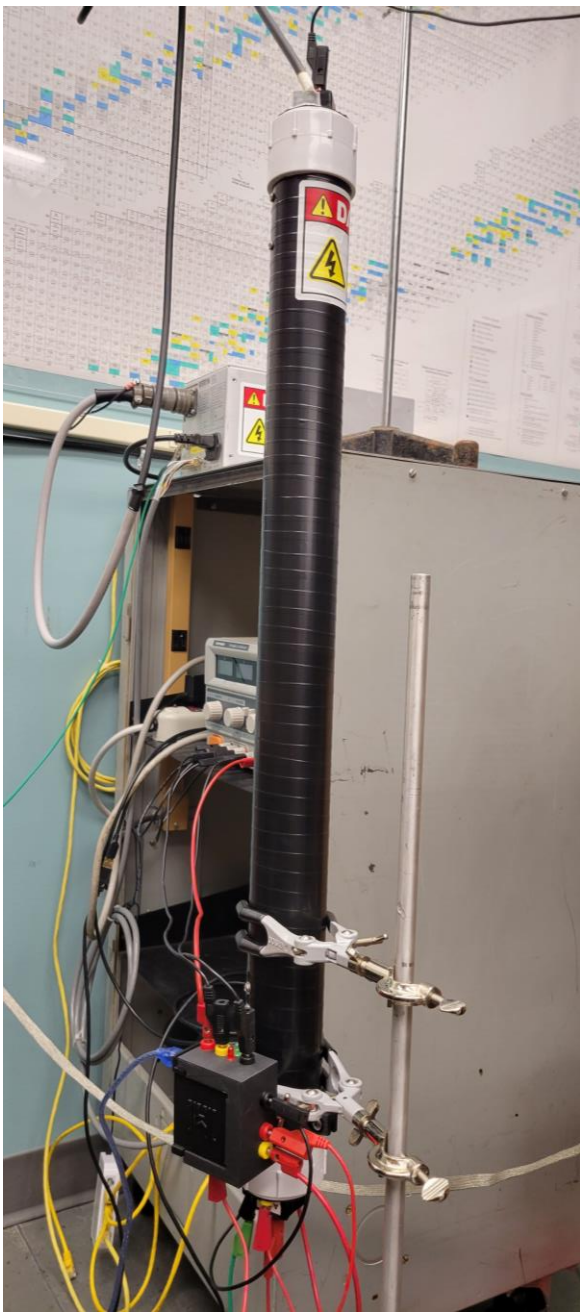
Remote
Desktop

Arduino
Readout



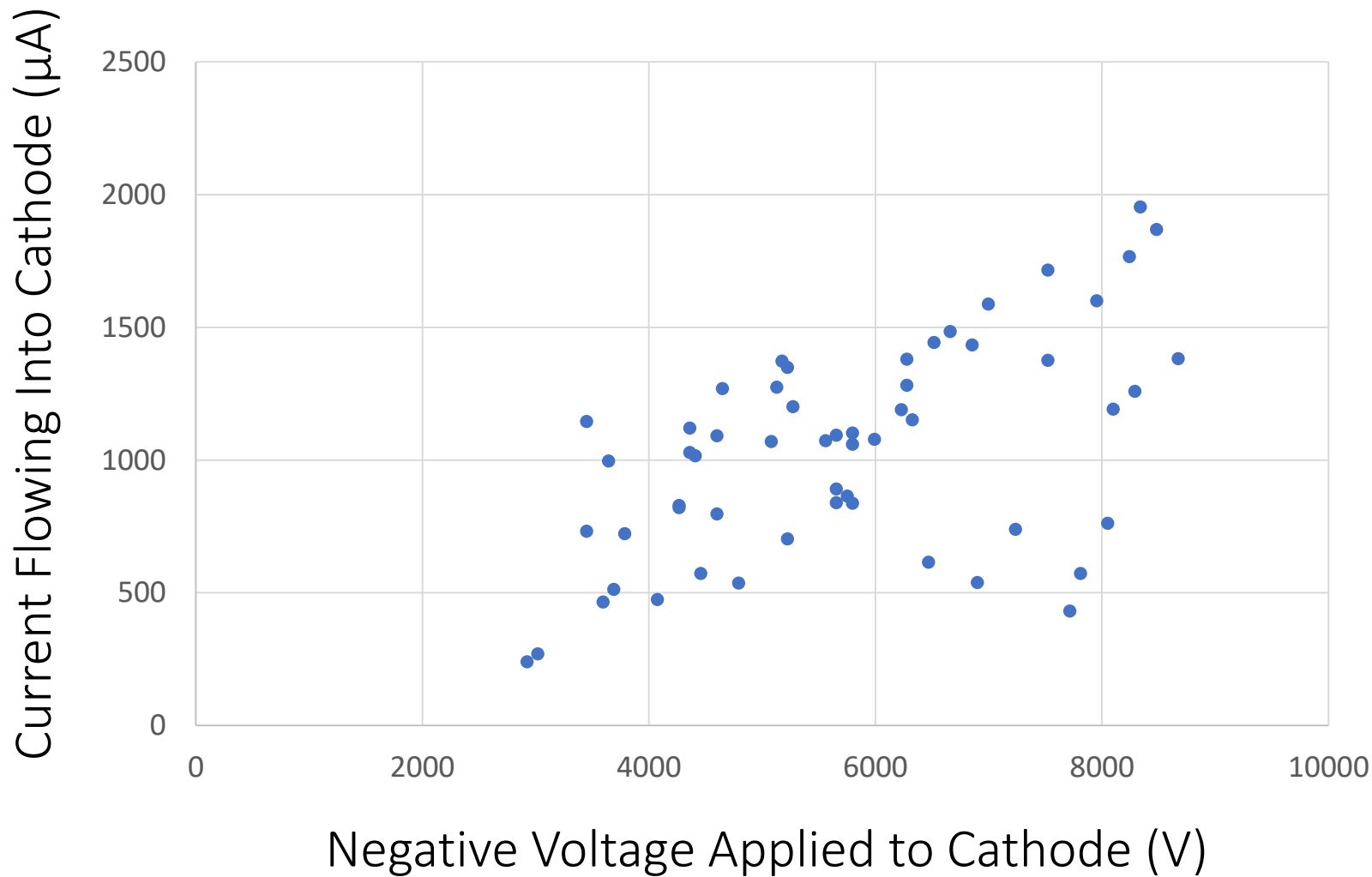
Measuring HV and Current

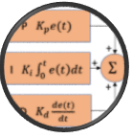




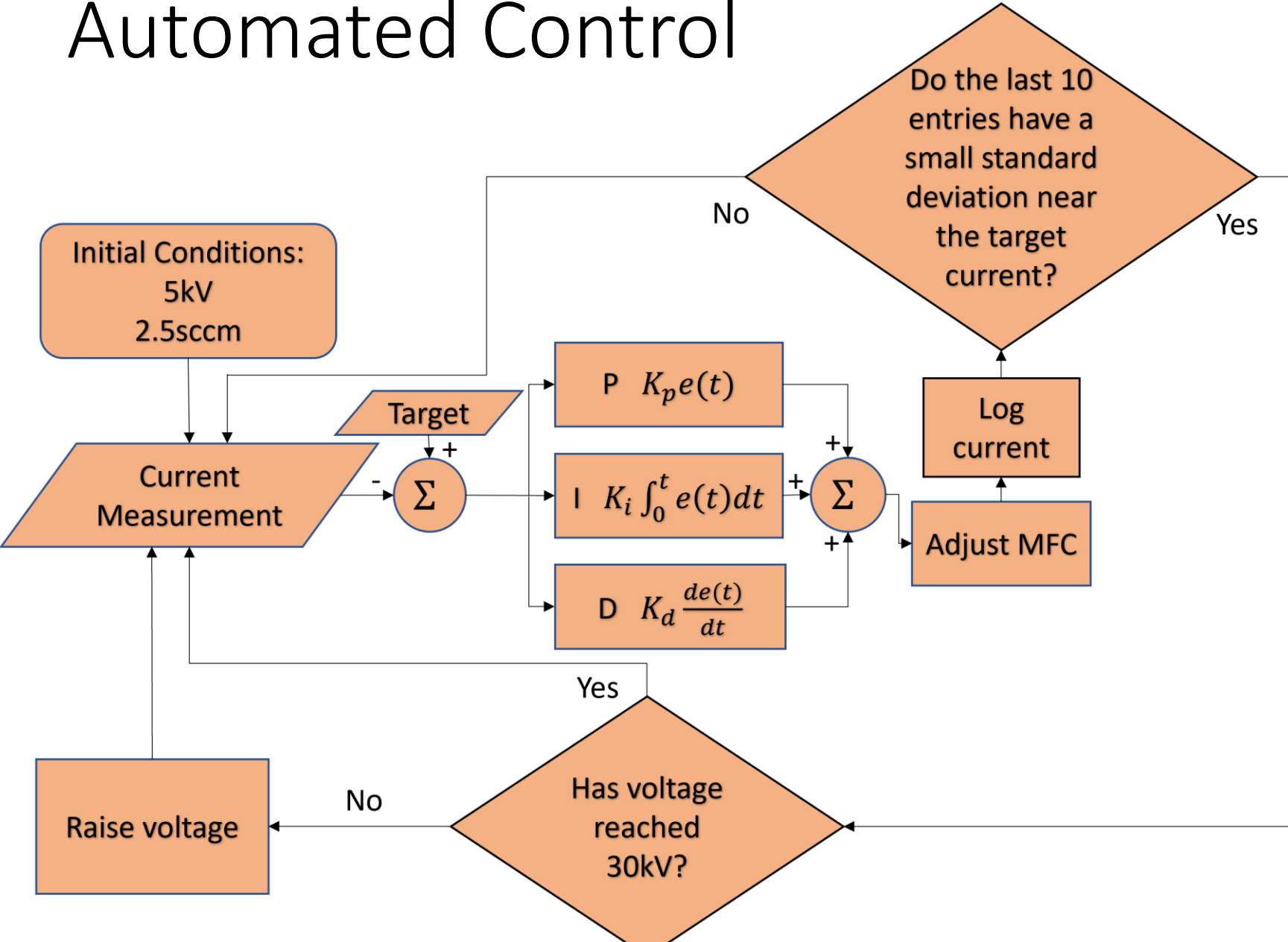


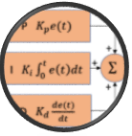
Manual Control



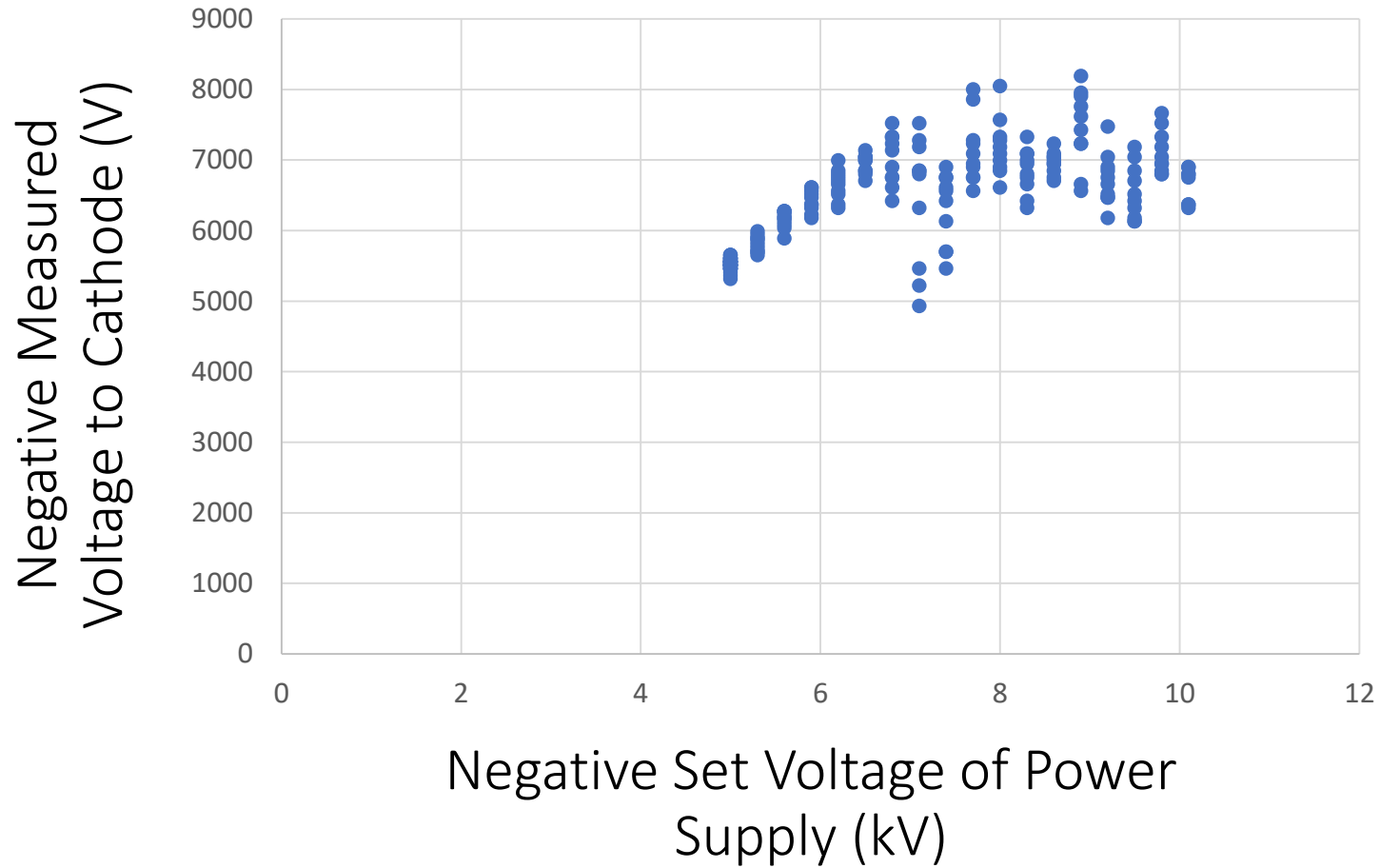


Automated Control





Failure Mode





Next Steps

- Fix automated control
- Hydrogen Tests
- Deuterium Tests

