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PY 681

Final Project Proposal

Title

Trapping Single Molecule in Break Junction

Abstract of Concept

This project will use the arduino microcontroller to determine when to send a signal out when certain thresholds are met. It will take three inputs, one is a voltage signal, one is the voltage signal differentiated, and another is a voltage signal that is the output of a current-to-voltage amplifier. When the derivative is larger than a certain threshold, and the fraction of the two voltage signals are within a range, the arduino will send out a signal. This signal, when utilized in an STM- break junction set-up, will tell a piezo nanopositioner to stop moving.

Parts Required (All can be found in the Lab)

- Arduino microcontroller board
- Breadboard
- Resistors
- Capacitors
- Op-amp
- Wires