Arduino Controlled Robotic Arm Utilizing Flux Pinning

Allen, Cason (School: Luella High School)

This investigation focuses on how discoveries can be integrated into the advancement of technologies. Broken up into the main four areas of study within this project, it will illustrate how each area is intertwined to form the final product, that being a robotic arm using superconductors within its joints. This idea can potentially be applied to robotic arms of various uses such as assembly lines of garbage trucks to eliminate any friction and wear between the mechanisms. Overall, the experimentation process consists of testing each robotic component within the time frame of the superconductor flux pinning with the present magnet. At the moment, significant changes are being made that will alter the course of the procedure entirely, but currently, after LN2 is poured, cooling the superconductor, the casing with its superconductor is placed above the permanent magnet. With the control, you will orient the magnet in whatever direct you please to demonstrate how the device will operate in its entirety. By the final tests of December 3, 2021, the superconductor was only able to flux pin small magnets, not exerting enough force to support much weight and the controls for each motor in the arm could only be controlled with serial commands, making it not user friendly. By mid January, after getting a pellet with a thin layer of the superconductor, everything flux pinned more efficiently. The controls were fixed to only require a joystick and a touch sensor and going forward, an electromagnetic track will orient the superconductor.

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