

Abstract Submitted
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Self-Balancing Resistance Bridge as Cryogenic Temperature Measurement System. ALEKSANDAR TADIC, MICHAEL RAY, California State University, Sacramento — A self-balancing resistance bridge was developed for use in a cryogenic temperature measurement system. In this system, a wheatstone bridge is used in conjunction with a lock-in amplifier to measure the resistance of a carbon resistor, whose resistance depends on the temperature. Self-balancing of the bridge is achieved through LabVIEW, along with a voltage controlled resistor which was designed for this purpose and consists of an enclosed LED-photocell system. Changes in the voltage to the LED changes its brightness, which in turn changes the resistance of the photocell. Tests show that the system should meet the needs of the low temperature lab.

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