

Abstract Submitted
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Electrical energy dissipation in superconducting niobium rings¹ E. M. DOWDELL, K. M. CHIOLA, E. T. ROSAURI, J. D. HETTINGER, Department of Physics and Astronomy, Rowan University — Niobium rings were made from films synthesized using sputtering process. Rings and wires were defined in the films using standard photolithographic techniques followed by wet etching. Three rings were fabricated with different diameters and wire widths. One microbridge was created for direct electrical transport measurements. V-I characteristics of the superconducting niobium microbridge were measured at temperatures below 7K and at magnetic fields up to 2T. Dissipation was induced in the superconducting niobium rings by ramping the magnetic field and employing Faraday's Law. The current induced was measured through the magnetic moment and the simple expression $\mu=IA$. We will correlate the magnetically induced measurements with those made directly on the microbridge to investigate this method as a technique for extending transport measurements to lower dissipation levels.

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