

Abstract Submitted  
for the DNP08 Meeting of  
The American Physical Society

**Production of Neutron Transmutation Doped (NTD) Germanium Thermistors for CUORE<sup>1</sup>** REINA MARUYAMA, University of Wisconsin, Madison, CUORE COLLABORATION — CUORE is a cryogenic bolometer experiment designed to look for neutrinoless double beta decay in tellurium-130 in the inverted mass hierarchy region. The source/detector will consist of 988 TeO<sub>2</sub> crystals weighing a total of 740 kg, or 204 kg of Te-130. Each bolometer consists of a 5x5x5 cm<sup>3</sup> TeO<sub>2</sub> crystal, a silicon resistive heater, and a thermistor which measures the small temperature rise in the crystal when energy from a nuclear decay or background events is deposited. To achieve the required uniformity and concentration in the gallium and arsenic dopants in the thermistors, germanium wafers are neutron-transmutation doped by irradiation at a nuclear reactor. We will present the techniques developed to dope and test four 58 g high-purity germanium wafers with a diameter of 65 mm and thickness 3 mm to an absolute precision of 1%.

<sup>1</sup>This work was supported by the Director, Office of Science, Office of Nuclear Physics, of the U.S. Department of Energy under Contract No. DE-AC02-05CH11231.

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Date submitted: 30 Jun 2008

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