

Abstract Submitted  
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**Elemental Analysis of Carbon Disks using Proton Induced X-ray Emission**<sup>1</sup> MELISSA CUMMINGS, KELLY DONOVAN, STEPHEN PADALINO, Physics and Astronomy, State University of New York at Geneseo, VLADIMIR GLEBOV, T. CRAIG SANGSTER, Laboratory for Laser Energetics, University of Rochester — An experimental method for determining the  $\rho R$  and  $(\rho R)^2$  of high energy-density inertial confinement fusion targets has been developed, which involves measuring the yield of tertiary neutrons with energies higher than 20 MeV. Carbon activation is a suitable technique for this measurement due to its high energy neutron reaction threshold and the availability of ultra high-purity samples at a relatively low cost. The tertiary neutron yield is more than six orders of magnitude lower than the primary neutron yield, so ultra pure carbon samples that are free from any positron-emitting contaminants are essential to this diagnostic. The goal of this project was to use proton induced x-ray emission (PIXE) as a technique for determining trace amounts of contaminant elements in the carbon disks.

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