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**Piezoelectric Transformer Accelerator Systems for Neutron Interrogation**[1] EMILY BAXTER, SCOTT KOVALESKI, ANDREW BENWELL, TONGTAWEE WACHARASINDHU, JAE KWON, University of Missouri — The detection of nuclear materials such as highly enriched uranium has become increasingly important. The University of Missouri is developing a compact accelerator system for active neutron interrogation using a piezoelectric transformer with an ion diode for neutron production. The piezoelectric high voltage generator is composed of a rotated y-cut bar of lithium niobate and will ultimately be used to accelerate deuterium ions. When driven near resonance the device is capable of yielding very high voltages. The ion source will be attached to an electrode on a piezoelectric transformer for subsequent ion acceleration. A number of ion sources are being studied, and relative merits of each will be presented, along with piezoelectric transformer performance results.

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