

Abstract Submitted
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Incorporating metal into polarized ^3He target cells SUMUDU K. KATUGAMPOLA, DANIEL J. MATYAS, YUNXIAO WANG, WILLIAM A. TOBIAS, VLADIMIR NELYUBIN, GORDON D. CATES, Univ of Virginia — An upcoming measurement at Jefferson Laboratory (JLab) of the electric form factor of the neutron will utilize a polarized ^3He target at high luminosity. While polarized ^3He targets at JLab have previously been made entirely of glass, we describe progress toward incorporating metal windows for the electron beam. Under the conditions of our targets, very few studies have been done on the spin-relaxation of nuclear-polarized ^3He on metal surfaces. We have found good performance by using Oxygen Free High Conductivity (OFHC) copper substrates electroplated with gold. The glass-to-metal transitions within our test cells were based on Housekeeper seals. We have further established that Uranium glass (Canary glass) has excellent spin-relaxation properties, and can serve as a transition glass from Pyrex to Aluminosilicate glass (GE180). Another finding was that spin-relaxation properties were sensitive to the manner in which cells were annealed, an important issue because of constraints when annealing cells containing both metal and glass.

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