Abstract Submitted
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The Next Generation Mott Polarimeter[1] DENNIS NEUFELD, F.B. DUNNING, Rice University, Physics and Astronomy — New insights into many physical phenomena can be obtained through spin dependent studies and such investigations frequently require an electron spin polarimeter. In the past, polarimeters have tended to be bulky and require very high voltages (100 kV or more) in order to operate. In recent years more compact, retarding-potential designs, which operate in the 20 kV range have been developed which, with a Thorium target foil and 25 kV accelerating voltage, can achieve efficiencies of $\approx 1.6 \times 10^{-4}$ and effective Sherman functions, S_{eff}, of between –0.15 and –0.25. Here, a new ultra-compact retarding-potential polarimeter is described in that is optimized for size, efficiency, and simplicity of construction, and is suitable for a wide variety of applications.

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