

Abstract Submitted  
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**Alkali-Hybrid Spin Exchange Optical Pumping Polarized He-3 Targets for Electron Scattering** JAIDEEP SINGH, Argonne National Laboratory, PETER DOLPH, KAREN MOONEY, VLADIMIR NELYUBIN, AL TOBIAS, GORDON CATES, University of Virginia — Polarized He-3 has long been proven to be extremely useful for exploring the structure of the neutron in electron-scattering experiments. Using spin-exchange optical pumping (SEOP), the He-3 polarization of these high-density (10 amagats) two-chamber target cells now regularly approaches 70%. This remarkable performance has been achieved by taking advantage of both alkali-hybrid SEOP and high-power spectrally-narrowed diode lasers. We'll share what we've learned (1) about applying these new technologies, (2) about the factors that are limiting the He-3 polarization in these target cells, and (3) from comparisons of numerical simulations with empirical results.

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