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Recent Advances in Laser-Polarized He-3 Targets for Electron Scattering JAIDEEP SINGH, PETER DOLPH, KAREN MOONEY, VLADIMIR NELYUBIN, AL TOBIAS, University of Virginia, AIDAN KELLEHER, TODD AVERETT, College of William & Mary, GORDON CATES, University of Virginia — Laser-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. In this talk, we'll share what we've learned about (1) applying these new technologies and (2) the factors that are limiting the He-3 polarization in these target cells.

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