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A Solid Polarized Target for CLAS12 at Jefferson Lab MATHIEU EHRHART, Old Dominion University, CLAS COLLABORATION — To be able to study the spin-dependence of the nucleon structure with electron scattering experiments, targets providing spin-polarized nuclei are needed. We report on the development of a new solid polarized target for the CLAS12 detector, presently being installed in Jefferson Lab's Hall B. The technique of dynamic nuclear polarization (DNP) requires very low temperatures around 1 Kelvin and a high magnetic field of around 5 Tesla. The very large natural polarization of free electrons inside the target material under these conditions is transferred to the nuclei via microwave radiation (electron Larmor frequency). The polarization of the protons and deuterons is measured with the nuclear magnetic resonance (NMR) technique.

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