

Abstract Submitted
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Polarized Fluorescence from Nitrogen Molecules Excited by Polarized Electron Impact¹ J.W. MASEBERG, University of Nebraska, J.E. FURST, University of Newcastle-Ourimbah, T.J. GAY, University of Nebraska — We have measured the optical excitation function and relative Stokes parameters for 388 ± 5 nm fluorescence from spin-polarized electron impact excitation of molecular N_2 . Specifically, the circular polarization fraction normalized to the incident electron spin, P_3/P_e , was found to be $+1(5)\%$ at an electron energy of 30eV. This result, even though it contains contributions from 6 different triplet spectral lines, is consistent with the data of the Münster group [1] who measured the N_2 337 nm $C_3\Pi_u - B_3\Pi_g(\nu'=0, \nu=0)$ transition and found $P_3 < 0.002$ at an energy of 14.5 eV. However the N_2 results are significantly different from the H_2 target case which gives P_3/P_e of $\sim 10\%$ [2]. [1] C. Mette *et al.*, Verhandl. DPG (VI) **29**, 462 (1994). [2] A.S. Green *et al.*, Phys. Rev. Lett. **92**, 093201 (2004).

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