

Abstract Submitted
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Electron-impact excitation of xenon¹ JOHN B. BOFFARD, R.O. JUNG², L.W. ANDERSON, CHUN C. LIN, University of Wisconsin-Madison — Xenon electron-impact cross sections are used in the analysis of non-invasive optical emission spectroscopy diagnostics of many xenon plasmas including Hall thrusters. We present measurements of optical emission cross sections as a function of incident electron energy (0-200 eV) for a large number of emission lines in the 250-900 nm wavelength range using a mono-energetic electron beam along with monochromator/PMT detector. The selection of measured cross sections include both excitation into higher neutral levels, and simultaneous ionization/excitation into Xe^+ , Xe^{2+} , and Xe^{3+} levels. Measurements were performed at a low pressure to minimize pressure effects often observed in xenon measurements due to radiation trapping of resonant emission lines [1].

[1] J. T. Fons and C. C. Lin, Phys. Rev. A **58**, 4603 (1998).

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