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Title

Electron-Loss Collisions of Highly-Stripped Niobium Ions With Hydrogen and Argon

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Abstract

ELECTRON-LOSS COLLISIONS OF HIGHLY-STRIPPED
NIOBIUM IONS WITH HYDROGEN AND ARGON

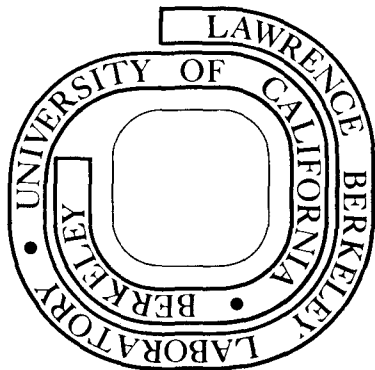
K. H. Berkner, W. G. Graham, R. V. Pyle,
A. S. Schlachter, and J. W. Stearns

January 1979

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For Reference

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Abstract

Abstract Submitted

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Physical Review
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Number 34.7-34.5

Bulletin Subject Heading
in which paper should be placed:
Atomic Collisions: Charge
transfer and inelastic scattering.

Electron-Loss Collisions of Highly-Stripped Niobium Ions with Hydrogen and Argon.* K.H. BERKNER, W.G. GRAHAM, R.V. PYLE, A.S. SCHLACHTER, and J.W. STEARNS, Lawrence Berkeley Laboratory, Univ. of Calif., Berkeley, CA 94720--We have measured the cross sections for net impact ionization of H₂ and Ar targets by 3.5 MeV/A Nb^{+q} ions and for electron capture by the Nb^{+q} ions. Niobium ions with charge states q ranging from 23 to 36 were used in these experiments. The impact-ionization cross sections are very large, e.g., 1.0×10^{-14} cm² for Nb⁺³⁴ in H₂, and 3.4×10^{-14} for Nb⁺³⁴ in Ar. These results extend experimental verification of our previously determined scaling rule¹ for electron loss from H to ions with charge states as large as +36.

*Work supported by the U.S. Department of Energy, Office of Fusion Energy under Contract No. W-7405-ENG-48.

¹Olson, Berkner, Graham, Pyle, Schlachter, and Stearns, Phys. Rev. Letters 41, 163 (1978).

Submitted by

Signature of APS Member

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