

Lawrence Berkeley National Laboratory

LBL Publications

Title

Projectile K X Rays and Rec From C1 Ions Incident on Carbon

Permalink

<https://escholarship.org/uc/item/6s53v86c>

Authors

Tanis, J A

Shafroth, S M

Willis, J

Publication Date

1979

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

To be presented at the 1979 American
Physical Society Meeting, Washington,
D. C., April 23-26, 1979

UC-34
LBL-8712
Abstract

PROJECTILE K X RAYS AND RECOIL
FROM C¹ IONS INCIDENT ON CARBON

A
RCO
OST
COL

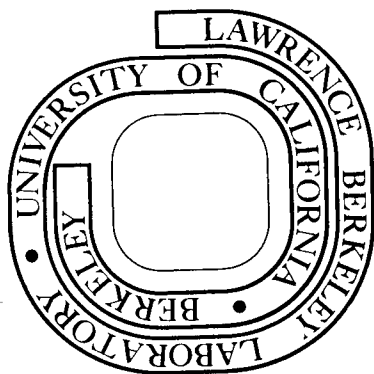
J. A. Tanis, S. M. Shafroth,
and J. Willis

January 1979

Prepared for the U. S. Department of Energy
under Contract W-7405-ENG-48

For Reference

Not to be taken from this room



DISCLAIMER

This document was prepared as an account of work sponsored by the United States Government. While this document is believed to contain correct information, neither the United States Government nor any agency thereof, nor the Regents of the University of California, nor any of their employees, makes any warranty, express or implied, or assumes any legal responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by its trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or the Regents of the University of California. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof or the Regents of the University of California.

0 0 0 0 5 3 0 2 2 3 6

Jan. 29, 1979
Submission Date

LBL 8712
Abstract

Abstract Submitted

for the Washington, D. C. Meeting of the

American Physical Society

April 23-26, 1979

Physical Review
Analytic Subject Index
Number 34

Bulletin Subject Heading
in which paper should be placed:
X Rays, Ion-Atom Collisions

Projectile K X Rays and REC From Cl Ions Incident on Carbon Foils*--J.A. TANIS[†], S.M. SHAFROTH and J. WILLIS, University of North Carolina, Chapel Hill, and Triangle Universities Nuclear Laboratory, Durham, and J.R. MOWAT, North Carolina State University, Raleigh--A systematic investigation of projectile K x-ray production has been conducted for Cl ions incident on thin (10-100 $\mu\text{g}/\text{cm}^2$) carbon foils. Characteristic x-rays and REC have been measured as a function of target thickness for beam energies of 40, 60 and 80 MeV. Parametrization of the x-ray intensities as a function of target thickness ^(1,2) gives values for the physical quantities pertinent to the collision. Values obtained are compared with previous results for Cl ions striking thin Cu targets. We find that Cl K-vacancy production in C targets is about half that observed for Cu targets. REC cross sections in C are about 2-3 times smaller than those observed in Cu which is consistent with the Bethe-Salpeter theory if it is assumed that each electron contributes equally to capture.

*Work supported in part by the U.S. Department of Energy
[†] Present address: Lawrence Berkeley Lab, Univ. of Calif.

1. H.D. Betz, et al., Phys. Rev. Lett. 33, 807(1974).
2. J.A. Tanis and S. M. Shafroth, Proceedings of Small Accelerator Conf., Denton, TX (1978), to be published.

Submitted by

Signature of APS member

John Tanis
Lawrence Berkeley Laboratory
University of California
Berkeley, California 94720

This report was done with support from the Department of Energy. Any conclusions or opinions expressed in this report represent solely those of the author(s) and not necessarily those of The Regents of the University of California, the Lawrence Berkeley Laboratory or the Department of Energy.

TECHNICAL INFORMATION DEPARTMENT
LAWRENCE BERKELEY LABORATORY
UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA 94720