

# NUCLEAR SCIENCE AND ENGINEERING®

VOLUME 78, NUMBER 4, AUGUST 1981

## CONTENTS

### TECHNICAL PAPERS

- 311 Multigroup Transport Theory. I. Basic Analysis *C. E. Siewert, P. Benoist*
- 315 Multigroup Transport Theory. II. Numerical Results *R. D. M. Garcia, C. E. Siewert*
- 324 Evaluation of the  $^{23}\text{Na}(n,2n)^{22}\text{Na}$  Reaction for ENDF/B-V *D. C. Larson*
- 333 Total Neutron Cross Sections of Heavy Nuclei *W. P. Poenitz, J. F. Whalen, A. B. Smith*
- 342 Space-Energy Few-Group Neutron Cross Sections for Large, Complex Core Calculations *L. B. Freeman*
- 359 Measurement of the Cross Section for the  $^7\text{Li}(n,n't)^4\text{He}$  Reaction in the 7- to 9-MeV Energy Range *Donald L. Smith, Manuel M. Bretscher, J. W. Meadows*
- 370 Neutron Total Cross Section and Resonance Parameters of  $^{231}\text{Pa}$  *Abdel-Razik Z. Hussein, J. A. Harvey, N. W. Hill, J. R. Patterson*
- 377 Measurement of  $(n,\alpha)$  Cross Sections of Chromium, Iron, and Nickel in the 5- to 10-MeV Neutron Energy Range *A. Paulsen, H. Liskien, F. Arnotte, R. Widera*
- 386 Kinetic Studies of the Reaction of Plutonium Hydride with Oxygen *Jerry L. Stakebake*

### TECHNICAL NOTES

- 393 An Anomaly in the Use of Perturbation Theory *F. Rahnema, G. C. Pomraning*
- 395 HYPERFUSE: A Hypervelocity Inertial Confinement System for Fusion Energy Production and Fission Waste Transmutation *Henry Makowitz, James R. Powell, Richard Wiswall*
- 404 Low-Energy Nuclear Fusion Data and Their Relation to Magnetic and Laser Fusion *Nelson Jarmie*
- 412 Neutrons from  $^{11}\text{B} + ^{11}\text{B}$  Compared with Other Sources of Neutrons from a  $^{11}\text{B} + p$  Burn *Edwin Norbeck*
- 415 Measurement of the Average Activation Cross Section for the Reaction  $^{63}\text{Cu}(n,\alpha)^{60}\text{Co}$  in the Spontaneous Fission Neutron Field of Californium-252 *G. Winkler, V. Spiegel, C. M. Eisenhauer, D. L. Smith*

(Continued)

VOLUME 78, NUMBER 4, AUGUST 1981

**CONTENTS**  
(Continued)

- 420 Measurement of the  $^{53}\text{Cr}(n,p)^{53}\text{V}$  Cross Section Below 9.4 MeV Using a Sample Transport Facility *Donald L. Smith, J. W. Meadows, Frank F. Porta*
- 425 KINGLET Critical Assembly: An Experiment with Flowing Fissile Solution *T. F. Wimett, H. C. Paxton*
- 431 Steam Generator Flow Instability Modeling During the Reflood Stage of a Loss-of-Coolant Accident *D. Y. Hsia, P. Griffith*

**CORRIGENDA**

- 438 Generalized Perturbation Theory for Nonlinear Systems from the Importance Conservation Principle *A. Gandini*
- 438 Response to "Neutron Lifetime, Generation Time, and Reproduction Time" *C. R. Marotta*

**BOOK REVIEW**

- 439 Pressure Component Construction . . . Design and Materials Application, John F. Harvey *C. E. Knight*

440 **ANNOUNCEMENT OF CURRENT PUBLICATIONS**

444 **VOLUME 78 AUTHOR AND SUBJECT INDEXES**