

Editorial Advisory Committee

MANSON BENEDICT
DEAN BROWN
JACK CHERNICK
E. RICHARD COHEN
E. C. CREUTZ
W. K. DAVIS
O. E. DWYER
PAUL GAST
D. H. GURINSKY
A. F. HENRY
D. G. HURST
L. J. KOCH
L. W. NORDHEIM
RALPH T. OVERMAN
HUGH C. PAXTON
A. M. WEINBERG
C. W. J. WENDE

Publications Committee

J. R. LILIENTHAL, Chairman
R. L. ASHLEY
J. H. BACH
J. G. BECKERLEY
A. BOLTAX
E. A. BURRILL
M. K. BUTLER
R. J. COE
R. W. DICKINSON
K. R. FERGUSON
W. R. KANNE
J. L. KURANZ

ANS Staff Publications Committee

CLARKE WILLIAMS
Director of Publications
PAUL TURNER
Publications Production Manager
RICHARD R. QUINN
Advertising Sales Manager
DAVID A. SUNDBERG
Editor, Nuclear News
JOHN H. GRAHAM
Senior Technical Editor

Production

JUNE REDDEMANN

Composition

BELJAN, ANN ARBOR, MICH.

Nuclear Science and Engineering is published monthly by the American Nuclear Society, Incorporated, with executive and business offices at 244 East Ogden Avenue, Hinsdale, Illinois 60521—telephone 312/325-1991. Subscription rate is \$24/volume; Volumes 24, 25 and 26 will be published during 1966; address subscription orders to the American Nuclear Society (back issues of Volumes 1-17 are available from Academic Press, 111 Fifth Avenue, New York, N.Y.). Second-class postage is paid at Hinsdale, Illinois and at additional mailing offices. Nuclear Science and Engineering is printed in Danville, Illinois. Copyright © 1966 by the American Nuclear Society, Inc.

NUCLEAR SCIENCE and ENGINEERING®

VOL. 24, No. 2 February 1966

Contents

TECHNICAL PAPERS

- Heat Transfer to Liquid Metals Flowing Turbulently in Eccentric Annuli—I *Wen-Shi Yu and Orrington E. Dwyer* 105
- An Aluminosilicate Ion Exchanger for Recovery and Transport of ¹³⁷Cs from Fission-Product Wastes *R. E. Lewis, T. A. Butler, and E. Lamb* 118
- The Correlation Among Pore-Size Distribution, Permeability, and Diffusion in Graphite. *J. Schlösser* 123
- Effect of Distribution of Fissile Material on Critical Mass *H. K. Clark* 133
- Atomic Motions in a Rigid Sphere Gas as a Problem in Neutron Transport *Rashmi C. Desai and Mark Nelkin* 142
- Heterogeneity Calculation for Fast Reactors by a Perturbation Method *F. Storrer, A. Khairallah, M. Cadilhac, and P. Benoist* 153
- A Method for Predicting the Penetration and Slowing Down of Neutrons in Reactor Shields *L. Hjärne and M. Leimdörfer* 165
- Control of Reactivity in High Conversion Ratio, Plutonium-Fueled Thermal Power Reactors. *G. Srikantiah* 175
- Reactor Noise Analysis by Photon Observation *R. J. Gelinas and R. K. Osborn* 184
- An Electron Shielding Analysis for Space Vehicles *B. W. Mar* 193
- A New Variant to the Exponential Transformation Technique in Monte Carlo Shielding Calculations. *A. B. Chilton* 200

TECHNICAL NOTES

- Consistency in the Analysis of High-Buckling Critical Experiments *W. J. Eich and H. T. Williams, Jr.* 209
- Neutron Diffusion Parameters in Benzene *V. C. Boffi, B. Marsico, V. G. Molinari, and R. Scozzafava* 211
- Neutron Thermalization and Diffusion in Nonisothermal Media *Bal Raj Sehgal* 212
- On Thermal-Neutron Pulse Propagation *K. Y. Cheung and G. H. Miley* 216

- COMPUTER CODE ABSTRACT 218
- BOOK REVIEWS 219
- ABSTRACTS 223

Indexed in "Engineering Index" and Abstracted in "Nuclear Science Abstracts"