

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. W. NORDHEIM
RALPH T. OVERMAN
RONALD S. PAUL
HUGH C. PAXTON
FRED W. THALGOTT
A. M. WEINBERG
C. W. J. WENDE

Publications Committee

JAMES R. LILIENTHAL, Chairman
E. ALFRED BURRILL
MARGARET K. BUTLER
ROBERT W. DICKINSON
M. A. GREENFIELD
F. E. JAMERSON
WILLIAM R. KANNE
JOHN L. KURANZ
JOHN H. MARTENS
HOWARD D. PHILIPP
ROY G. POST

ANS Publications Staff

JOHN GRAHAM
Senior Staff Editor
RUTH FARMAKES
Assistant Staff Editor
RICHARD HARRIS
Design and Production Editor
MARY M. GRIFFITH
Art Editor
JANET BLUMA
Production Assistant

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. 26, No. 3 November 1966

Contents

TECHNICAL PAPERS

- The Flow of Boiling Water in Heated Pipes
Louis M. Shatkin 293
- Laminar Heat Transfer in a Hexagonal Channel with Internal Heat Generation and Unequally Heated Sides.
Chia-Jung Hsu 305
- Maximum Temperatures in a Flat-Plate Fuel Element with Fuel-Clad Bonding Defects
D. S. Rowe and D. E. McFeron 319
- Irradiation Damage to Sintered Beryllium Oxide as a Function of Fast-Neutron Dose and Flux at 110, 650, and 1100°C
G. W. Keilholtz, J. E. Lee, Jr., and R. E. Moore 329
- Measurements and Single-Velocity Calculations of Differential Angular Thermal-Neutron Albedos for Concrete.
R. E. Maerker and F. J. Muckenthaler 339
- On the Velocity Distribution of Electrons Scattered from a Slab by the Gamma Flux from a Nuclear Explosion.
C. D. Taylor 347
- The Dispersion Law of a Moderator
M. N. Moore 354
- The Reaction Rate of Neutrons in a Maxwellian Medium.
Raymond L. Murray 362
- Comparison of Statistical Estimators for Neutron Monte Carlo Calculations
D. B. MacMillan 366
- Numerical Studies of Multichannel Variational Synthesis.
E. L. Wachspress 373
- Stability Analysis of a Sampled-Data Controlled Nuclear Reactor System.
Frigyes Reisch 378
- Perturbations, Mass, and Critical Mass
J. Devooght 385
- The Temperature Dependence to 1550°C of the Effective Resonance Integral of Thorium Oxide Rods
F. C. Schoenig, K. S. Quisenberry, D. P. Stricos, and H. Bernatowicz 393
- An Investigation of Resonance Absorption in Mixtures of Uranium-238 and Thorium-232.
W. K. Foell and T. J. Connolly 399
- ### TECHNICAL NOTES
- On the Theory of Rossi-Alpha Experiment in Reactor Noise Studies
Dušan Babala 418
- Coupled-Reactors Kinetics Equations
H. Plaza and W. H. Köhler 419
- Numerical Comparison of Methods of Describing Heavy-Element Neutron Slowing Down
L. B. Freeman and E. M. Gelbard 422
- Analytical Continuation and Laplace Transformation.
Alois Schett 424
- ### BOOK REVIEWS.
- 425
- ### LETTERS TO THE EDITOR
- The Albedo Problem and Chandrasekhar's *H*-Function
I. Abu-Shumays 430
- Cavity and Vacuum Boundary Conditions for More-dimensional P_N Approximations.
D. Emendörfer 431
- Fine Group Cross Sections for Resonance Absorbers.
J. P. Pollard 432
- ### ABSTRACTS.
- following page 433