



AUTHORS – MARCH 1971

REACTORS

A FAST REACTOR ASSESSMENT STUDY

Reino Ekholm (MS, nuclear engineering, New York University, 1959; Teknologie Licentiat, Abo Akademi, 1965) worked on the LMFBR at Brookhaven National Laboratory from 1957 to 1960. Since 1961 he has been at AB Atomenergi where he has been engaged in assessments of reactors for MHD, mixed spectrum reactors (MDB), gas-cooled reactors, and fast breeder reactors.

Reino Ekholm



PREDICTION OF THREE-DIMENSIONAL CORE PERFORMANCE OF JPDR (A BWR) FOR BURNUP CASES

T. Shimooke (MSc, Kyoto University, 1959) is presently a senior physicist at Japan Nuclear Ship Development Agency where he is responsible for the reactor-physics designs and tests of the core for the nuclear ship *Mutsu*. Previously, he had been engaged in the physics test of the Japan Power Demonstration Reactor at Japan Atomic Energy Research Institute. During this period he spent a year at Brookhaven National Laboratory studying the Pu-loaded critical experiment.

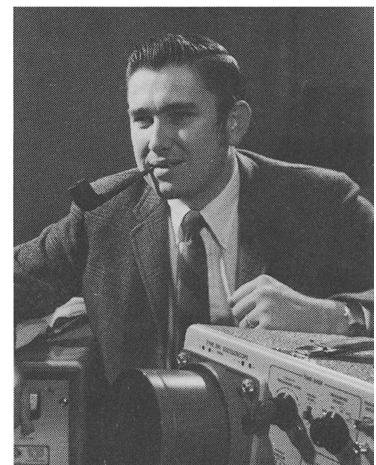
T. Shimooke



EXPERIENCE IN REACTOR MALFUNCTION DIAGNOSIS USING ON-LINE NOISE ANALYSIS

Dwayne Fry (MS, University of Florida, 1962) has been a member of the Instrumentation and Controls Division at Oak Ridge National Laboratory since 1962. He is currently engaged in the development and application of noise analysis and dynamic testing techniques for on-line diagnosis of nuclear reactor component malfunctions.

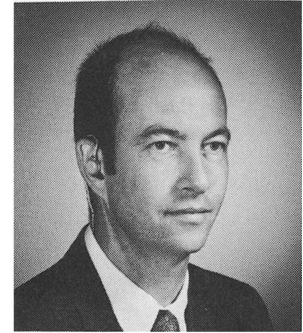
D. N. Fry



PREPARATION OF SOL-GEL SPHERES SMALLER THAN 200 MICRONS WITHOUT FLUIDIZATION

P. A. Haas

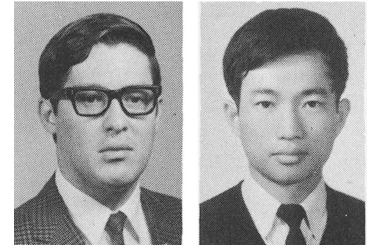
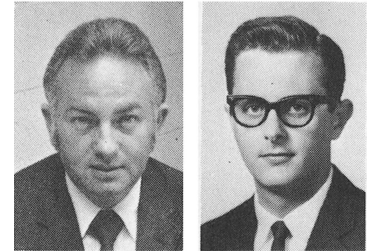
Paul A. Haas (PhD, Chemical Engineering, University of Tennessee) is a development engineer for nuclear fuel re-processing and refabrication with the Chemical Technology Division of Oak Ridge National Laboratory, where he has worked since 1951.



A STUDY OF NONCONDENSABLE EFFECTS IN A HEAT PIPE

*G. T. Colwell
C. L. Williams
J. C. Hsu
G. E. Zevallos*

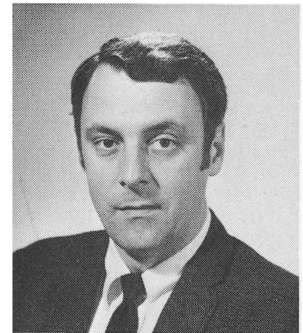
Gene T. Colwell (top left) (PhD, engineering science, University of Tennessee, 1966) has held full-time positions as research engineer from 1959 to 1962 at Oak Ridge National Laboratory, instructor at the University of Tennessee from 1962 to 1965, design specialist at Oak Ridge National Laboratory during 1966, and assistant professor at the Georgia Institute of Technology from 1966 to the present. C. Lamar Williams (top right), James C. Hsu (bottom right), and Gonzalo E. Zevallos (bottom left) were recently awarded masters degrees in mechanical engineering from Georgia Institute of Technology. Williams and Hsu are currently candidates for their PhD degrees from the same institution. Zevallos is presently working for Empresa Electrica Del Ecuador, Inc. in Ecuador.



AN EXPLICIT SOLUTION FOR STRESSES IN PYROCARBON-COATED FUEL PARTICLES

D. W. Stevens

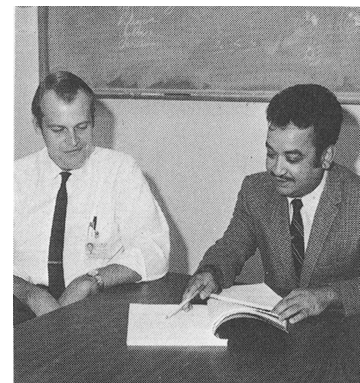
D. W. Stevens is a staff associate in the Materials Research Department of Gulf General Atomic and has been involved with the development and evaluation of high temperature nuclear fuel materials since 1963. His current activities are in the field of research on carbon.



CARBON TRANSPORT IN FLOWING SODIUM

*Prodyot Roy
Gary P. Wozadlo*

Prodyot Roy (right) (PhD, materials science, University of California, Berkeley) has been a member of the technical staff of the General Electric Company, Breeder Reactor Development Operation since 1968. At GE his research interests are sodium coolant chemistry, mass transfer, and materials behavior in sodium. Prior to joining GE, he was a research fellow at Max-Planck Institute in Göttingen, Germany and at the University of California at Berkeley. During that time he was involved in research in the field of solid-state electrochemistry, surface chemistry, and alloy thermodynamics. Gary P. Wozadlo (MS, metallurgical engineering, University of Wisconsin at Madison) is also a



member of the technical staff at GE. From 1962 to 1965 he worked in the superheat and boiling water reactor development programs. During that period his research involved corrosion of materials in steam. From 1965 to 1966 he was associated with AEG in Frankfurt, Germany, where he continued his studies in the area of steam corrosion. Since 1966 he has been working in the sodium-cooled fast reactor development program. He is presently involved in studies of the effect of sodium on mechanical properties of cladding materials. He has also done considerable work on corrosion and mass transfer of materials in flowing sodium.

GENERATION OF A LOW-ENERGY POSITRON BEAM

Günter Lohnert (left) (MS, University of Stuttgart, 1966) is a graduate student at the University of Florida, Gainesville, in the Department of Nuclear Engineering Sciences. For his dissertation, he is studying the annihilation of positrons in a plasma. Richard T. Schneider (PhD, University of Stuttgart, 1961) was employed by Allison Division, General Motors Corporation from 1961 to 1965 as section chief for plasma physics, where he worked in plasma diagnostics for MHD power generation. Since 1965 he has been a professor at the University of Florida where his main interest is plasma diagnostics for uranium plasmas.

*Günter H. Lohnert
Richard T. Schneider*

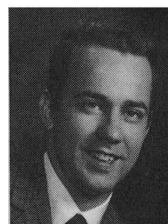


RADIOISOTOPES

THE PREPARATION AND PROPERTIES OF LiPb , A NOVEL MATERIAL FOR SHIELDS AND COLLIMATORS

N. A. Frigerio (right) (PhD, biophysical chemistry; MD, Yale University, 1957) is an associate scientist at Argonne National Laboratory. He has wide interests in science and, particularly, nuclear medicine. Leo LaVoy (DC, National College of Chiropractic, 1970) is guest scientist for 1970 in the Biological and Medical Division at Argonne National Laboratory. This paper was prompted by their work in neutron radiography of biological and medical materials.

*Norman A. Frigerio
Leo L. LaVoy*

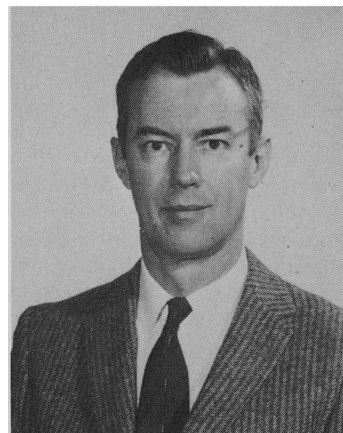


SHIELDING

BREMSSTRAHLUNG SHIELDING FROM ELECTRON TRAPPING IN DIELECTRICS

D. L. Hollis (PhD, nuclear engineering, Texas A & M University, 1967) is an associate professor in the Department of Electrical Engineering at the University of Alabama where he is responsible for the nuclear engineering courses in the College of Engineering.

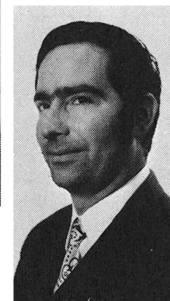
D. L. Hollis



CORRECTIONS FOR DEAD-TIME LOSSES IN THE MEASUREMENT OF GAMMA-RAY SPECTRA OF SHORT-LIVED RADIONUCLIDES

*H. A. Das
J. Zonderhuis*

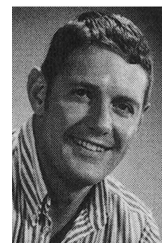
H. A. Das (left) (PhD, Amsterdam University, 1962) has been a staff member of the Dutch National Reactor Centre at Petten (N.H.) since 1962 where his work has involved activation analysis, application of tracers, absolute calibration, and isotope production. J. Zonderhuis passed the examination for chemical analyst in 1960, then specialized in radiochemistry. He obtained his chemical research analyst degree in 1964. He has been an employee of the Reactor Centre since 1961.



AN ELECTROCHEMICAL CARBON METER FOR USE IN SODIUM

*F. J. Salzano
L. Newman
M. R. Hobdell*

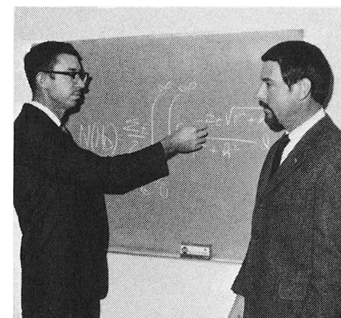
F. J. Salzano (top left) has been on the research staff at Brookhaven National Laboratory since 1956. He is currently involved in studies of the chemistry of liquid sodium and has a special interest in developing continuous on-line impurity monitoring methods for liquid sodium systems. Leonard Newman (right) (PhD, Massachusetts Institute of Technology, 1956) is head of the analytical chemistry group in the Department of Applied Sciences. Recent interests have included areas of sodium chemistry concerned with the fast breeder reactor program. Michael R. Hobdell (bottom left) (PhD, University of Nottingham, England, 1967) has been a research associate at Brookhaven National Laboratory from 1967 to 1969 and is currently involved in studies of the chemical and physical properties of liquid sodium at the Berkeley Nuclear Laboratories, Berkeley, Gloucestershire, England.



PREDICTION OF NUCLEAR WEAPON NUCLEAR-RADIATION ENVIRONMENTS

*R. L. French
L. G. Mooney*

R. L. French (right) (MS, Vanderbilt) has been responsible for a number of developments in the analysis of weapon radiation problems. He is a co-founder and a vice president of RRA. L. G. Mooney (BS, College of the Ozarks) has an extensive background in both analytical and experimental shielding. He is currently involved in the development of engineering methods for shield analysis of military structures.

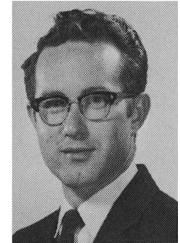
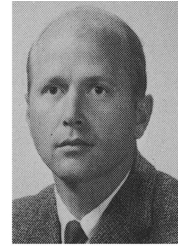


ANALYSIS

A MULTI-SPECTRA NEUTRON IRRADIATION TECHNIQUE FOR THE NONDESTRUCTIVE ASSAY OF FISSIONABLE MATERIALS

H. O. Menlove (left) (PhD, Stanford University), R. H. Augustson (top right) (PhD, Rensselaer Polytechnic Institute), and Darryl B. Smith (bottom right) (PhD, The University of New Mexico) are staff members at Los Alamos Scientific Laboratory working in the nuclear safeguards program. Their primary research activities are in the areas of neutron and fission physics with applications to the nondestructive assay of fissionable materials.

*H. O. Menlove
R. H. Augustson
Darryl B. Smith*

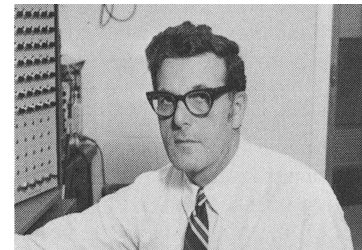


EDUCATION

USE OF SIMULATION PLUS REAL STEAM TURBINE FOR TEACHING THEORY AND OPERATION OF A PRESSURIZED WATER REACTOR

M. A. Schultz (top) (BS, electrical engineering, Massachusetts Institute of Technology, 1939) is a professor in the Nuclear Engineering Department at The Pennsylvania State University. He has been involved with nuclear control systems since 1950 when he was associated with the nuclear instrumentation and control of the submarine *Nautilus*. His current interests range from the reliability of nuclear safety systems to the effects of power plants on the environment. Wayne F. Eckley (MS, University of Illinois, 1934) is an associate professor at the U.S. Naval Academy in the Naval Systems Engineering Department. He is interested in hybrid computation in reactor kinetics and is working on design of an interface between his analog computer and the remote terminal to the new GE-635 digital computer at USNA.

*M. A. Schultz
Wayne F. Eckley*



REACTORS

A TECHNICAL NOTE ON D-T FUSION REACTOR AFTER-HEAT

Donald J. Dudziak (PhD, mathematics; MS, radiological physics) currently has responsibility at the Los Alamos Scientific Laboratory for development of the ENDF/B system for photon production and interaction data. His experience has been primarily in the shielding area, with additional interest in several areas of theoretical reactor physics, including fusion reactor technology and stochastic kinetics.

Donald J. Dudziak

