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#### REACTORS



A FLOW EXPERIMENT ON A CURVED-POROUS-WALL GAS-CORE 6 REACTOR GEOMETRY

Chester D. Lanzo

Chester D. Lanzo attended Case Institute of Technology and Baldwin Wallace College. He was assigned to NASA's Nuclear Systems Division in 1956 where he has worked on analytical and experimental studies of the feasibility of advanced solid core and gaseous core nuclear propulsion systems.

## CHEMICAL PROCESSING



PILOT PLANT STUDIES OF METHYL IODIDE CLEANUP BY SPRAYS

L. F. Parsly

Lewis F. Parsly (PhD, University of Pennsylvania) is a research engineer in the Reactor Division at Oak Ridge National Laboratory and is in charge of the Nuclear Safety Pilot Plant.

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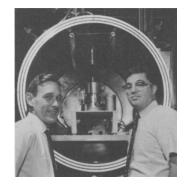
**FUELS** 



POROUS UO2 BODIES PRODUCED BY REDUCTION OF U3O8

T. N. Washburn

T. N. Washburn (BS, Virginia Polytechnic Institute, 1952) is head of the Ceramics Fuels Irradiation Testing Group, Metals and Ceramics Division, Oak Ridge National Laboratory. His present interest is development of high performance fuels for LMFBR and space power applications.



# REFLUXING CAPSULE EXPERIMENTS WITH REFRACTORY METALS AND BOILING ALKALI METALS

J. R. DiStefano, J. H. De Van

J. R. DiStefano (right) is a metallurgist and J. H. DeVan (left) a group leader in the Metals and Ceramics Division of the Oak Ridge National Laboratory. Both have MS degrees from the University of Tennessee and have been involved in high-temperature corrosion studies for over ten years.

#### **ECONOMICS**



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William R. Bohl, Jerry L. Gillette, Max W. Carbon





William R. Bohl (upper left) is a PhD candidate in the Department of Nuclear Engineering at the University of Wisconsin-Madison. Jerry L. Gillette (lower left) (MS, nuclear engineering, University of Wisconsin, 1969) has recently joined the Reactor Engineering Division of Argonne National Laboratory. Both were sponsored in Singapore by the Midwest Universities Consortium for International Development which, in turn, was funded by the Ford Foundation. Max W. Carbon (right) (PhD, Purdue, 1946), professor and Chairman of the Nuclear Engineering Department, University of Wisconsin, has major research interests in boiling liquid-metals heat transfer. Carbon previously worked on nuclear reactor development and operation with General electric at Hanford and on ICBM design with AVCO Corporation, and was a Ford Foundation visiting professor at the Singapore Polytechnic on leave from the University of Wisconsin during the time this paper was written.

# **MATERIALS**



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A. P. Malinauskas, J. W. Gooch, Jr., J. D. Redman

J. D. Redman (left), J. W. Gooch, Jr. (center), and A. P. Malinauskas (right) are members of the Reactor Chemistry Division at Oak Ridge National Laboratory. Both Redman (BS, Indiana) and Gooch are currently associated with the Molten-Salt Reactor Program, whereas Malinauskas (PhD, MIT) is involved in the nuclear safety aspects of high-temperature, gas-cooled reactors, gas transport phenomena, and molecular interactions.



THE DISSOLUTION OF METAL CORROSION PRODUCTS IN DEIONIZED WATER AT 38°C (100°F)

Barbara A. Johnson

Barbara Johnson (MS, New Mexico State University, 1959) is a chemist for NASA at Plum Brook Reactor Facility, Sandusky, Ohio.

# CESIUM PURIFICATION BY ZEOLITE ION EXCHANGE





B. W. Mercer, L. L. Ames, P. W. Smith

Paul W. Smith (left) (BS,ChE, University of Idaho, 1958), manager, Waste Management Process Engineering, Atlantic Richfield Hanford Company, is responsible for technical support, advanced planning, and technical standards and guides for operation of the processing program. Basil W. Mercer (right) (BS, chemistry, University of Portland, 1949), senior research scientist, Battelle-Northwest, has been in research and development activities related to the treatment and disposal of nuclear fuel reprocessing wastes. Lloyd L. Ames (not pictured) (PhD, mineralogy, University of Utah, 1956), research associate, Battelle-Northwest, has been conducting research related to many aspects of inorganic ion exchange.

RADIATION



ALPHA MONITOR FOR RAPID CONTAMINATION SCREENING OF HANDS 70 AND SHOES

William F. Splichal, Jr.

William F. Splichal, Jr. (BS, nuclear engineering, Kansas State University) has been at the Savannah River Plant since 1962 where his primary field of interest is developing and improving instrumentation for radiation protection groups. He has worked on projects involving the design of electronic circuitry, radiation detectors, and measuring and monitoring devices.

ANALYSIS







APPLICATIONS OF RARE EARTH TRACERS TO GUNPOWDER RESIDUES

K. K. S. Pillay, C. C. Thomas, Jr., D. M. Hart, D. Didising, R. C. Thomas

Robert C. Thomas (top right) (MD, John Hopkins, 1955) is a thoracic surgeon. K. K. S. Pillay (center right) (PhD, Penn State University, 1965) is a senior research scientist at Western New York Nuclear Research Center. His interests are in activation analysis. Charles C. Thomas, Jr. (top left) (MS, University of Rochester, 1950) is research manager of the Western New York Nuclear Research Center. Donald M. Hart (bottom left) (MS, Indiana University, 1945) is manager of Operations Research at Moore Business Forms, Inc. David Didising (bottom right) (BS, State University of New York, 1964) is president of Information Resources.







NONDESTRUCTIVE ASSAY OF FISSIONABLE MATERIALS

D. W. Jones, P. R. Malmberg, T. H. May, C. V. Strain

D. W. Jones (upper left) (PhD, University of Virginia, 1965) is associated with the Linac Branch of the Nuclear Physics Division, US Naval Research Laboratory, and works in the area of photoneutron physics. He is presently associate professor of Physics at Memphis State University. P. R. Malmberg (upper right) (PhD, State University of Iowa, 1955) and T. H. May (lower left) (PhD, University of Wisconsin, 1963) are members of the Van de Graaff Branch, Nuclear Physics Division, US Naval Research Laboratory, and specialize in fast neutron physics. C. V. Strain (lower right) (PhD, University of Rochester, 1938) serves as consultant to the Nuclear Physics Division and is interested in nuclear safeguards along with other nuclear applications.

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#### **TECHNIQUES**



### PULSE RATE CORRELATION IN DYNAMIC EXPERIMENTS

Rocco A. Fazzolare

Rocco A. Fazzolare (PhD, UCLA, 1967) is assistant professor of Nuclear Engineering at the University of Arizona. Previously he was associated with the Instituto Politecnico National in Mexico with which he still cooperates. His interests include experimental techniques, reactor design, system analysis and optimization, heat transfer, and material science.

ON THE GAMMA-RAY ONE-SHOT-COLLIMATOR MEASUREMENT OF





TWO-PHASE-FLOW VOID FRACTIONS

R. P. Gardner, R. H. Bean, J. K. Ferrell

R. H. Bean (right) (MS, chemical engineering, North Carolina State University, 1969) is presently working at E. I. du Pont de Nemours & Company in Newark, Delaware as a chemical engineer. J. K. Ferrell (upper left) (PhD, chemical engineering, North Carolina State University, 1954) is professor and head of the Chemical Engineering Department at North Carolina State University. His research interests are in the areas of heat and mass transfer in two-phase systems. R. P. Gardner (lower left) (PhD, fuel technology, Pennsylvania State University, 1961) is associate professor of nuclear and chemical engineering at North Carolina State University. His research interests are in radioisotope applications.





A CONVENIENT TECHNIQUE FOR STIRRING LIQUID SODIUM

M. R. Hobdell, F. J. Salzano

Michael R. Hobdell (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. F. J. Salzano 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.

# **DEPARTMENTS**

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