



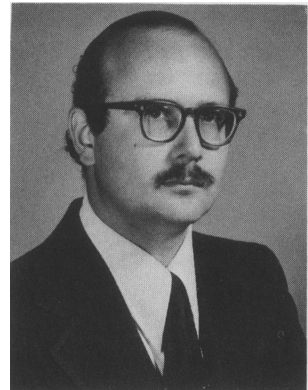
AUTHORS — APRIL 1973

FUELS

CALCULATED RADIATION PROPERTIES OF SPENT PLUTONIUM FUELS

M. J. Bell

Michael J. Bell (PhD, ChE, Princeton University, 1968), a development engineer in the Chemical Technology Division of Oak Ridge National Laboratory, is responsible for specifying the radiation and shielding requirements for fuel cycle facilities. His present interests involve the estimation of quantities of radioactive effluents from nuclear facilities.

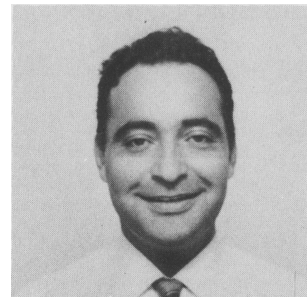


INSTRUMENTS

THE ANALYTICALLY DETERMINED RESPONSE OF SILICON DETECTORS TO A POLYENERGETIC NEUTRON BEAM

Mojtaba Taherzadeh

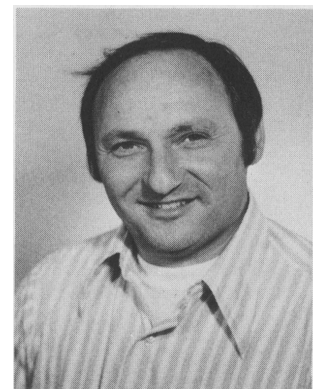
Mojtaba Taherzadeh (PhD, physics, University of California, Los Angeles, 1964), associated with Jet Propulsion Laboratory/Cal Tech since 1969, is a project leader and a member of the technical staff in charge of analytical research in determination of radiation characteristics of nuclear power sources. He is also responsible for radiation interference studies with regard to the scientific instruments aboard spacecraft. Prior to 1969, Taherzadeh was a scientific specialist with Edgerton, Germeshausen & Grier. In this capacity he was responsible for nuclear radiation hardening and higher power electron beam design for the simulation of electromagnetic pulses.



DETERMINATION OF NEUTRON FLUX AND NEUTRON FLUENCE FROM THE SIGNAL CURRENT OF A SELF-POWERED RHODIUM DETECTOR

W. W. Hudritsch

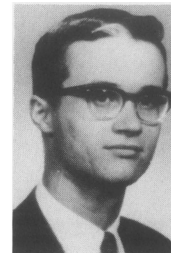
Walter W. Hudritsch (Diplom Ingenieur, physics, Vienna University of Technology, 1964) has been active for four years in all phases of fuel irradiation programs and analytical design studies at Siemens AG, Erlangen, West Germany, and Gulf General Atomic, San Diego, California. He also worked in heat transfer for two years and taught two years at an engineering college in Austria. His current work includes irradiation damage studies and statistical approaches to high temperature gas reactor fuel characterization.



A RADIOACTIVE FLUID BED REACTOR SYSTEM FOR THE BETA-INITIATED SIDE CHAIN CHLORINATION OF TOLUENE

Brian Ives (top) (PhD, chemical engineering, State University of New York at Buffalo, 1972) recently accepted a position in the Component Engineering and Technology Department of Atomics International. This paper results from his PhD research; the experimental portion was carried out at the Western New York Nuclear Research Center. Harry T. Cullinan, Jr. (center) (PhD, chemical engineering, Carnegie Institute of Technology, 1965) is professor and chairman of the Department of Chemical Engineering at the State University of New York at Buffalo. During 1972-73 he is on leave as a visiting professor of chemical engineering at the University of Manchester Institute of Science and Technology. John Y. Yang (bottom) (PhD, chemistry, University of Kansas, 1957) is currently a principal chemist at the Environmental Systems Department of the Cornell Aeronautical Laboratory. He is interested in radiation-induced chemical processes and their applications to air and water pollution studies.

*Brian F. Ives
Harry T. Cullinan, Jr.
John Y. Yang*



DECOLORATION OF TEXTILE DYE WASTE SOLUTIONS BY COMBINED IRRADIATION AND CHEMICAL OXIDATION

T. F. Craft (left) (PhD, Georgia Institute of Technology, 1969) is a senior research scientist in the Nuclear and Biological Sciences Division of the Engineering Experiment Station, Georgia Institute of Technology. Since 1962 he has been engaged in research work concerning environmental pollution, primarily water pollution. His current interests include methods of improving water and wastewater treatment, the application of radiotracers to environmental problems, and the beneficial uses of ionizing radiation. Geoffrey G. Eichholz (PhD, University of Leeds, England, 1947) has been professor of nuclear engineering at Georgia Institute of Technology since 1963. His current interests include industrial applications of radiation technology, radiotracer applications, and environmental aspects of nuclear technology.

*T. F. Craft
G. G. Eichholz*



A STUDY OF CRITICALITY PARAMETERS AFFECTING THE HANDLING AND STORAGE OF FISSILE METAL

Sidney J. Altschuler (left) (BChE, The Cooper Union for the Advancement of Science and Art, 1957) is a research physicist at Dow Chemical USA's Rocky Flats Plant working on computer calculations for nuclear criticality safety purposes. C. L. Schuske (MS, physics, University of Southern California) is the director of nuclear safety at Dow Chemical USA's Rocky Flats Plant. An ANS and APS member, he is primarily interested in critical mass physics and process plant nuclear criticality safety.

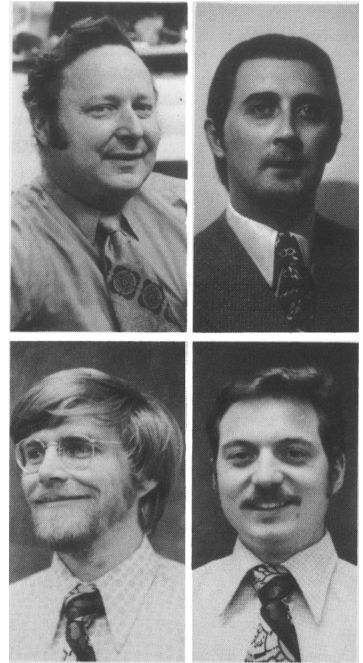
*S. J. Altschuler
C. L. Schuske*



RADIATION BLISTERING IN NIOBIUM

J. M. Donhowe (top left) (PhD, University of Wisconsin, 1966) is an associate professor of nuclear engineering at the University of Wisconsin-Madison. He is presently studying radiation damage in metals due to charged-particle bombardment using heavy ions, light ions, and electron beams. D. L. Klarstrom (top right) (PhD, University of Wisconsin, 1970) is an assistant professor in the Materials Department at the University of Wisconsin-Milwaukee. His research interests include the use of transmission and scanning electron microscopy to study x-ray diffraction, braze joining of metals, and mechanical deformation of crystalline solids. M. L. Sundquist (bottom left) (BS, Antioch College, 1967; MS, University of Wisconsin, 1969) is presently finishing his PhD on void formation in aluminum under ion bombardment in the Nuclear Engineering Department of the University of Wisconsin-Madison. W. J. Weber (bottom right) (BS, University of Wisconsin-Oshkosh, 1971) is now working on his Master's degree in the Nuclear Engineering Department at the University of Wisconsin-Madison.

*J. M. Donhowe
D. L. Klarstrom
M. L. Sundquist
W. J. Weber*

**DIMENSIONING REACTOR FUEL SPECIMENS FROM THERMAL-NEUTRON RADIOGRAPHS**

D. C. Cutforth (PhD, mechanical engineering, Utah State University, 1969) joined Argonne National Laboratory in 1963. He has been associated with BORAX V, EBR-II, and the Hot Fuels Examination Facility. His current interests include neutron radiographic inspections of fast reactor fuels and materials specimens.

D. C. Cutforth

