fusion technology

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ALPHA PARTICLES IN FUSION RESEARCH

PRELIMINARY ANALYSIS OF ALPHA-PARTICLE EFFECTS IN THE FUSION IGNITION EXPERIMENT IGNITEX

Rodolfo Carrera
Elena Montalvo
James W. Van Dam
Guo-Yong Fu
Lee M. Hively
George H. Miley
Marshall N. Rosenbluth
Steven Tamor

Rodolfo Carrera (top right) (PhD, nuclear engineering, University of Wisconsin–Madison, 1983) is chief scientist at the Institute for Fusion Engineering at the University of Texas–Austin. His interests include the scientific and technological aspects of the design and analysis of fusion ignition experiments. **Elena Montalvo** (top left) (PhD, nuclear engineering, University of Wisconsin–Madison, 1983) is a research scientist in charge of computational physics at the Institute for Fusion Engineering at the University of Texas–Austin. Her interests include the development of computational schemes for the analysis of the physics aspects of fusion ignition experiments. **James W. Van Dam** (second from top right) (PhD, physics, University of California–Los Angeles, 1979) is assistant director of the Institute for Fusion Engineering at the University of Texas–Austin. His interests include kinetics theory, magnetohydrodynamics, plasma waves, and equilibrium and stability in toroidal confinement devices. **Guo-Yong Fu** (center left) (BS, physics, China University of Science and Technology, 1983) is a research assistant and doctoral candidate at the Institute for Fusion Engineering at the University of Texas–Austin. His interests include transport limitations on access to ballooning mode second stability in tokamaks with auxiliary heating, as well as alpha-particle effects on Alfvén waves in ignition plasmas. **Lee M. Hively** (third from top right) (BS, engineering science, and BS, mathematics, 1970, Pennsylvania State University; MS, physics, 1971, and PhD, nuclear engineering, 1980, University of Illinois) is a member of the research staff in the Health and Safety Research Division of Oak Ridge National Laboratory. He is responsible for large code development and implementation on Cray computers. His research interests include high-energy fusion product transport and plasma performance in tokamaks. **George H. Miley** (bottom left) (PhD, University of Michigan, 1958) is a professor in the Department of Nuclear Engineering at the University of Illinois. In addition to research on fusion, he is well known for his research on energy conversion and nuclear-pumped lasers. **Marshall N. Rosenbluth** (bottom right) (PhD, University of Chicago, 1949) is a professor in the Department of Physics at the University of California–San Diego. He is a world authority on theoretical fusion research. **Steven Tamor** (no photograph

available) (PhD, physics, University of Rochester, 1950) is a consultant to the Institute for Fusion Engineering at the University of Texas–Austin. He is well known for his expertise in cyclotron radiation generation, propagation, reflection, and absorption in thermonuclear fusion plasmas.

INVESTIGATIONS OF FAST-PARTICLE BEHAVIOR IN JOINT EUROPEAN TORUS PLASMAS USING NUCLEAR TECHNIQUES

Guy J. Sadler
Sean W. Conroy
Owen N. Jarvis
Pieter van Belle
J. Martin Adams
Malcolm A. Hone

Guy J. Sadler (top right) (Ing. Civil Phys., University of Liege, Belgium, 1970; Dr. rer. nat., University of Cologne, Federal Republic of Germany, 1976) is a member of the experimental department of the Joint European Torus (JET). He was previously involved in the specification, design, and commissioning of the JET fusion products (neutrons, gamma rays, and charged particles) and X-ray diagnostics. His present main responsibility is the detailed interpretation of data measured by these systems with active involvement in the JET experimental program. **Sean W. Conroy** (top left) (BSc, physics, Imperial College, United Kingdom, 1986) recently submitted his PhD thesis to Imperial College. He has worked at JET performing research on 1.01-MeV triton burnup, 2.45-MeV neutron emissivity profile analysis, and escaping 14.7-MeV protons. He is now continuing his research in diagnosis and interpretation of fusion products at JET on a JET fellowship. **Owen N. Jarvis** (center right) (BSc, physics, 1957, and PhD, nuclear physics, 1960, University of Birmingham, United Kingdom) joined the United Kingdom Atomic Energy Authority (UKAEA) Harwell Laboratory in 1960 to work on the 140-MeV proton synchrocyclotron. He became involved in neutron diagnostic design work for JET in 1979 and is now leader of the JET neutron diagnostics group. **Pieter van Belle** (center left) (chemistry, Van Leeuwenhoek Institute, The Netherlands, 1976) is a member of the JET neutron diagnostics group and is currently involved in the operation of JET neutron diagnostics and the development of data analysis techniques. **J. Martin Adams** (bottom right) (BSc, University of Glasgow, United Kingdom, 1961; PhD, University of Manchester, United Kingdom, 1968) joined UKAEA Harwell Laboratory in 1961 to work on fast neutron time-of-flight (TOF) physics. He was involved in neutron elastic and inelastic scattering and prompt fast fission neutron spectrum measurements, and the development of fast neutron TOF detectors. He is now involved in neutron diagnostics for JET, particularly the JET neutron emission profile monitor. **Malcolm A. Hone** (bottom left) (HNC/GRAD I. Phys., applied physics, Oxford Polytechnic, United Kingdom, 1965) is a member of the JET neutron diagnostics group, where he is involved in the development and operation of fusion product diagnostics.

ALPHA-PARTICLE EXPERIMENTS ON THE TOKAMAK FUSION TEST REACTOR AND THE COMPACT IGNITION TOKAMAK

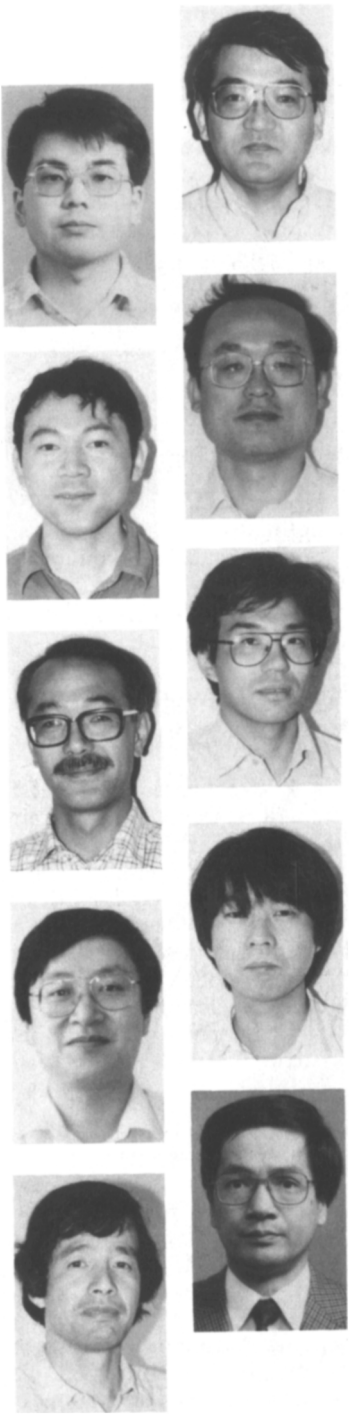
Stewart J. Zweben
J. D. Strachan
Kenneth M. Young

Stewart J. Zweben (top) (PhD, physics, Cornell University, 1977) is a physicist at Princeton Plasma Physics Laboratory (PPPL), where his current interest is in alpha-particle measurements on the Tokamak Fusion Test Reactor. He studied turbulence and edge plasmas on tokamaks at the University of California–Los Angeles and the California Institute of Technology before coming to Princeton. **J. D. Strachan** (bottom) (PhD,

University of British Columbia, Canada, 1972) has been a physicist at PPPL since 1975. His research interests include confinement processes and nuclear diagnostics in fusion research, especially tokamaks. **Kenneth M. Young** (right) (MA, physics, Aberdeen University, Scotland; PhD, astrophysical sciences, Princeton University) is head of the Plasma Diagnostics Division of the PPPL. He has been concerned with the instrumentation necessary for the measurement of plasma parameters in tokamaks including the Compact Ignition Tokamak (CIT) and International Thermonuclear Experimental Reactor (ITER).

INITIAL RESULTS OF HELIUM ASH EXPERIMENT IN THE JT-60 LOWER DIVERTOR

Hiroo Nakamura
Kenji Tobita
Toshio Hirayama
Yoshihiko Koide
Takashi Arai
Masaaki Kuriyama
Hirotaka Kubo
Yoshinori Kusama
Tatsuo Sugie
Masayoshi Sugihara
Tomonori Takizuka
Keiji Tani
Shin Yamamoto



Hiroo Nakamura (top right) (BS, nuclear engineering, 1973; MS, 1975, and PhD, 1989, engineering science, Kyushu University, Japan) is a senior scientist in the Large Tokamak Division I in the Department of Large Tokamak Research (DLTR) at the Japan Atomic Energy Research Institute (JAERI). He was involved in research and development of the JT-60 first wall and is now investigating plasma/wall interaction and power/particle exhaust in the JT-60. **Kenji Tobita** (top left) (MS, Tohoku University, Japan, 1984) is a research scientist in the Diagnostics Division of the DLTR at JAERI. He is involved in particle diagnostics by active beam in the JT-60. **Toshio Hirayama** (second from top right) (BS, 1973, and MS, 1975, Shinshu University, Japan) is a senior scientist in the Large Tokamak Division II of the DLTR at JAERI. He was involved in the JFT-2 experiment and is now in charge of tokamak transport analysis, including impurity transport. **Yoshihiko Koide** (second from top left) (BS, electrical engineering, 1982, and MS, 1984, Tohoku University, Japan) is a research scientist in the Diagnostics Division of the DLTR at JAERI. He is involved in ion temperature measurement by charge-exchange resonance spectroscopy. **Takashi Arai** (third from top right) (mechanical engineering, Ashikaga High School, Japan, 1972) is a technician in the JT-60 Division of JAERI. He works mainly on the vacuum pumping system of the JT-60. **Masaaki Kuriyama** (third from top left) (PhD, mechanical engineering, Tokyo Institute of Technology, Japan) is a principal scientist in the JT-60 Facility Division of JAERI. He is involved in developing and constructing the neutral beam injection system. **Hirotaka Kubo** (fourth from top right) (BS, engineering science, 1982, and MS, 1984, Kyoto University, Japan) is a research scientist in the Diagnostics Division of the DLTR at JAERI. He is engaged in the study of impurities by spectroscopy in JT-60. **Yoshinori Kusama** (no photograph available) (BS, physics, Science University of Tokyo, Japan, 1981; PhD, physics, University of Tsukuba, Japan, 1986) is a research scientist in the Diagnostics Division of the DLTR at JAERI. He is involved in particle diagnostics in the JT-60. **Tatsuo Sugie** (fourth from top left) (BS, 1973; MS, 1975; and PhD, 1979, physics, Hiroshima University, Japan) is a senior scientist in the Diagnostics Division of the DLTR at JAERI. He is involved in the study of impurities by spectroscopy in the JT-60. **Masayoshi Sugihara** (bottom right) (BS, 1969, and PhD, 1977, instrumentation engineering, Keio University, Japan) is a principal scientist on the Fusion Experimental Reactor (FER) Team of the DLTR at JAERI. His major area of interest is the physics design of the next large device, and he has been involved in the design of the International Thermonuclear Experimental Reactor (ITER) and the FER. **Tomonori Takizuka** (bottom left) (BS, electronics, 1970; MS, 1972; and PhD, 1975, Kyoto University, Japan) is a senior scientist in the Plasma Theory Laboratory in the Department of Thermonuclear

Fusion Research at JAERI. He has worked on tokamak physics theory. His interests include alpha-particle transport, divertor plasma, and confinement theory. **Keiji Tani** (top) (BS, 1971, and PhD, 1984, nuclear engineering, Osaka University, Japan) is a principal scientist in the Large Tokamak Division II in the DLTR at JAERI. He works in the area of high-energy particle physics. **Shin Yamamoto** (bottom) (BS, physics, 1969; and PhD, 1979, Kyoto University, Japan) is a principal scientist on the FER Team in the DLTR at JAERI. He was involved in the JFT-2a (DIVA), JFT-2, and JFT-2M experiments. He now works on the design of FER and ITER.

CAPABILITIES OF GAMMA SPECTROSCOPY FOR FAST ALPHA-PARTICLE DIAGNOSTICS

Vasilij G. Kiptilyj

Vasilij G. Kiptilyj (Leningrad State University, USSR, 1975; Candidate of Science, A. F. Ioffe Physical Technical Institute, USSR, 1986) is a research scientist at the A. F. Ioffe Physical Technical Institute. His research interests include nuclear reaction diagnostics of tokamak plasmas. He is now involved in gamma diagnostics projects for T-15, T-14, and the International Thermonuclear Experimental Reactor (ITER).

EFFECT OF ENERGETIC PARTICLE ABSORPTION ON FAST-WAVE CURRENT DRIVE

S. C. Chiu
V. S. Chan

Photographs and biographies for **S. C. Chiu** and **V. S. Chan** were not available at publication time.

ALPHA-PARTICLE-INDUCED TOROIDAL FLOWS IN TOKAMAK REACTOR PLASMA

Ya. I. Kolesnichenko
Yu. V. Yakovenko

Ya. I. Kolesnichenko (top) [DSc, physics, Kiev Institute for Nuclear Research of the Ukrainian SSR Academy of Sciences (KINR), USSR, 1978] is head of the Division of Theory on Future Nuclear Power Development of KINR. His current research interests include alpha-particle physics and current drive in tokamaks. **Yu. V. Yakovenko** (DSc, automatic control, V. M. Glushkov Institute of Cybernetics of the Ukrainian SSR Academy of Sciences, USSR, 1984) is a scientist in the Division of Theory on Future Nuclear Power Development at KINR. His current research interests include alpha-particle transport in toroidal systems.

ACTIVE CONTROL OF BURN CONDITIONS FOR THE INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR

Scott W. Haney
L. John Perkins
John Mandrekas
Weston M. Stacey, Jr.

Scott W. Haney (right) [BS, physics and nuclear engineering, University of California–Santa Barbara, 1983; PhD, nuclear engineering, Massachusetts Institute of Technology (MIT), 1988] is a physicist in the Magnetic Fusion Energy (MFE) Division at Lawrence Livermore National Laboratory (LLNL). His current

research interests include plasma engineering, magnetohydrodynamic equilibrium and stability, and applications of variational techniques to plasma physics problems. **L. John Perkins** (top) (BSc, physics, 1974; MSc, nuclear engineering, 1975; and PhD, physics, 1978, University of Birmingham, United Kingdom) is a physicist in the MFE Division at LLNL. His primary research interests at LLNL include plasma engineering, fusion reactor design, advanced fusion energy conversion concepts, advanced tokamak fueling methods, and physics and engineering scoping studies of tokamak engineering test reactors. He is currently one of the U.S. participants in the International Thermonuclear Experimental Reactor (ITER) design study. **John Mandrekas** (center) (diploma, mechanical and electrical engineering, National Technical University of Athens, Greece, 1979; MS, 1984, and PhD, 1987, nuclear engineering, University of Illinois) is a research scientist at the Fusion Research Center, Georgia Institute of Technology (GIT). His current research interests include neutral beam current drive and impurity transport in tokamaks, stability and burn control of fusion reactors, and theoretical plasma physics. **Weston M. Stacey, Jr.** (bottom) (BS, physics, 1959, and MS, nuclear science, 1963, GIT; PhD, nuclear engineering, MIT, 1966) is Callaway Professor of Nuclear Engineering at GIT and serves as senior U.S. participant in the International Atomic Energy Agency International Tokamak Reactor Workshop.

CONTROL OF ALPHA-PARTICLE TRANSPORT BY ION CYCLOTRON RESONANCE HEATING

C. S. Chang
Kaya Imre
Harold Weitzner
P. Colestock

C. S. Chang (right) (PhD, physics, The University of Texas–Austin, 1979) is a research professor at Courant Institute of Mathematical Sciences, New York University, and an associate professor of physics at Korea Advanced Institute of Science and Technology. He is also a visiting scientist at Plasma Physics Laboratory of Princeton University. His major research activities are in the development of plasma transport theories for magnetic confinement devices. Photographs and biographies for **Kaya Imre**, **Harold Weitzner**, and **P. Colestock** were not available at publication time.

PASSIVE BURN CONTROL IN A TOKAMAK PLASMA USING TOROIDAL FIELD RIPPLE

Keiji Tani
Masafumi Azumi
Tomonori Takizuka

Keiji Tani (top) (BS, 1971, and PhD, 1984, nuclear engineering, Osaka University, Japan) is a principal scientist in the Large Tokamak Experimental Division II of the Japan Atomic Energy Research Institute (JAERI). His current work is in the area of high-energy particle physics. **Masafumi Azumi** (center) (MS, electrical engineering, Kyoto University, Japan, 1969) is the general manager of the Large Tokamak Experimental Division II at JAERI. He is responsible for directing activities related to experimental analysis in JT-60. **Tomonori Takizuka** (bottom) (BS, 1970; MS, 1972; and PhD, 1975, Kyoto University, Japan) is a senior scientist in the Plasma Theory Laboratory in the Department of Thermonuclear Fusion Research at JAERI. He has worked on tokamak physics theory. His interests include alpha-particle transport, divertor plasma, and confinement theory.

EPITHERMAL AND THERMAL ALPHA-PARTICLE TRANSPORT AND CONTROL

George H. Miley
S. C. Hu
V. Varadarajan




George H. Miley (top) (PhD, University of Michigan, 1958) is a professor in the Department of Nuclear Engineering at the University of Illinois. In addition to research on fusion, he is well known for his research on energy conversion and nuclear-pumped lasers. **S. C. Hu** (center) (MS, University of Illinois) is a doctoral candidate in nuclear engineering at the University of Illinois. Her current research interests include plasma power balance and alpha-particle transport and control studies. **V. Varadarajan** (bottom) (BE, mechanical engineering, 1984; MS, nuclear engineering, 1987) is a doctoral student in the nuclear engineering department at the University of Illinois. His academic interests include plasma physics, reactor theory, controls, and thermal hydraulics.

COLD FUSION

A SEARCH FOR NEUTRON EMISSION FROM COLD NUCLEAR FUSION IN A TITANIUM-DEUTERIUM SYSTEM

Tatsuo Izumida
Yoshihiro Ozawa
Kunio Ozawa
Shigeru Izumi
Shunsuke Uchida
Tomohiko Miyamoto
Hisao Yamashita
Hiroshi Miyadera








Tatsuo Izumida (top right) (BS, 1976, and MS, 1978, unit process engineering, and Dr. Eng., 1981, Hokkaido University, Japan) is a researcher at the Hitachi Ltd. Energy Research Laboratory (ERL). His interests are irradiation chemistry, radioactive waste treatment, and decommissioning. **Yoshihiro Ozawa** (top left) (MS, nuclear engineering, 1970, and Dr. Eng., 1981, University of Tokyo, Japan) is a senior engineer at Hitachi Works. His current interest is nuclear fusion technology. **Kunio Ozawa** (second from top right) (BS, chemistry, 1953, and DSc, high-pressure physics, 1960, Kyoto University, Japan) is a chief investigator at ERL. He was previously a senior physicist and head of the atomic and molecular physics laboratory in the Department of Physics at the Japan Atomic Energy Research Institute for 25 years. His interests include high-technetium superconductivity, condensed matter confinement fusion, and greenhouse effects in global warming. **Shigeru Izumi** (second from top left) (BS, chemistry, 1965; MS, nuclear engineering, 1967; and Dr. Eng., 1986, Tokyo Institute of Technology, Japan) is a chief researcher at ERL, responsible for research and development of radiation measurement techniques. **Shunsuke Uchida** (third from top right) (BS, physics, 1964, and Dr. Eng., nuclear engineering, 1978, University of Tokyo, Japan) is a department manager at ERL. He is responsible for research on chemistry and technology related to boiling water reactors. **Tomohiko Miyamoto** (third from top left) (chemical engineering, Himeki Technical School, Japan, 1964) is a senior researcher at the Hitachi Research Laboratory (HRL). His interests are material science and new electric power plant systems. **Hisao Yamashita** (bottom right) (BS, 1968, and MS, 1970, applied chemistry, Yamanashi University, Japan; Dr. Eng., Osaka University, Japan, 1980) is a senior researcher at HRL. He is involved in catalysis management and energy conversion systems. **Hiroshi Miyadera** (bottom left) (BS, chemistry, University of Tokyo, Japan, 1967; Dr. Eng.,

Tohoku University, Japan, 1982) is a manager at HRL. He is involved in material science, energy conversion systems, and pollution control techniques.

PREDICTION OF NEW PARTICLE EMISSION IN COLD FUSION

T. Matsumoto

T. Matsumoto (no photograph available) (MS, nuclear engineering, Kyoto University, Japan, 1966) studied neutron and nuclear reactor physics at the Kyoto University Research Reactor Institute from 1966 to 1973. Since 1973, he has been an associate professor of nuclear engineering at Hokkaido University. His interests include nuclear transmutation of radioactive wastes.

CALORIMETRIC MEASUREMENTS OF EXCESS POWER OUTPUT DURING THE CATHODIC CHARGING OF DEUTERIUM INTO PALLADIUM

R. A. Oriani
John C. Nelson
Sung-Kyu Lee
J. H. Broadhurst

R. A. Oriani (top right) (PhD, physical chemistry, Princeton University, 1949) is professor emeritus at the University of Minnesota. His interests include thermodynamics and theory of alloys, diffusion, irreversible thermodynamics, solute/defect interactions, hydrogen in metals, electrochemistry, and corrosion. **John C. Nelson** (top left) (BS, metallurgical engineering, University of Texas-El Paso, 1983) is currently finishing work on a PhD in materials science and engineering at the University of Minnesota. **Sung-Kyu Lee** (bottom right) (BS, materials engineering, 1982, and MS, materials engineering, 1984, Hanyang University, Korea) has been a graduate student in the Department of Chemical Engineering and Materials Science at the University of Minnesota since 1985. **J. H. Broadhurst** (bottom left) (PhD, nuclear physics, University of Birmingham, 1959) is a professor at the University of Minnesota. His research interests are the determination of trace elements, isotope ratios, geological dating by accelerated ion mass spectroscopy, and determination of neutrino rest mass by beta-ray endpoint spectroscopy.

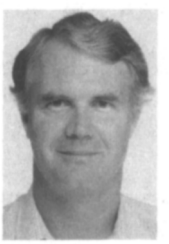
MEASUREMENTS OF HELIUM IN ELECTROLYZED PALLADIUM

John R. Morrey
Marc W. Caffee
Harry Farrar IV
Nathan J. Hoffman
G. Bryant Hudson
Russell H. Jones
Mark D. Kurz
John Lupton
Brian M. Oliver
Brian V. Ruiz
John F. Wacker
A. van Veen

John R. Morrey (top) (BS, chemistry, Brigham Young University, 1954; PhD, chemistry, University of Utah, 1958) is a staff scientist at Battelle Pacific Northwest Laboratory (BPNL). He is also an adjunct associate professor of physical chemistry at Washington State University. His professional experience includes chemical research and development in the chemistry of boranes, fused salts, fundamental spectroscopy, laser chemistry, computer applications to chemistry, isotope separations, high-temperature aqueous chemistry, geochemistry and geochemical modeling, and the chemistry of coals. **Marc W. Caffee** (bottom) (BS, mathematics and physics, California State College-Stanislaus; PhD, physics, Washington University-St. Louis) has been at Lawrence Livermore National Laboratory (LLNL) in the Nuclear

Chemistry Division since 1986. His current interests focus on the use of cosmic-ray-produced isotopes as tracers of recent geologic activity. **Harry Farrar IV** (top right) (BA, mathematics and physics, University of Toronto; MSc and PhD, nuclear physics, McMaster University, Hamilton, Canada) is general chairman of a series of American Society for Testing and Materials (ASTM)-Euratom symposia on reactor dosimetry. He is currently chairman of an international ASTM subcommittee that is writing dosimetry standards for radiation processing. **Nathan J. Hoffman** (top left) (MetE, Colorado School of Mines; MSc and DSc, metallurgy, Technion, Israel Institute of Technology) is engaged in research relating to rocket engine propulsion, nuclear engineering, fusion technology, and particularly the interactions among these three disciplines. **G. Bryant Hudson** (second from top right) (BS, physics and mathematics, Oklahoma City University; PhD, physics, Washington University–St. Louis) has been at LLNL in the Nuclear Chemistry Division since 1982. His interests currently focus on rare isotopes such as ^{3}H, ^{3}He, ^{10}Be, ^{26}Al, ^{36}Cl, ^{81}Kr, and ^{129}I as environmental tracers. **Russell H. Jones** (second from top left) (PhD, University of California–Berkeley, 1971) is currently a senior staff scientist, program manager for fusion materials research, and technical group leader in the materials sciences department at Battelle. His interests include impurity segregation, hydrogen embrittlement, stress corrosion cracking, metal and ceramic matrix composites, high-temperature crack growth in ceramics, and microstructure and mechanical properties of materials irradiated with light and heavy ions and sputter deposition of materials. **Mark D. Kurz** (third from top right) [BS, chemistry, University of Wisconsin–Madison, 1976; PhD, geochemistry, Massachusetts Institute of Technology (MIT), 1982] is currently an associate scientist at Woods Hole Oceanographic Institution in Massachusetts. **John Lupton** (third from top left) (BS, physics, Princeton University; PhD, physics, California Institute of Technology) currently holds a joint position as research oceanographer in marine sciences and as adjunct professor in geological sciences at the University of California–Santa Barbara. His research interests include studies of submarine hot springs on the ocean floor, the chemistry of natural gases emanating from geothermal and petroleum fields, and the use of natural variations in helium isotopes to chart deep ocean currents. **Brian M. Oliver** (bottom right) (BS, physics, University of California–Los Angeles; MSc, 1970, and PhD, 1973, plasma physics, University of Victoria, Canada) is a senior staff scientist at the Rocketdyne Division of Rockwell International, Canoga Park, California. His current interests include the development and use of helium accumulation neutron dosimetry for breeder, light water, and fusion reactor applications, and gamma irradiation applications in the areas of passive dosimetry and radiation hardening. **Brian V. Ruiz** (bottom left) has worked in the noble gas mass spectrometry laboratory in the Nuclear Chemistry Division at LLNL since 1986. His research interests include the production of noble gas isotopes from nuclear particle interactions and the use of noble gas isotopes as environmental tracers. **John F. Wacker** (no photograph available) (BS, physics, MIT, 1976; PhD, planetary sciences, University of Arizona, 1982) is a senior research scientist at BPNL. His research interests include the cosmochemistry of noble gases, chemical vapor deposit diamonds, and the use of meteorites to probe the origin of the solar system. **A. van Veen** (no photograph available) (PhD, experimental physics, University of Utrecht, Netherlands) is project leader of the radiation damage group in the Reactor Physics Division at the Interfaculty Reactor Institute of Delft University of Technology. His work has focused on the analysis of defects in materials by means of thermal helium desorption and positron annihilation techniques.





STATISTICAL ANALYSIS OF NEUTRON BURST SIZE AND RATE DURING ELECTROLYSIS OF LiOD SOLUTIONS

John N. Harb
William G. Pitt
H. Dennis Tolley

John N. Harb (top) (PhD, University of Illinois-Urbana/Champaign, 1988) is an assistant professor in chemical engineering at Brigham Young University (BYU). His background is in electrochemical engineering and his current interests involve mathematical simulation of complex physical systems. **William G. Pitt** (center) (PhD, University of Wisconsin-Madison, 1987) is an assistant professor of chemical engineering at BYU. His research interests are in materials science and polymer surface chemistry. **H. Dennis Tolley** (bottom) (PhD, University of North Carolina, 1974) is a professor of statistics at BYU. His research interests are analysis of count data, estimation of fuzzy partitions and applications to approximating temporal counting models. Current applications are in actuarial modeling, digital signal compression, and fuzzy logic applications to risk theory.

THE POSSIBLE NEGATIVE INFLUENCE OF DISSOLVED O_2 IN COLD NUCLEAR FUSION EXPERIMENTS

Pier Giorgio Sona
Marco Ferrari

Photographs and biographies for **Pier Giorgio Sona** and **Marco Ferrari** were not available at publication time.

NEUTRON BURST FROM A HIGH-VOLTAGE DISCHARGE BETWEEN PALLADIUM ELECTRODES IN D_2 GAS

Yeong E. Kim

Yeong E. Kim (no photograph available) (BS, chemistry and mathematics, Lincoln Memorial University, 1959; PhD, physics, University of California-Berkeley, 1963) has been professor of physics at Purdue University since 1967. He was a member of the National Science Foundation review panel for the Stanford Physics Accelerator and has been a consultant for Los Alamos National Laboratory since 1974. His interests are in theoretical nuclear physics, gravitational theory, theoretical geophysics, and nuclear fusion.

COULD SPECTATOR ELECTRONS LEGALIZE COLD FUSION?

Lali Chatterjee

Lali Chatterjee (PhD, Jadavpur University, India, 1980) is a University Grants Commission Research Associate in the Department of Physics at Jadavpur University. She has worked extensively on various aspects of muon physics, quantum electrodynamics, and particle physics. Her current research interests include muon-catalyzed fusion and particle physics.