

AUTHORS — JANUARY 1993

PLASMA ENGINEERING

STUDIES OF FUSION BURN CONTROL / *Dan Anderson, Thomas Elevant, Håkan Hamnén, Mietek Lisak, Hans Persson*

Dan Anderson (top right) (PhD, Chalmers University of Technology, Sweden, 1973) has been with the Institute for Electromagnetic Field Theory at Chalmers University of Technology since 1973, where he has been engaged in fusion plasma research. His research interests also cover other applications of electromagnetic field theory, in particular nonlinear optical pulse propagation and microwave discharges. **Thomas Elevant** (top left) (MSc, engineering physics, University of Lund, Sweden, 1973; PhD, Royal Institute of Technology, Sweden, 1981) joined the neutron diagnostics group at Princeton Plasma Physics Laboratory in 1973 and that of the Joint European Torus (JET) in 1987. He is in charge of a small group, associated with JET, involved with neutron diagnostics, particularly measurements of spectra. **Håkan Hamnén** (center right) (PhD, Chalmers University of Technology, Sweden, 1984) has worked in fusion plasma physics at Chalmers University of Technology and with the JET Joint Undertaking. He is now a senior bearings analyst at SKF Bearing Industries, working mainly in product development relating to tribological properties. **Mietek Lisak** (bottom left) (PhD, Chalmers University of Technology, Sweden, 1976) has been with the Institute for Electromagnetic Field Theory at Chalmers University of Technology since 1977, where he has been engaged in fusion plasma research. His research interests also cover other applications of electromagnetic field theory, particularly nonlinear optical pulse propagation and microwave discharges. **Hans Persson** (bottom right) (PhD, 1964, and DSc, 1967, plasma physics, Royal Institute of Technology, Sweden) is a plasma physicist at the Studsvik EcoSafe Company and an adjunct professor of theoretical electrotechnics in the Department of Technology at Uppsala University. His main research has dealt with plasma physics and fusion research and with the technical and scientific problems of nuclear electromagnetic pulses.



PASSIVE PLASMA VERTICAL STABILIZATION IN A SINGLE-TURN TOKAMAK CONFIGURATION / *Jiaqi Dong, Elena Montalvo, Rodolfo Carrera, Marshall N. Rosenbluth*

Jiaqi Dong (left) [MS, physics, Southwestern Institute of Physics (SIP), People's Republic of China, 1982] is a visiting research scientist at the University of Texas–Austin from SIP. His interests include kinetic theory, magneto-hydrodynamics, and equilibrium and stability in tokamaks. **Elena Montalvo** (right) (PhD, nuclear engineering, University of Wisconsin–Madison, 1983) is a research scientist at Valley Research Corporation. Her primary area of

interest is the numerical simulation of high- and low-temperature plasmas, including nuclear fusion devices and plasma processing for detoxification and microelectronics. **Rodolfo Carrera** (right) (PhD, nuclear engineering, University of Wisconsin-Madison, 1983) is a senior research scientist and president of Valley Research Corporation. His primary areas of interest are plasma and nuclear science and technology. **Marshall N. Rosenbluth** (left) (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.



BLANKET ENGINEERING

MULTIPLICATION OF 14-MeV NEUTRONS IN BULK BERYLLIUM / J. Richard Smith, John J. King, J. Wiley Davidson, Morris E. Battat

J. Richard Smith (top right) (BA, Brigham Young University, 1949; MA, 1951, and PhD, 1953, Rice University) retired in 1991 following nearly 38 years at the Idaho National Engineering Laboratory (INEL) under a succession of contractors. His major efforts were in measurement and evaluation of nuclear data for reactors. He was a charter member of the Cross Sections Evaluation Working Group. **John J. King** (top left) (BS, physics and mathematics, Manchester College; MS, physics, Ball State University) has been employed with EG&G Idaho at INEL for approximately 15 years. His work experience includes applied nuclear radiation measurements, seismology, risk assessment modeling, and technical assistance to the U.S. Nuclear Regulatory Commission. **J. Wiley Davidson** (bottom right) (BS, 1969; MS, 1975; and PhD, 1979, University of Texas-Austin) is leader of the Strategic Systems Engineering Group at Los Alamos National Laboratory (LANL). His responsibilities include systems analyses and systems engineering for Strategic Defense Initiative programs and technologies, studies of nuclear weapons effects and effectiveness, fusion energy systems analyses, blanket design and systems analyses for accelerator transmutation of waste, and systems analyses for accelerator production of tritium. His research has focused on the areas of transport theory and nucleonics methods development, fusion blanket design and analyses, nuclear cross-section experimental analyses, and radiation detector response characterization. **Morris E. Battat** (bottom left) (PhD, physics, Washington University, 1950) is currently a consultant at LANL. His principal work areas have included measurement of neutron cross sections, processing and verification of evaluated nuclear data, and nucleon transport calculations for radiation shields, fusion reactor designs, and applications of accelerator-driven spallation neutron source technology.



MEASUREMENT OF NEUTRON MULTIPLICATION IN LEAD ASSEMBLIES / Yuan Chen, Rong Liu, Haipin Guo, Wenmian Jiang, Jian Shen

Yuan Chen (right) [physics, Harbin University, People's Republic of China (PRC), 1965] is an associate professor at the Southwest Institute of Nuclear Physics and Chemistry (SWINPC), where he is head of a research group working on integral neutronics experiments. His research interests include fusion blankets, shielding, and neutronics. **Rong Liu** (left) (BS, nuclear physics, Sichuan University, PRC, 1984) is a research assistant at SWINPC. His research interests include integral neutronics experiments and calculations.



Haipin Guo (top) (BS, radioactive exploration, Chengdu College of Geology, PRC, 1988) is involved in experimental nuclear physics at SWINPC. **Wenmian Jiang** (center) (nuclear physics, Beijing University, PRC, 1959) is a senior fellow of the SWINPC, where he has directed integral neutronics experiments. He is involved in benchmarking and modeling of fusion neutronics. **Jian Shen** (bottom) (nuclear physics, Nankai University, PRC, 1958) has been engaged in experimental research in nuclear physics. His current interest is integral neutronics experiments on hybrid reactor blankets.



EXPERIMENTAL DEVICES

STABILITY PROPERTIES OF THE URAGAN-2M TORSATRON / *B. A. Carreras, N. Dominguez, V. E. Lynch, N. T. Besedin, I. M. Pankratov, A. A. Shishkin*

B. A. Carreras (top) is a Martin Marietta corporate fellow at Oak Ridge National Laboratory (ORNL). He has worked in magnetohydrodynamic (MHD) theory and applications to tokamaks, stellarators, and reversed-field pinches. **N. Dominguez** (center) (PhD, University of Texas–Austin, 1986) is a member of the research staff of the theory section of ORNL's Fusion Energy Division. He has worked on equilibrium and MHD stability of plasmas in mirrors, tokamaks, and stellarators. **V. E. Lynch** (bottom) (MS, University of Tennessee, 1979) is a member of the Computing and Telecommunications Division of ORNL. He has contributed in the fields of stellarator design and MHD calculations for stellarators and tokamaks. Biographies and photographs of **N. T. Besedin**, **I. M. Pankratov**, and **A. A. Shishkin** were not available.



ALPHA PARTICLES

OHMIC IGNITION IN A TOKAMAK REACTOR WITH A CONFINEMENT DEGRADATION EFFECT DUE TO ALPHA-PARTICLE HEATING / *Osamu Mitarai, Akira Hirose, Harvey M. Skarsgard*

Osamu Mitarai (top) (MS, mechanical engineering, 1977, and PhD, nuclear engineering, 1979, Kyushu University, Japan) is an associate professor of electrical engineering at Kumamoto Institute of Technology. He started an alternating current (ac) experiment in the STOR-1M tokamak and then proposed the ac tokamak reactor. His current interests are in the areas of current drive, ignition studies for deuterium-tritium and D-³He tokamak reactors, spin-polarized fusion, and plasma cosmology. **Akira Hirose** (center) (BE, 1956, and ME, 1967, Yokohama National University, Japan; PhD, University of Tennessee, 1969) is currently engaged in tokamak (STOR-M) experiments and theoretical work on anomalous transport. He is interested in waves and instabilities in plasmas. **Harvey M. Skarsgard** (bottom) (BE, engineering physics, 1949, and MSc, physics, 1950, University of Saskatchewan, Canada;



PhD, nuclear physics, McGill University, Canada, 1955) is a member of the faculty of the Physics Department at the University of Saskatchewan, where he started a plasma physics research laboratory. He has worked mainly on plasma heating experiments with the Plasma Betatron and STOR tokamaks.

COLD FUSION

HELIUM ANALYSIS OF PALLADIUM ELECTRODES AFTER MOLTEN SALT ELECTROLYSIS / *Bor Yann Liaw, Peng-Long Tao, Bruce E. Liebert*

Bor Yann Liaw (top) (PhD, materials science and engineering, Stanford University, 1988) is an assistant researcher in the Hawaii Natural Energy Institute at the University of Hawaii. His current interests are molten salt techniques, solid-state electrochemistry, and thin-film materials development for energy conversion and storage applications. **Peng-Long Tao** (center) (MS, physics, Jilin University, People's Republic of China) is a condensed-matter physicist and research associate in the Hawaii Natural Energy Institute at the University of Hawaii. He is currently involved in the investigation of elevated-temperature molten salt techniques for excess heat generation. **Bruce E. Liebert** (bottom) (PhD, materials science and engineering, Stanford University, 1977) is an associate professor in the Department of Mechanical Engineering at the University of Hawaii. His current interests are aqueous and solid-state electrochemistry, with emphasis on corrosion and photoelectrochemistry.



CAN BINUCLEAR ATOMS SOLVE THE COLD FUSION PUZZLE? / *Gian Franco Cerofolini, Armando Foglio Para*

Gian Franco Cerofolini (top) (DSc, physics, University of Milan, Italy, 1970) was involved in thin-film technology from 1970 to 1977; he was a staff scientist at SGS-Thomson from 1977 to 1988, involved in the physics and technology of silicon devices; and since 1988, he has been with the Functional Materials Department of Istituto Guido Donegani. **Armando Foglio Para** (DSc, physics, University of Milan, Italy, 1961) is an associate professor of nuclear radiation detection at Milan Polytechnic. His research interests include the utilization of nuclear instrumentation under various working conditions, the statistical analysis of data, and the modeling of radiation transport based on Monte Carlo simulations.



OBSERVATION OF MESHLIKE TRACES ON NUCLEAR EMULSIONS DURING COLD FUSION / *Takaaki Matsumoto*

Takaaki Matsumoto (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 with Hokkaido University as an associate professor of nuclear engineering. His interests include nuclear transmutation of radioactive wastes and nuclear industry.

