

AUTHORS — JANUARY 1992

ICF DRIVER TECHNOLOGY

TERRESTRIAL AND EXTRATERRESTRIAL SUPERRESONATORS AS DRIVERS FOR AN INERTIAL CONFINEMENT FUSION REACTOR

Walter Seifritz (top) [diploma, physics, 1964, and PhD, nuclear engineering, 1969, Technische Universität Karlsruhe, Federal Republic of Germany (FRG)] is on leave from Paul Scherrer Institute. His research interests lie in the field of advanced reactor and energy systems based on both fusion and fission. **Walter Väth** (Dr.-Ing., University of Karlsruhe, FRG, 1974) has been with Kernforschungszentrum Karlsruhe since 1966. His interests include passive shutdown systems and high-power, high-efficiency laser systems.

*Walter Seifritz
Walter Väth*



FIRST-WALL TECHNOLOGY

RATCHETING PROBLEMS OF THE U.S. INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR

Saurin Majumdar (PhD, University of Illinois, 1973) has been responsible for conducting stress and lifetime analyses of various fusion reactor blanket design studies conducted at Argonne National Laboratory since 1974.

Saurin Majumdar



PLASMA ENGINEERING

THE EFFECT OF THE PUFFED GAS SHELL PROFILE ON PLASMA DYNAMICS IN A SMALL GAS-PUFF Z-PINCH

Cheng Rong Li (right) [BS, 1982, and MS, 1984, electrical engineering, North China Institute of Electric Power, People's Republic of China (PRC); PhD, Tsing Hua University, PRC, 1989) has been employed at the high-voltage laboratory of the Beijing Graduate School of the North China Institute of Electric Power

*Cheng Rong Li
T. C. Yang
C. M. Luo
M. Han*



since 1990. He is involved in studies in gas insulating, insulation monitoring in power systems, electrical field measurements and calculations in high-voltage technology, and gas discharge in fusion technology. Photographs and biographies for **T. C. Yang**, **C. M. Luo**, and **M. Han** were not available at publication time.

MODELING OF LOW-ACCELERATION TWO-STAGE GUNS FOR TOKAMAK REFUELING

Giulio Riva (top) (Degree, aeronautical engineering, 1978, and PhD, energetics, 1982, Politecnico di Milano, Italy) has been a researcher at CNPM-CNR since 1983. His experience and current interests are in heterogeneous combustion and gas dynamics. **Adolfo Reggiori** (Degree, aeronautical engineering, Politecnico di Milano, Italy, 1962; PhD, New York University, 1968) is professor of fluid machinery at the University of Brescia. His experience is in gas dynamics and combustion. Current interests in the fusion field include high-speed pellet injection.

*Giulio Riva
Adolfo Reggiori*



DIVERTOR SYSTEMS

ON MODELING OF PLASMA EDGE CONDITIONS AT DIVERTORS WITH SOLID METAL NEUTRALIZERS

Chungpin Liao (top right) [BS, nuclear engineering, Tsing-Hua University, People's Republic of China, 1982; MS, nuclear engineering, Massachusetts Institute of Technology (MIT), 1989] is a PhD candidate working on the engineering evaluation of the feasibility of liquid-metal divertors at MIT. He made contributions to the discovery of non-Gaussian behavior in the ionospheric plasma heating experiments carried out at Arecibo, Puerto Rico. **Brian Labombard** (top left) (BS, nuclear engineering, University of Lowell, 1978; ScD, nuclear engineering, MIT, 1986) in 1986 joined the PISCES plasma/wall interaction group at the Institute of Plasma and Fusion Research, University of California-Los Angeles, where his work included plasma source development for the PISCES-B facility, development of a variety of diagnostics for edge plasma studies, and investigation of basic edge plasma transport phenomena in the PISCES facility and in the CCT tokamak. In 1988, he joined the Alcator group at the MIT Plasma Fusion Center where his work includes the design, modeling, and instrumentation of the limiter/divertor first-wall system in Alcator C-Mod and the development of edge plasma diagnostics. **Barton Lane** (bottom right) (BS, Harvard University, 1976; PhD, physics, MIT, 1981) worked on fusion applications at the MIT Plasma Fusion Center until May 1991. He is president of Plasma Dynamics, a company that develops plasma technology relevant to the field of surface processing for the semiconductor industry. He worked on the tandem mirror experiment Tara and the single-cell hot electron mirror Constance at MIT. He participated in the design work for a number of new tokamak experiments; recently, he analyzed edge plasma phenomena and implemented plasma shape reconstruction algorithms for the Alcator experiment. His interests include the design of novel plasma reactors for materials processing, the study of microinstabilities in mirror and tokamak plasmas, the interaction of plasmas with neutrals, and phenomena arising in low-temperature plasmas. **Mujid S. Kazimi** (bottom left) (BS, nuclear engineering, University of Alexandria,

*Chungpin Liao
Brian Labombard
Barton Lane
Mujid S. Kazimi*



Egypt, 1969; MS, 1971, and PhD, 1973, nuclear engineering, MIT) is a professor of nuclear engineering at MIT. He worked at Westinghouse Advanced Reactors Division and Brookhaven National Laboratory before joining MIT in 1976. He has been interested in thermal and safety analysis of nuclear systems including power reactors, fusion devices, and waste storage facilities.

OXYGEN IN THE LIQUID-METAL FUSION REACTOR BLANKET AND ITS POSSIBLE INFLUENCE ON THE COMPATIBILITY WITH MATERIALS

*N. P. Bhat
Hans U. Borgstedt*



N. P. Bhat (top) (MSc and PhD, University of Bombay, India) joined Bhabha Atomic Research Center (BARC) after graduating from the BARC Training School in 1964. He then moved to the Indira Gandhi Centre for Atomic Research to work on the Fast Breeder Test Reactor, and he is now engaged in work on liquid sodium coolant chemistry. He was a guest scientist at Kernforschungszentrum Karlsruhe (KfK), where he worked on oxygen potential measurements in liquid sodium and lithium-lead alloys and their interactions with structural materials. **Hans U. Borgstedt** (Dr. rer. nat., physical chemistry, Universität Karlsruhe, Federal Republic of Germany, 1959) joined KfK in 1963. He founded a laboratory for corrosion studies in liquid metals and is head of the Corrosion Section of the Institute of Materials and Solid State Research at KfK. He has contributed to work on sodium corrosion and chemistry for the fast breeder reactor and studies on the lithium corrosion of vanadium alloys for fusion reactors.



COLD FUSION

NEUTRON AND TRITIUM EVIDENCE IN THE ELECTROLYTIC REDUCTION OF DEUTERIUM ON PALLADIUM ELECTRODES

*D. Gozzi
P. L. Cignini
M. Tomellini
S. Frullani
F. Garibaldi
F. Ghio
M. Jodice
G. M. Urciuoli*

Photographs and biographies for **D. Gozzi**, **P. L. Cignini**, **M. Tomellini**, **S. Frullani**, **F. Garibaldi**, **F. Ghio**, **M. Jodice**, and **G. M. Urciuoli** were not available at publication time.

HIGH CONCENTRATION OF DEUTERIUM IN PALLADIUM

*Han S. Uhm
W. M. Lee*

Han S. Uhm (right) (PhD, physics, University of Maryland, 1976) is a plasma physicist at the Naval Surface Warfare Center. He researched equilibrium and stability properties of charged-particle beams characterized by intense self-electric and self-magnetic fields. He developed several mathematical schemes to understand the influence of finite geometry effect on various plasma physics problems. He has researched charged beam propagation through



a background plasma channel, high-power microwave generation and amplification, and high-energy and high-current accelerators for both electrons and ions. **W. M. Lee** (right) (PhD, physical chemistry, University of North Carolina, 1976) is a research physicist at the Naval Surface Warfare Center. His research has been in the areas of fast reactions of reactive materials, electrochemistry, and electronic structure of metal clusters.



POSSIBILITY OF PHASE TRANSITIONS INDUCING COLD FUSION IN PALLADIUM/DEUTERIUM SYSTEMS

Wan-Xiang Zhang (Wuhan University, China, 1962) is interested in high-pressure equations of state, the electronic structure of solids, and materials science.

Wan-Xiang Zhang



SEARCH FOR NEUTRONS AS EVIDENCE OF COLD FUSION

F. Cannizzaro (top right) (Dr. Eng., nuclear engineering, University of Palermo, Italy, 1971) is a researcher in the Department of Nuclear Engineering at the University of Palermo. His research interests are in instrumentation and measurement of nuclear radiation. **G. Greco** (top left) (Dr. Eng., electrotechnical engineering, University of Palermo, Italy, 1958) is a professor of nuclear measurements and instrumentation at the University of Palermo and a licensed supervisor of the AGN-201 COSTANZA research reactor. His areas of interests are high-resolution gamma-ray spectrometry and the design and development of nuclear counting systems. **M. Raneli** (center right) (Dr. Eng., nuclear engineering, University of Palermo, Italy, 1968) is a teacher at the Technical Institute V. Emanuele III in Palermo. He has actively participated in the research performed at the nuclear measurement laboratory at the University of Palermo. **M. C. Spitale** (bottom left) (Dr., physics, University of Palermo, Italy, 1955) is a professor of nuclear reactor physics at the University of Palermo. She is a licensed supervisor of the AGN-201 COSTANZA research reactor. Her research interests include measurements related to reactor and nuclear radiation. **E. Tomarchio** (bottom right) (Dr. Eng., nuclear engineering, University of Palermo, Italy, 1981) is a researcher in the Department of Nuclear Engineering at the University of Palermo. His research interests include radiation measurements and health physics.

*F. Cannizzaro
G. Greco
M. Raneli
M. C. Spitale
E. Tomarchio*



A PROPOSAL FOR A COLD FUSION STUDY IN THE Ti/D SYSTEM

Zhong Qun Tian (BSc, chemistry, Xiamen University, People's Republic of China, 1982; PhD, chemistry, Southampton University, United Kingdom, 1987) is an associate professor of chemistry employed at the State Key Laboratory of Physical Chemistry for Solid Surfaces at Xiamen University.

Zhong Qun Tian

