

AUTHORS — AUGUST 1994

FIRST-WALL TECHNOLOGY

THE INFLUENCE OF IMPURITIES ON THE MOLTEN DEPTHS IN SIMULATED PLASMA DISRUPTIONS / *George Tsotridis, Ignacio Goded*

George Tsotridis (top) (BSc, 1976, and PhD, 1983, nuclear engineering, University of London, United Kingdom; Diploma, von Karman Institute for Fluid Dynamics, Belgium, 1977) is a group leader at the Institute for Advanced Materials (IAM) of the Joint Research Centre (JRC), The Netherlands. His interests include irradiation of nuclear materials and modeling of fluid flows in various material processes. **Ignacio Goded** is a research technician at IAM JRC. During the last few years, he has been working on laser interaction with materials.



TRITIUM SYSTEMS

STUDY ON A METHOD TO RECOVER TRITIUM FROM BLANKET SWEEP GAS / *Masabumi Nishikawa, Ken-ichi Tanaka, Mitsuru Uetake*

Masabumi Nishikawa (top) (BE, chemical engineering, Kyoto University, Japan, 1966; MAsC, University of British Columbia, Canada, 1968; PhD, Kyoto University, Japan, 1971) is a professor in the Department of Nuclear Engineering at Kyushu University. His current interests include mass (tritium) and heat balance in fusion reactors and also in chemical reactors. **Ken-ichi Tanaka** (center) (BE, 1991, and ME, 1993, nuclear engineering, Kyushu University, Japan) is a graduate student of chemical engineering for atomic energy at Kyushu University. His current interests are in tritium recovery and isotope separation in fusion fuel cycle. **Mitsuru Uetake** (bottom) (BE, nuclear engineering, Kyushu University, Japan, 1993) is a graduate student of chemical engineering for atomic energy at Kyushu University. His current interests are in fuel cycles for fusion and fission.



BASIC REQUIREMENTS FOR A 1000-MW(electric) CLASS TOKAMAK FUSION-FISSION HYBRID REACTOR AND ITS BLANKET CONCEPT / Akiyoshi Hatayama, Masatada Ogasawara, Michinori Yamauchi, Kunihiko Okano, Yuzo Fukai, Tomoaki Yoshida, Tadasu Takuma, Kenji Yamaji

Akiyoshi Hatayama (top right) (BS, instrumentation engineering, 1976, and PhD, 1982, Keio University, Japan) is an associate professor in the Faculty of Science and Technology, Keio University. He previously worked with Toshiba Corporation from 1982 to 1991. His work has been in the area of plasma design and analysis of the tokamak fusion reactor. He is currently involved in the analysis of lower hybrid radio-frequency current drive in tokamaks and in the modeling of plasma in negative ion sources for neutral beam injection current drive. **Masatada Ogasawara** (top left) (BS, physics, Tokyo University of Education, Japan; PhD, plasma physics, University of Tokyo, Japan, 1963) is a professor in the Faculty of Science and Technology, Keio University. His work has been in the field of theoretical plasma physics including numerical simulation of negative ion sources, instabilities, and transport processes in fusion plasma. **Michinori Yamauchi** (second from top right) (BS, 1970, and MS, 1972, nuclear engineering, Nagoya University, Japan; PhD, Kyoto University, Japan, 1986) is a senior specialist in the Fusion Technology Development Office of Toshiba Corporation. He is currently engaged in the engineering of fusion safety, tritium, and blanket systems. **Kunihiko Okano** (second from top left) [BS, aero/astronautic engineering (propulsion) and nuclear engineering; PhD, University of Tokyo, Japan, 1984] is a research scientist in the Research and Development Center at Toshiba Corporation. He has developed computational models of ion cyclotron resonance frequency and neutral beam current drive in tokamaks. **Yuzo Fukai** (third from top right) (BS, electrical engineering, Waseda University, Japan, 1952; PhD, reactor physics, Tokyo Institute of Technology, Japan, 1964) is currently a technical advisor in the Nuclear Energy Division of Toshiba Corporation and is engaged in the development of calculation methods, especially the neutron collision probability method, for various fission reactors including the boiling water, the high-temperature gas-cooled, and the fast breeder reactors. His interest is neutronics of fusion reactors. **Tomoaki Yoshida** (third from top left) (BS, 1987, and MS, 1989, nuclear engineering, University of Tokyo, Japan) is a research engineer at the Central Research Institute of Electric Power Industry. His current interest is cost assessment of a fusion reactor. **Tadasu Takuma** (bottom right) (PhD, electrical engineering, University of Tokyo, Japan, 1966) is an associate vice-president at the Central Research Institute of Electric Power Industry. He has worked mainly in the fields of gas discharge and high-voltage engineering. His interest is fusion reactor design from the utility's point of view. **Kenji Yamaji** (bottom left) (BS and PhD, nuclear engineering, University of Tokyo, Japan, 1977) is a research fellow at the Central Research Institute of Electric Power Industry. His area of interest is energy technology assessment.



MUON-CATALYZED FUSION – AN ENERGY PRODUCTION PERSPECTIVE / Shalom Eliezer, Zohar Henis

Shalom Eliezer (top) (BS, 1965; MS, 1967; and DSc, 1971, physics, Technion-Israel Institute of Technology, Haifa, Israel) is a professor at the SOREQ Nuclear Research Center Department of Plasma Physics. His research interests have been in high-energy physics (first prediction of the neutrino mass from gauge theories in 1974) before 1976 and in laser/matter interactions, plasma physics, nuclear fusion, high-pressure and high-temperature physics, X-ray and gamma-ray lasers, and muon-catalyzed fusion since 1976. **Zohar Henis** (BS, 1979; MS, 1981; and PhD, 1990, physics, Hebrew University, Jerusalem,



Israel) is a researcher at the SOREQ Nuclear Research Center Department of Plasma Physics. Her research interests are in laser/matter interactions, plasma physics, high-pressure and high-temperature physics, X-ray lasers, and muon-catalyzed fusion.

SAFETY / ENVIRONMENTAL ASPECTS

WASTE DISPOSAL ASSESSMENT OF HYLIFE-II STRUCTURE / J. D. Lee

J. D. Lee (BSEE, Duke University, 1961; MS, nuclear engineering, University of New Mexico, 1966) has been involved in Lawrence Livermore National Laboratory's fusion programs since 1968. His work has included nucleonics analysis and design as well as design and system analysis of fusion and fusion-fission reactor studies for both magnetic confinement fusion and inertial confinement fusion.



SAFETY AND ENVIRONMENTAL COMPARISONS OF STAINLESS STEEL WITH ALTERNATIVE STRUCTURAL MATERIALS FOR FUSION REACTORS / Ann P. Kinzig, John P. Holdren, Paul J. Hibbard

Ann P. Kinzig (top) [BS, physics, University of Illinois, Urbana-Champaign, 1986; MA, physics, 1988, and PhD, energy and resources, 1994, University of California (UC) at Berkeley] is a postdoctoral researcher in the Department of Ecology and Evolutionary Biology at Princeton University. Her current research interests include the evolution and coevolution of plants and soil microorganisms, the response of terrestrial ecosystems to global environmental change, and the atmosphere/biosphere interaction in global change scenarios.

John P. Holdren (bottom) (BS, 1965, and MS, 1966, aeronautics and astronautics, Massachusetts Institute of Technology; PhD, aeronautics and astronautics/plasma physics, Stanford University, 1970) is a professor of energy, Energy and Resources Group, UC, Berkeley, and co-leader of the UC Berkeley fusion engineering project. His research interests include comparative environmental assessment of fusion and other energy technologies, causes and consequences of global environmental change, and problems and prospects of nuclear arms reductions. **Paul J. Hibbard** (photo not available) (BS, physics, University of Massachusetts, Amherst, 1985; MS, energy and resources, UC, Berkeley, 1990) is currently on the staff of the Electric Power Division of the Massachusetts Department of Public Utilities. His research interests include characterization of the fuel cycle impacts of nuclear power generation and the quantification of environmental impacts for use in electric utility integrated resource planning.



NUCLEAR REACTIONS IN SOLIDS

EVIDENCE FOR NEUTRON PRODUCTION DURING HEAVY WATER ELECTROLYSIS ON PALLADIUM ELECTRODE / Saša Blagus, Mladen Bogovac, Antun Drašner, Marijan Vuković

Saša Blagus (right) (MSc, physics, University of Zagreb, Croatia, 1981) has worked at the Laboratory of Nuclear Reactions at the Ruđer Bošković Institute since 1974, where he has had a research assistant position since 1981. His research interests include low-energy nuclear reaction, few body problems, neutron physics, and dosimetry of ionizing and nonionizing radiation.



Mladen Bogovac (top) (MS, physics, University of Zagreb, Croatia, 1990) has worked as a research assistant since 1986 at the Laboratory of Nuclear Physics at the Ruđer Bošković Institute. His research interests include low-energy nuclear reactions and few body problems. **Antun Drašner** (center) (MSc, chemistry, University of Zagreb, Croatia, 1985) has worked as a research assistant at the Laboratory for Solid-State Chemistry at the Ruđer Bošković Institute. His research interests include crystallography, intermetallic compounds, and the properties and structure of metal hydrides. **Marijan Vuković** (bottom) (BS, 1966; MSc, 1969; and PhD, 1974, chemistry, University of Zagreb, Croatia) is a senior research associate at the Ruđer Bošković Institute. He spent 2 years (1974 to 1976) doing postdoctoral studies at Colorado State University and the University of Ottawa. His main research interests include mechanisms and kinetics of electrode reactions, electrocatalysis, and surface-electrochemical properties of oxide films.

