

AUTHORS — SEPTEMBER 1994

PLASMA ENGINEERING

ION PUMPING FROM A MIRROR TRAP BY AN EXTERNAL ROTATING FIELD / *Nikita V. Shabrov, Vladimir I. Khvesjuk*

Nikita V. Shabrov (top) (MS, nuclear engineering, Moscow High Technical School, Russia, 1983; PhD, nuclear engineering, Moscow State Technical University, Russia, 1988) is a head of the laboratory at Moscow State Technical University, Power Engineering Institute. His research interests include plasma physics, plasma engineering for fusion reactor design, and ash pumping from plasma. **Vladimir I. Khvesjuk** (MS, applied physics, Moscow Aviation Institute, Russia, 1963; MS, applied mathematics, Moscow State University, Russia, 1968; PhD, thermophysics, Moscow High Technical School, Russia, 1970) is a professor of plasma physics and is a head of the Plasma Department at Moscow State Technical University, Power Engineering Institute. His current research centers on plasma/wall interaction, plasma physics, and engineering for fusion reactor design.



EFFECT OF NEUTRAL BEAM HEATING ON THE DYNAMICS OF THE INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR / *M. Naguib Aly, Hanaa H. Abou-Gabal*

M. Naguib Aly (top) (BS, 1976, and PhD, 1985, nuclear engineering, University of Alexandria, Egypt) is an associate professor in the University of Alexandria Nuclear Engineering Department. He is involved in digital simulation of nuclear power plants and artificial intelligence systems. **Hanaa H. Abou-Gabal** (BS, nuclear engineering, University of Alexandria, Egypt, 1980; MS, 1986, and PhD, 1989, nuclear engineering and engineering physics, University of Wisconsin-Madison) is an assistant professor in the University of Alexandria Nuclear Engineering Department. Her current research interest is in plasma physics and numerical simulation.



ENERGY FLOWS IN A QUASI-ISOBARIC FUSION REACTOR: PART III, RADIO-FREQUENCY HEATING / S. Chaturvedi, Robert G. Mills

S. Chaturvedi (top) [B. Tech., chemical engineering, Indian Institute of Technology, India, 1985; PhD, chemical engineering, Princeton University (PU), 1989] is currently working at the Institute for Plasma Research in Gandhinagar, India. His current research interests include tokamak system studies, numerical modeling of breakdowns and disruptions in tokamaks, and radiation hydrodynamics simulations for inertial confinement fusion. **Robert G. Mills** (BSE, electrical engineering, PU, 1944; MA, mathematics, University of Michigan, 1947; PhD, nuclear physics, University of California, Berkeley, 1952) is director of the Interdepartmental Program in Plasma Science and Fusion Technology at PU and leads a cooperative effort between the School of Engineering and Applied Science and the Plasma Physics Laboratory. Associated with PU's controlled thermonuclear research program for more than 30 years, he is the author of numerous publications on the engineering aspects of fusion power.



COMPUTER SIMULATION OF THE REIONIZATION EFFECTS FOR THE ASDEX-UPGRADE NEUTRAL BEAM INJECTOR / Albrecht Stäbler, Juliusz Sielanko, Siegbert Götz, Eckehart Speth

Albrecht Stäbler (top right) (PhD, nuclear physics, University of Tübingen, Germany, 1975) has been a physicist at the Max-Planck-Institut für Plasmaphysik, Garching, since 1976. He is currently involved in neutral beam heating of the ASDEX-Upgrade tokamak. **Juliusz Sielanko** (top left) (PhD, physics, M. C. Sklodowska University, Lublin, Poland). Since 1985, he has worked as a guest scientist with the neutral beam heating group of the Max-Planck-Institut für Plasmaphysik. His current research interests include surface and computer physics. **Siegbert Götz** (bottom right) (PhD, University of Karlsruhe, Germany, 1985) was a physicist at the Max-Planck-Institut für Plasmaphysik from 1985 to 1988 working on design calculations of neutral beam injectors. Since 1988, he has been with Robert Bosch GmbH Stuttgart, Germany. His current field of interest is microstructure technology. **Eckehart Speth** (bottom left) (PhD, nuclear physics, University of Heidelberg, Germany, 1970) has been a physicist at the Max-Planck-Institut für Plasmaphysik since 1971. Since 1976, he has been group leader of the neutral beam heating group in the Technology Division at the Max-Planck-Institut für Plasmaphysik.



A SIMPLIFIED ANALYTICAL METHOD TO ESTIMATE THE BISMUTH BUILD-UP AND THE POLONIUM ACTIVITY IN LiPb-BEARING BLANKETS OF A FUSION REACTOR / Sergei Zimin

Sergei Zimin (BS, 1980, and MS, 1982, engineering physics, Moscow Physical Engineering Institute, Russia; Dr. Eng., nuclear engineering, University of Tokyo, Japan, 1992) worked from 1981 to 1991 as a research associate in the neutron physics laboratory at the Kurchatov Institute of Atomic Energy.



He has been involved with shielding analyses for several thermonuclear reactor projects, namely, International Tokamak Reactor (INTOR), OTR, International Thermonuclear Experimental Reactor (ITER)/OTR, and ITER conceptual design activity (CDA). He was also a member of the former USSR ITER CDA home team. He has been employed since 1991 in the Japan Atomic Energy Research Institute Department of the ITER Project as a research fellow. Currently, he is a member of the Japanese ITER engineering design activities home team and is a temporary consultant in neutronics for the ITER Naka Joint Central Team. His research interest is fusion technology.

FUSION REACTORS

A PROPOSAL FOR A MATERIAL IRRADIATION TEST REACTOR BASED ON A STEADY-STATE SUBIGNITED TOKAMAK PLASMA / *Yuichi Ogawa, Nobuyuki Inoue, Kunihiko Okano*

Yuichi Ogawa (top) (PhD, engineering, University of Tokyo, Japan, 1981) is an associate professor at the University of Tokyo. He has worked on plasma experiments and fusion reactor design. **Nobuyuki Inoue** (center) (BS, nuclear physics, 1961, and PhD, 1971, Kyoto University, Japan) is a professor of nuclear engineering at the University of Tokyo. His areas of interest are fusion reactor design and high-temperature plasma applications. **Kunihiko Okano** (bottom) [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.



ELECTROLYTIC DEVICES

TRITIUM GENERATION AND LARGE EXCESS HEAT EVOLUTION BY ELECTROLYSIS IN LIGHT AND HEAVY WATER-POTASSIUM CARBONATE SOLUTIONS WITH NICKEL ELECTRODES / *Reiko Notoya, Yohichi Noya, Toshiyuki Ohnishi*

Reiko Notoya (top) (BSc, chemistry, 1961; MSc, electrochemistry, 1963; and DSc, electrochemical kinetics, 1970, Hokkaido University, Japan) is a research associate at the Hokkaido University Catalysis Research Center, working on fundamental electrochemistry and electrochemical energy conversion. Her interests include catalysis and physical chemistry. **Yohichi Noya** (center) (BFi, chemistry, Hokkaido University, Japan, 1982) is a technical official at Central Institute of Radioisotope Science, Hokkaido University, working in the field of microanalysis by use of neutron radiation. **Toshiyuki Ohnishi** (bottom) (BSc, chemistry, 1963, and DSc, biochemistry, 1971, Hokkaido University, Japan) is a professor at Central Institute of Radioisotope Science, Hokkaido University, working on the environmental distribution of radioisotopes and the development of reduction of radioactive waste.



PLASMA DYNAMICS IN A MAGNETICALLY INSULATED TARGET FOR INERTIAL FUSION / *Necdet Aslan, Terry Kammash*

Necdet Aslan (top) [BS, physics, Hacettepe University, Turkey, 1985; MS, 1986, and PhD, 1993, nuclear engineering, University of Michigan (UM)] is currently assistant professor of physics, Marmara University, Turkey, and a consultant in computational fluid dynamics at Cekmece Nuclear Center, Turkey. **Terry Kammash** (BS, aeronautical engineering, The Pennsylvania State University, 1952; PhD, nuclear engineering, UM, 1958) served as a consultant on controlled fusion research at Lawrence Livermore National Laboratory, Argonne National Laboratory, Oak Ridge National Laboratory, and Battelle Pacific Northwest Laboratories.

