

## AUTHORS — AUGUST 1989

### OVERVIEW

#### WHY EXTRAP?

**Bo Lehnert** (MS, electrical engineering, 1950, and PhD, magnetohydrodynamics, 1955, Royal Institute of Technology, Stockholm, Sweden; full professorship, plasma physics and fusion research, Swedish Natural Science Research Council, Stockholm, Sweden, 1968) has been head of the Fusion Research Unit of the Swedish Euratom Association since 1980. His research interests are plasma physics and its applications to thermonuclear fusion and to cosmic physics.

*Bo Lehnert*



### BLANKET ENGINEERING

#### EFFECTS OF NONUNIFORM SURFACE HEAT FLUX AND UNIFORM VOLUMETRIC HEATING ON BLANKET DESIGN FOR FUSION REACTORS

**Mohammad Z. Hasan** [BS, mechanical engineering, Bangladesh University of Engineering and Technology; MS, mechanical engineering, University of Kentucky; PhD, nuclear engineering, University of California, Los Angeles (UCLA), 1985] is currently with the Institute of Plasma and Fusion Research at UCLA. His primary research interests are ordinary hydrodynamic and magnetohydrodynamic fluid flow and heat transfer in fusion environments, thermal-hydraulic design of fusion power reactors, conventional and advanced power conversion systems for fusion application, and neutral atom transport in fusion plasmas.

*Mohammad Z. Hasan*



#### SELF-SHIELDING CHARACTERISTICS OF AQUEOUS LITHIUM SALT BLANKETS FOR NEXT-GENERATION FUSION DEVICES

**Sandro Pelloni** (right) (PhD, mathematics and theoretical physics, Swiss Federal Institute of Technology, Switzerland, 1980) is a visiting associate professor at Rensselaer Polytechnic Institute (RPI) and a member of the Physics Division at the Swiss Federal Institute for Reactor Research. He has worked for some

*Sandro Pelloni  
Edward T. Cheng  
Mark J. Embrechts*



years in the nucleonic analysis of fusion and fission reactors, in cooperation with European and U.S. laboratories. His present activities deal with the preparation and testing of nuclear data libraries. **Edward T. Cheng** (top) (PhD, nuclear engineering, University of Wisconsin, 1976) has been a member of the development and technology group in the Fusion Division of GA Technologies, Inc. since 1978. He has been involved with various fusion blanket and reactor design studies, including fusion breeder and chemical production applications. His interests are primarily in neutronics, radioactivity, and blanket engineering. He is currently coordinating the nuclear data needs activities for magnetically confined fusion energy development. **Mark J. Embrechts** (bottom) (MS, electrical engineering, University of Leuven, Belgium, 1977; MS, 1978, and PhD, 1981, nuclear engineering, Virginia Polytechnic Institute) is an associate professor in nuclear engineering and engineering physics at RPI. His interests include fusion reactor design, blanket neutronics, plasma/wall interaction, and nonlinear analysis. He has worked with Los Alamos National Laboratory, Paul Scherrer Institute (Switzerland), the University of Leuven, and the Next European Torus Team.



PLASMA ENGINEERING

**MULTISPECIES CLASSICAL DIFFUSION IN FUSION REACTOR MAGNETIZED PLASMAS**

**David L. Galbraith** (top) [BS, engineering physics, Cornell University, 1957; MS, 1959, and PhD, 1977, nuclear engineering University of Michigan (UM)] is currently an assistant research scientist at UM. His areas of interest include theoretical analysis of fusion reactors and computer programming. **Terry Kammash** (BS, aeronautical engineering, 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.

*David L. Galbraith  
Terry Kammash*



**POTENTIAL OF NEUTRAL BEAM CURRENT DRIVE FOR STEADY-STATE AND QUASI-STEADY-STATE TOKAMAK REACTORS**

**Kunihiko Okano** (top) [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. **Shin Yamamoto** (center) (BS, physics, 1969; PhD, Kyoto University, Japan, 1979) is a senior scientist with the Fusion Experimental Reactor (FER) Team at the Japan Atomic Energy Research Institute (JAERI), and has worked on JFT-2a, JFT-2, and JFT-2M. He is presently engaged in the design of the FER. **Masayoshi Sugihara** (bottom) (BS, instrumentation engineering, 1969; PhD, Keio University, Japan, 1977) is a senior scientist with the FER Team at JAERI. His work has been in the area of plasma design and analysis of tokamak fusion

*Kunihiko Okano  
Shin Yamamoto  
Masayoshi Sugihara  
Noboru Fujisawa*



reactors. His interests are in plasma engineering for the FER/ International Thermonuclear Experimental Reactor (ITER) and in the development of analysis codes for related plasma physics. **Noboru Fujisawa** (right) (BS, electrical engineering, 1963; PhD, Nagoya University, Japan, 1971) is principal scientist in the Division of Large Tokamak Development at JAERI. He has worked on JFT-2 and Doublet III and is presently engaged in the plasma design of fusion reactors like FER, ITER, and the International Tokamak Reactor.



### IRRADIATION BEHAVIOR OF FINE-GRAIN GRAPHITES

*B. T. Kelly*

**B. T. Kelly** (BSc, 1955, and MSc, 1966, physics, University of Wales, United Kingdom) is currently deputy head of laboratories and head of the Fuel and Materials Division at the United Kingdom Atomic Energy Authority, Northern Research Laboratories. His research interests include the physics of graphite and irradiation damage in graphite, control rod design for fast reactors, and modeling of reactor component performance.



### NOTICE

Call for Technical Notes on Cold  
Fusion in *Fusion Technology*  
(see details on p. 116)