

Fusion technology™

CONTENTS / MAY 1992—VOL. 21, NO. 3

PART 2A (pp. 1307–1764)

PART 2B (pp. 1765–2208)

**Proceedings of the
TENTH TOPICAL MEETING ON
THE TECHNOLOGY OF FUSION ENERGY
Boston, Massachusetts, June 7–12, 1992**

- xi** Preface: Tenth Topical Meeting on the Technology of Fusion Energy:
Meeting Highlights / *Nermin A. Uckan*

MAGNETIC AND INERTIAL FUSION EXPERIMENTS

- 1309** Status and Plans for JT-60U / *A. Kitsunezaki, The JT-60U Team*

- 1317** Technical Aspects of the First JET Tritium Experiment / *M. Huguet, R. Haange, A. C. Bell, S. J. Booth, C. Caldwell-Nichols, A. Carmichael, P. Chuilon, N. Davies, K. J. Dietz, F. Delvart, F. Erhorn, H. Falter, B. J. Green, B. Grieveson, A. Haigh, J. L. Hemmerich, D. Holland, J. How, T. T. C. Jones, R. Laesser, M. Laveyry, J. Lupo, A. Miller, P. Milverton, G. Newbert, J. Orchard, A. Peacock, R. Russ, G. Saibene, R. Sartori, L. Serio, R. Stagg, S. L. Svensson, E. Thompson, P. Trealion, E. Usselman, T. Winkel, M. E. P. Wykes*

- 1324** Status and Plans for TFTR / *R. J. Hawryluk, D. Mueller, J. Hosea, C. W. Barnes, M. Beer, M. G. Bell, R. Bell, H. Biglari, M. Bitter, R. Boivin, N. L. Bretz, R. Budny, C. E. Bush, L. Chen, C. Z. Cheng, S. Cowley, D. S. Darrow, P. C. Efthimion, R. J. Fonck, E. Fredrickson, H. P. Furth, G. Greene, B. Grek, L. R. Grisham, G. Hammett, W. Heidbrink, K. W. Hill, D. Hoffman, R. A. Hulse, H. Hsuan, A. Janos, D. L. Jassby, F. C. Jobes, D. W. Johnson, L. C. Johnson, J. Kamperschroer, J. Kesner, C. K. Phillips, S. J. Kilpatrick, H. Kugel, P. H. LaMarche, B. LeBlanc, D. M. Manos, D. K. Mansfield, E. S. Marmar, E. Mazzucato, M. P. McCarthy, J. Machuzak, M. Mauel, D. C. McCune, K. M. McGuire, S. S. Medley, D. R. Mikkelsen, D. Monticello, Y. Nagayama, G. A. Navratil, R. Nazikian, D. K. Owens, H. Park, W. Park, S. Paul, F. Perkins, S. Pitcher, D. Rasmussen, M. H. Redi, G. Rewoldt, D. Roberts, A. L. Roquemore, S. Sabbagh, G. Schilling, J. Schivell, G. L. Schmidt, S. D. Scott, J. Snipes, J. Stevens, B. C. Stratton, J. D. Strachan, W. Stodiek, E. Synakowski, W. Tang, G. Taylor, J. Terry, J. R. Timberlake, H. H. Towner, M. Ulrickson, S. von Goeler, R. Wieland, J. R. Wilson, K. L. Wong, P. Woskov, M. Yamada, K. M. Young, M. C. Zarnstorff, S. J. Zweben*

- 1332** Status and Plans for DIII-D / *T. C. Simonen*

- 1340** Recent Nova Experimental Results / *J. D. Kilkenny, H. A. Baldis, S. H. Batha, M. D. Cable, E. M. Campbell, R. C. Cook, C. B. Darrow, T. Dittrich, R. J. Ellis, S. G. Glendinning, S. W. Haan, B. A. Hammel, S. P. Hatchett, D. R. Kania, R. L. Kauffman, H. N. Kornblum, O. L. Landen, S. M. Lane, R. A. Lerche, J. D. Lindl, K. Levendahl, D. S. Montgomery, J. Moody, T. Murphy, D. H. Munro, D. W. Phillion, B. A. Remington, D. B. Ress, L. J. Suter, G. L. Tietbohl, A. R. Thiessen, R. E. Turner, R. J. Wallace, J. D. Wiedwald, F. Ze*

(Continued)

CONTENTS / MAY 1992–VOL. 21, NO. 3

PARTS 2A and 2B

(Continued)

- 1344** Nova Upgrade Mission and Design / *E. Michael Campbell, William J. Hogan, W. Howard Lowdermilk*
- 1350** Status and Plans for GEKKO XII and Japanese Laser Fusion Program / *Sadao Nakai, Kunioki Mima, Yoneyoshi Kitagawa*
- 1358** Results from PBFA II / *Donald L. Cook*

INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR

- 1367** Status and Plans for U.S. ITER Studies / *James N. Doggett*
- 1370** Status and Plans for Japanese FER/ITER Studies / *Shinzaburo Matsuda*
- 1373** Engineering Status and R&D Plan of NET / *The NET Team*
- 1380** A High-Aspect-Ratio Design for the International Thermonuclear Engineering Reactor / *John C. Wesley, The U.S. ITER Home Team*
- 1389** Remote Maintenance Challenges for the International Thermonuclear Experimental Reactor / *D. C. Lousteau, J. N. Herndon, F. C. Davis, S. L. Schrock*
- 1397** MHD Stability Considerations for the High Aspect Ratio Design / *J. T. Hogan, N. A. Uckan*
- 1406** Scaling of Divertor Temperature and Heat Loads for TPX-Class Devices / *J. T. Hogan, J. Wesley*
- 1416** A Comparison of Results from an Edge-Plasma Model with Those from a Two-Dimensional Fluid Code / *W. L. Barr, R. H. Bulmer, L. J. Perkins, S. A. Cohen, K. A. Werley*
- 1421** Transport Analysis of ITER Startup, Burn, and Shutdown Scenarios / *W. A. Houlberg, N. A. Uckan*
- 1427** Criteria and Design Trade-Off Issues for ITER / *D. E. Post, N. A. Uckan, The U.S. ITER Home Team*
- 1434** Assessment of the Adequacy of the ITER Engineering Design Activity Physics R&D Program / *D. E. Post, S. A. Cohen, J. Hogan, W. M. Nevins, P. H. Rutherford, D. Sigmar, D. Stotler, N. A. Uckan, J. C. Wesley*
- 1444** ITER Physics R&D Assessment for Confinement and Plasma Performance Projections / *Nermin A. Uckan, The U.S. ITER Home Team*

INERTIAL FUSION REACTOR STUDIES

- 1451** Conclusions and Directions from the OFE Inertial Fusion Reactor Studies / *David H. Crandall*
- 1460** Design of Laser Fusion Reactor Driven by Laser-Diode-Pumped Solid State Laser / *Y. Kitagawa, K. Mima, H. Takabe, M. Yamanaka, K. Naito, T. Hashimoto, K. Nishihara, M. Murakami, Laser Fusion Reactor Design Committee, S. Nakai*

(Continued)

CONTENTS / MAY 1992–VOL. 21, NO. 3

PARTS 2A and 2B

(Continued)

- 1465 Overview of the Osiris IFE Reactor Conceptual Design / *R. F. Bourque, W. R. Meier, M. J. Monsler*
- 1470 A KrF Laser Driven Inertial Fusion Reactor "SOMBRERO" / *I. N. Sviatoslavsky, M. E. Sawan, R. R. Peterson, G. L. Kulcinski, J. J. MacFarlane, L. J. Wittenberg, H. Y. Khater, E. A. Mogahed, S. C. Rutledge, Sunil Ghose, Robert Bourque*
- 1475 HYLIFE-II Inertial Fusion Energy Power Plant Design / *Ralph W. Moir*
- 1487 HYLIFE-II Reactor Chamber Mechanical Design / *Palmer A. House*
- 1492 Inertial Fusion Energy Power Plant Design Using the Compact Torus Accelerator: HYLIFE-CT / *R. W. Moir, J. H. Hammer, C. W. Hartman, R. L. Leber, B. G. Logan, R. W. Petzoldt, M. Tabak, M. T. Tobin, R. L. Bieri, M. A. Hoffman*
- 1501 BOP Designs for OSIRIS and SOMBRERO IFE Reactor Plants / *Sunil K. Ghose, Leonard M. Goldman, Kim D. Auclair*
- 1506 Thermal Conversion System for the Prometheus-L Inertial Fusion Energy Power Plant / *P. J. Estreich, S. L. Ostrow, K. Haller*
- 1514 Blast Venting Through Blanket Material in the HYLIFE ICF Reactor / *James C. Liu, Per F. Peterson, Virgil E. Schrock*
- 1520 Gas Dynamics in the Central Cavity of the HYLIFE-II Reactor / *Xiang M. Chen, Virgil E. Schrock, Per F. Peterson, Philip Colella*
- 1525 The Soft-Sphere Equation of State for Liquid Flibe / *Xiang M. Chen, Virgil E. Schrock, Per F. Peterson*
- 1531 The Hydraulic Analysis of Cylindrical Flibe Jets in a HYLIFE-II ICF Reactor / *Xiang M. Chen, Virgil E. Schrock, Per F. Peterson*
- 1536 The Calculation of the Kinetic Rate Constants for LiF and BeF₂ / *Xiang M. Chen, Virgil E. Schrock, Per F. Peterson*
- 1541 Fuel Processing Design for Inertial Confinement Reactors / *O. K. Kveton, S. K. Sood, R. S. Matsugu*
- 1547 Economic Modeling and Parametric Studies for Osiris—A HIB-Driven IFE Power Plant / *Wayne R. Meier, Robert L. Bieri*
- 1552 Economic Modeling and Parametric Studies for SOMBRERO—A Laser-Driven IFE Power Plant / *Wayne R. Meier, Chas. W. von Rosenberg, Jr.*
- 1557 Performance and Cost of the HYLIFE-II Balance of Plant / *M. A. Hoffman, Y. T. Lee*

INERTIAL FUSION DRIVERS

- 1571 Advances in the Engineering of High Field Applied-B Ion Diodes for Inertial Confinement Fusion / *D. C. Rovang*
- 1578 Final Focusing Magnetic Lenses for Light Ion Beam Fusion Reactors / *E. Mogahed, L. J. Wittenberg, E. Lovell, I. N. Sviatoslavsky, B. Choi*

(Continued)

CONTENTS / MAY 1992–VOL. 21, NO. 3

PARTS 2A and 2B

(Continued)

- 1583** Heavy-Ion Driver Design and Scaling / *Robert Bieri, Michael Monsler, Wayne Meier, Larry Stewart*
- 1589** Heavy-Ion Driver Parametric Studies and Choice of a Base 5 Mega-Joule Driver Design / *Robert Bieri, Wayne Meier*
- 1594** Heavy Ion Beam Drive Final Drift, Compression, and Focusing Design / *L. D. Stewart, E. L. Hubbard*
- 1600** KrF Driver System Architecture for a Laser Fusion Power Plant / *Chas. W. von Rosenberg, Jr.*

PLASMA ENGINEERING

- 1607** Engineering Characteristics of the Ignitor Ult Experiment / *B. Coppi, M. Nassi, L. E. Sugiyama*
- 1612** Plasma Characteristics for a Compact D-T Ignition Experiment / *B. Coppi, L. E. Sugiyama, M. Nassi*
- 1617** Design-Oriented Methods for One-Dimensional Analysis of Fusion Reactor Plasma Performance / *S. L. Painter, P. N. Stevens*
- 1624** Plasma Feedback Control System Design and the Results of JT-60U / *M. Matsukawa, H. Ninomiya, H. Horiike, N. Hosogane, R. Yoshino*
- 1630** Development of a Two-Dimensional Finite Element Plasma Edge Model / *R. A. Vesey*
- 1635** Initial Results from Ion Temperature Profile Deconvolution in Compact Tori / *R. M. Mayo*
- 1639** Characterization of an Inertial-Electrostatic Confinement Glow Discharge (IECGD) Neutron Generator / *J. H. Nadler, G. H. Miley, Y. Gu, T. Hochberg*
- 1644** The TFTR Neutral Beam Performance Database / *T. Stevenson, K. Silber, L. Lakin, R. Newman, A. von Halle, M. D. Williams*
- 1648** Experimental Study of a Megawatt 200–300 GHz Gyrotron Oscillator / *T. L. Grimm, K. E. Kreischer, W. C. Guss, R. J. Temkin*
- 1654** Multi-Megawatt Gyrotron Design Study / *W. C. Guss, M. A. Basten, M. Blank, T. L. Grimm, K. E. Kreischer, R. J. Temkin*
- 1658** A Cryocondensation Pump for the DIII-D Advanced Divertor Program / *J. P. Smith, C. Baxi, E. Reis, L. Sevier*
- 1662** The TFTR Tritium Pellet Injection Facility Mechanical Design / *G. W. Barnes, R. Persing, G. Schmidt, M. Gouge, L. Baylor, M. Cole, S. Combs, D. Fehling, P. W. Fisher, C. Foust, S. Milora, L. Qualls*
- 1665** Tritium Pellet Injector for TFTR / *M. J. Gouge, L. R. Baylor, M. J. Cole, S. K. Combs, G. R. Dyer, D. T. Fehling, P. W. Fisher, C. R. Foust, R. A. Langley, S. L. Milora, A. L. Qualls, J. B. Wilgen, G. L. Schmidt, G. W. Barnes, R. G. Persing*

(Continued)

CONTENTS / MAY 1992–VOL. 21, NO. 3

PARTS 2A and 2B

(Continued)

- 1672 Pre-Operational Test Results of the TFTR Neutral Beam D-T Gas Delivery System / *K. E. Wright, M. E. Oldaker, G. R. Pinter*
- 1678 Optimization of Two-Stage Gas Gun for Fusion Refueling Pellet Injection with Consideration of Real Effects / *Ming Lun Xue*
- 1683 Engineering and Cost Study of the CFAR Power Plant / *M. A. Hoffman, W. O. Muller*
- 1688 Design and Safety Analysis of the CFAR Cycle Concept / *M. A. Hoffman, C. L. Gallagher*
- 1693 Intermediate Heat Exchanger and Steam Generator Designs for the HYLIFE-II Fusion Power Plant Using Molten Salts / *Y. T. Lee, M. A. Hoffman*
- 1699 Remote Handling for Fusion Machines / *C. Holloway, J. W. F. Millard*

MAGNETIC FUSION REACTOR AND SYSTEMS STUDIES

- 1707 Fusion Power Reactor Studies in Japan / *Yasushi Seki*
- 1715 Fusion Power Reactor Studies in the European Community / *R. Hancox*
- 1721 The ARIES-II and ARIES-IV Second-Stability Tokamak Reactors / *F. Najmabadi, R. W. Conn, The ARIES Team*
- 1729 Small Tokamaks for Fusion Technology Testing / *Y.-K. M. Peng, J. D. Galambos, P. C. Shipe*
- 1739 Startup Scenarios of an Advanced Fuel Tokamak: First Wall and Shield Thermal Response / *E. A. Mogahed, G. A. Emmert, M. E. Sawan*
- 1744 Preliminary Design of a Solid Particulate Cooled Blanket for the Steady State Tokamak Reactor (SSTR) / *S. Mori, H. Miura, S. Yamazaki, T. Suzuki, Y. Seki, T. Kunugi, S. Nishio, N. Fujisawa, A. Hishinuma, M. Kikuchi, A. Shimizu*
- 1749 A "Supercode" for Systems Analysis of Tokamak Experiments and Reactors / *S. W. Haney, W. L. Barr, J. A. Crotinger, L. J. Perkins, C. J. Solomon, E. A. Chaniotakis, J. P. Freidberg, J. Wei, J. D. Galambos, J. Mandrekas*
- 1759 System Studies of Copper- and Superconducting-Coil Pilot Plants / *J. Galambos, C. Baker, Y.-K. M. Peng, D. Cohn, M. Chaniotakis, L. Bromberg, S. O. Dean*

ALTERNATE CONCEPTS AND APPLICATIONS

- 1767 Modular Stellarator Reactors and Plans for Wendelstein 7-X / *G. Grieger, C. Beidler, E. Harmeyer, W. Lotz, J. Kisslinger, P. Merkel, J. Nührenberg, F. Rau, E. Strumberger, H. Wobig*

(Continued)

CONTENTS / MAY 1992—VOL. 21, NO. 3

PARTS 2A and 2B

(Continued)

- 1779** Safety and Environmental Characteristics of Recent D-³He and DT Tokamak Power Reactors / *G. L. Kulcinski, J. P. Blanchard, G. A. Emmert, L. A. El-Guebaly, H. Khater, C. W. Maynard, E. A. Mogahed, J. F. Santarius, M. E. Sawan, I. N. Sviatoslavsky, L. J. Wittenberg*
- 1784** Low Cost, High Yield IFE Reactors: Revisiting Velikhov's Vaporizing Blankets / *B. G. Logan*
- 1794** Magnetic Fusion for Space Propulsion / *J. F. Santarius*

PLASMA-FACING COMPONENTS

- 1805** Plasma Facing Component Development: Boundary Layer Physics and Component Engineering / *R. T. McGrath, A. J. Russo, R. B. Campbell, R. D. Watson*
- 1817** Experience with Carbon Fiber Composite Limiter Tiles on TFTR / *M. Ulrickson, G. Barnes, H. M. Fan, G. Labik, D. Loesser, L. Lontai, D. K. Owens*
- 1823** Critical Issues and Innovative Solutions for the Divertor Plate Design in Future Experimental Tokamak-Type Fusion Reactors / *R. Matera, W. Janssens, P. de Meester*
- 1828** Normal Flow Heat Exchanger for Divertor Panel Cooling / *Michael G. Izenzon, Javier A. Valenzuela*
- 1835** Experimental and Analytical Evaluations on Critical Heat Flux Under One Sided Heating Condition for Fusion Applications / *M. Araki, M. Ogawa, M. Akiba, S. Suzuki*
- 1840** Heat Transfer in Plasma-Facing Components of Fusion Reactors: Non-MHD Laminar Flow in Rectangular Channels / *K. Takase, M. Z. Hasan, T. Kunugi*
- 1845** A Feasibility Assessment of Liquid Metal Divertors / *Chungpin Liao, Mujid S. Kazimi*
- 1852** Performance of Graphites and Tungsten During Exposure to Pulsed Plasmas / *M. A. Bourham, O. E. Hankins, J. G. Gilligan, J. D. Hurley, W. H. Eddy*
- 1858** Thermal Cycling Experiments of Monoblock Divertor Modules for Fusion Experimental Reactors / *S. Suzuki, M. Akiba, M. Araki, K. Yokoyama*
- 1863** Sensitivity Study on Some Parameters of Disruption Erosion Analysis / *T. Kunugi, M. Akiba, M. Ogawa, H. Ise, S. Yamazaki*
- 1868** The Simulation of the Energy Deposition from Runaway Electrons in Plasma Facing Components with EGS4 / *T. Kunugi, M. Akiba, M. Ogawa, O. Sato, M. Nakamura*
- 1873** High Thermal Performance CFC Divertor / *R. Matera, M. Merola*
- 1880** Thermo-Mechanical Performance of Beryllium-Coated Copper Divertors / *A. E. Hechanova, M. S. Kazimi*

(Continued)

CONTENTS / MAY 1992–VOL. 21, NO. 3

PARTS 2A and 2B

(Continued)

- 1887** The Initial Design of First Wall for Tokamak Engineering Test Breeder /
H. W. Shi, K. M. Feng, G. L. Din, X. R. Wang, G. S. Zhang

MAGNETICS

- 1893** A Proposed Prototype Coil R&D Program for ITER / *D. B. Montgomery*
- 1898** Comparison of Predicted and Measured Electromagnetic Data for Alcator C-MOD / *R. D. Pillsbury, Jr., S. Fairfax, R. Granetz, S. Horne, I. Hutchinson, G. Tinios, S. Wolfe*
- 1905** Computational Estimates of Stress Intensity Factors for Cracks in Conductor Jackets in a Bonded Winding / *K. M. Nikbin, G. A. Webster, N. Mitchell*
- 1909** A Comparison of Two Three-Dimensional Shell-Element Transient Electromagnetics Codes / *J. J. Yugo, D. E. Williamson*
- 1914** Numerical Simulation of the Stability in Long Cable-in-Conduit Conductors for Fusion Magnets / *C. T. Yeaw, R. L. Wong*

MATERIALS AND TRITIUM

- 1921** Incorporation of Irradiation Effects in Design: A Review of Experience from the Breeder Reactor Program / *A. Boltax*
- 1927** Irradiation Behavior of Bonded Structures: Impact of Swelling-Creep-Stress Relationship / *M. H. Hassan, J. P. Blanchard, G. L. Kulcinski*
- 1934** Implantation Driven Permeation of Deuterium Through Pure Molybdenum / *W. M. Shu, K. Okuno, Y. Hayashi, S. Ohira, Y. Naruse*
- 1939** Analysis of Tritium Transport Mechanisms at the Surface of Lithium Ceramics / *Alya Badawi, A. René Raffray, Mohamed A. Abdou*
- 1944** Production Behavior and Its Modeling of Irradiation Defects in Lithium Oxide Under Ion Beam Irradiation / *Y. Asaoka, H. Moriyama, Y. Ito*
- 1949** A Vacuum Disengager for Tritium Removal from HYLIFE-II Reactor Flibe / *T. J. Dolan, G. R. Longhurst, E. Garcia-Otero*
- 1955** Tritium Gas Injection System for TFTR D-T Operations / *J. H. Chrzanowski, P. LaMarche, P. Ladd*
- 1959** Characteristics of the "Cryogenic-Wall" Thermal Diffusion Column for Separation of Hydrogen Isotopes / *A. Matsumoto, T. Yamanishi, K. Okuno, Y. Naruse*
- 1964** Sorption of Tritiated Water on Organic Materials and Subsequent Desorption / *F. Ono, S. Tanaka, M. Yamawaki*
- 1968** Knowledge Collection and Operator Training Using an Artificial Intelligence System / *J. Barnes, K. Duerre, J. Anderson, J. Bartlit, W. Parkinson, R. Sherman, T. Hayashi, Y. Naruse*

(Continued)

CONTENTS / MAY 1992–VOL. 21, NO. 3

PARTS 2A and 2B

(Continued)

- 1974** Molecular Sieve Regeneration System for Assaying HTO from Detritiation Systems / *J. E. Nasise, J. L. Anderson, Y. Naruse*
- 1979** Recent Tritium Experiments of the JAERI Fuel Cleanup System (JFCU) at the Tritium Systems Test Assembly (TSTA) / *T. Hayashi, S. Konishi, H. Nakamura, M. Inoue, K. Hirata, K. Okuno, Y. Naruse, J. W. Barnes, W. Harbin, R. Wilhelm, M. King, J. R. Bartlit, J. L. Anderson*
- 1984** Experience with Maintenance of a Tritium Contaminated Test Component at TSTA / *J. Barnes, W. Harbin, J. Anderson, J. Bartlit, T. Hayashi, H. Nakamura, M. Inoue, K. Hirata, K. Okuno, Y. Naruse*

SAFETY, RECYCLING, AND WASTE MANAGEMENT

- 1989** Improving the Value of Risk Assessments for Fusion / *D. F. Holland, L. C. Cadwallader, S. J. Piet*
- 1994** Can We Recycle Fusion Materials? / *G. J. Butterworth*
- 2001** Materials Recycling Considerations for D-T Fusion Reactors / *E. T. Cheng, D. K. Sze, J. A. Sommers, O. T. Farmer III*
- 2009** First Structural Wall Materials for Attractive Waste Management in ICF Reactors / *J. Sanz, J. M. Perlado, D. Guerra, A. S. Pérez*
- 2017** Neutron-Induced Radioactivity in a Compact Ignition Experiment / *M. Zucchetti, B. Coppi*
- 2023** Safety Analysis for "SOMBRERO": A KrF Laser Driven IFE Reactor / *H. Y. Khater, M. E. Sawan, I. N. Sviatoslavsky, L. J. Wittenberg*
- 2029** Inertial Fusion Energy – Safety & Environmental Issues / *S. F. Marschke, S. L. Ostrow*
- 2036** Experiments on Exchange Flow Through Two Breaches During Loss of Vacuum Accident in Nuclear Fusion Experimental Reactor / *M. Ogawa, T. Kunugi, The ITER/FER Safety Group*
- 2041** Hydrogen/Hydrocarbon Explosions in the ITER Vacuum Vessel / *P. L. Goranson*
- 2046** A Study of the Total LOCA Transient in ITER / *F. Andritsos, M. Zucchetti*
- 2051** The Impact of Reactor Operating Time on Activation Levels for Safety Analyses / *H. Y. Khater, M. E. Sawan*
- 2056** Comprehensive Safety Evaluation Methodology for Fusion Reactor / *M. Yamauchi, Y. Seki, S. Kobayashi, F. Kasahara*
- 2062** Preliminary Decontamination and Decommissioning Plan for the Tokamak Fusion Test Reactor / *G. R. Walton, J. C. Commander*

BLANKET SHIELD AND NEUTRONICS

- 2069** Neutronics Analysis for the First Wall and Shield of the D-³He Reactor ARIES-III / *M. E. Sawan, L. A. El-Guebaly*

(Continued)

CONTENTS / MAY 1992–VOL. 21, NO. 3

PARTS 2A and 2B

(Continued)

- 2075** European Research and Development Programme for Water-Cooled Lithium-Lead Blankets: Present Status and Future Work / *L. Giancarli, F. Barbier, T. Flament, M. Futterer, P. Leroy, E. Proust, J. Sannier, X. Raepsaet, A. Terlain, V. Coen, A. Perujo, T. Sample, G. Benamati, P. Agostini*
- 2081** Water-Cooled Lithium-Lead Blanket Design Studies for DEMO Reactor: Definition and Recent Developments of the Box-Shaped Concept / *L. Giancarli, Y. Severi, L. Baraer, P. Leroy, J. Mercier, E. Proust, J. Quintric-Bossy*
- 2089** Experimental Programme in Support of the Development of the European Ceramic-Breeder-Inside-Tube Test-Blanket: Present Status and Future Work / *E. Proust, N. Roux, T. Flament, V. Levy, L. Anzidei, S. Casadio, G. Dell'Orco*
- 2099** MHD Considerations for a Self-Cooled Liquid Lithium Blanket / *D. K. Sze, R. F. Mattas, A. B. Hull, B. Picologlou, D. L. Smith*
- 2107** Analysis of Bulk Shielding Experiments on Large SS316 Assemblies / *F. Maekawa, C. Konno, K. Kosako, Y. Oyama, Y. Ikeda, H. Maekawa*
- 2112** Activation Analysis for the D-³He Reactor ARIES-III / *H. Y. Khater, M. E. Sawan*
- 2117** Neutron Multiplication in Beryllium / *J. Richard Smith*
- 2123** Heat Transfer Correlations for Packed Beds / *W. Fundamenski, P. Gierszewski*
- 2128** Neutronics Aspects of ARIES-II and ARIES-IV Fusion Power Reactors / *Laila A. El-Guebaly*
- 2133** Neutronics Analysis for the Light Ion Beam Reactor LIBRA-LITE / *M. E. Sawan*
- 2138** Environmental and Safety Aspects of "OSIRIS": A Heavy Ion Beam Driven IFE Reactor / *H. Y. Khater, M. E. Sawan, I. N. Sviatoslavsky, L. J. Wittenberg, W. R. Meier*
- 2145** Pulsed/Intermittent Activation in Fusion Energy Reactor Systems / *J. E. Sisolak, S. E. Spangler, D. L. Henderson*
- 2152** Further Adaptation of the European Ceramic-B.I.T. Blanket Conceptual Design to Updated DEMO Specifications / *B. Bielak, E. Proust, J. Szczepanski*
- 2159** Activation Analysis for the Cavity of the PROMETHEUS ICF Design / *Insoo Jun, Mohamed Abdou*
- 2169** Bulk Shielding Experiments on Large SS316 Assemblies / *C. Konno, F. Maekawa, Y. Ikeda, Y. Oyama, K. Kosako, H. Maekawa*
- 2174** Analyses of 14 MeV Neutron Transport in Spherical Iron Assemblies with New Double-Differential ⁵⁶Fe Cross-Section Data / *U. Fischer, E. Wiegner*
- 2180** Measurements of Decay Radioactivity of Long-Lived Isotopes / *A. Kumar, M. A. Abdou, M. Z. Youssef, Y. Ikeda, C. Konno, Y. Oyama, K. Kosako, F. Maekawa, H. Maekawa*

(Continued)

CONTENTS / MAY 1992–VOL. 21, NO. 3
PARTS 2A and 2B

(Continued)

- 2190** Measurement and Analysis of Nuclear Heat Depositions in Structural Materials Induced by D-T Neutrons / *Y. Ikeda, C. Konno, K. Kosako, Y. Oyama, F. Maekawa, H. Maekawa, A. Kumar, M. Z. Youssef, M. A. Abdou*
- 2197** Liquid Metal Flow Through a Right Angle Bend in a Strong Magnetic Field / *L. Barleon, L. Bühler, K. J. Mack, R. Stieglitz, B. F. Picologlou, T. Q. Hua, C. B. Reed*

DEPARTMENT

- 2204** Author Index