

Contents

Program

Monday	28th November	-----	4
Tuesday	29th November	-----	6
Wednesday	30th November	-----	8
Thursday	1st December	-----	9
Poster Session 1	(28th November)	-----	10
Poster Session 2	(29th November)	-----	17

Abstracts of Papers

Monday	28th November	-----	27
Tuesday	29th November	-----	147
Wednesday	30th November	-----	269
Thursday	1st December	-----	279

Program

Monday, 28th November, 2011

	Title	Page
PLENARY SESSION 1		
PL-1	T. Mutoh Physics and Technology of Steady State Operation in LHD	27
PLENARY SESSION 2		
PL-2	S.J. Zinkle Materials Science under Extreme Conditions: Overview of Materials Challenges for Realizing Practical Fusion Energy	28
SESSION 1 Confinement/2-D Devices		
I-1	M.G. Bell Progress Towards Steady-State Operation in NSTX Through Advances in Plasma Control and Plasma-Wall Interactions	29
I-2	A. Pochelon Recent TCV results – innovative plasma shaping to improve plasma properties and insight	30
PLENARY SESSION 3		
PL-3	X. Gong Overview of Experimental Results in the EAST Tokamak	31
SESSION 2 Confinement/3-D Devices		
I-3	T.E. Evans Suppression of Edge Localized Modes in the DIII-D Tokamak with Small 3D Magnetic Perturbations	32
O-1	W. Chen Excitation of Beta-induced Alfvén Eigenmode during Strong Interchange Mode in Large Helical Device	33
O-2	S. Yamamoto Studies of MHD stability in Heliotron J Plasmas	34

	Title	Page
SESSION 3 Confinement/Physics Topics		
I-4	S. Shiraiwa Progress in LHCD experiment and modelling to approach AT regime on Alcator C-Mod	35
O-3	A. Melnikov Plasma Potential in Toroidal Devices: T-10, TJ-II, CHS and LHD	36
O-4	G.M.D. Hogewij Optimizing the current ramp-up phase for the hybrid ITER scenario	37

POSTER SESSION 1

Tuesday, 29th November, 2011

		Title	Page
PLENARY SESSION 4			
PL-4	H.K. Park	2-D Microwave Imaging Experiments on KSTAR	147
SESSION 4 PWI/Divertor			
I-5	H. Meyer	Super-X Reality: Implementing an Innovative Divertor	148
O-5	I.Y. Tolstikhina	Influence of the isotope effect on the charge-exchange process between hydrogen isotopes and ions and atoms of plasma facing component materials	149
O-6	H. Takeda	Divertor Simulation study using the GAMMA 10 end-mirror cell	150
SESSION 5 Heating/Fuelling			
I-6	G.T. Hoang	Advances in Lower Hybrid Current Drive for Tokamak Long Pulse Operation: Technology and Physics	151
I-7	H. Idei	ECW / EBW Heating and Current Drive Experiment Results and Prospects to CW Operation in QUEST	152
O-7	A. Isayama	Recent Results from the Development of the Electron Cyclotron Heating System for JT-60SA toward High-Power Long-Pulse Operations	153
O-8	M. Wada	Steady State Operation of Ion Sources for Fusion Plasma Heating	154
SESSION 6 Diagnostics/Control			
I-8	T. Estrada	Microwave Reflectometry Diagnostics: Present day systems and challenges for future devices	155
I-9	I. Yonekawa	ITER instrumentation and control system toward long pulse operation	156
O-9	M. Hirsch	Diagnostic- and other in-vessel components in the high-power μ -wave background of ECR heated steady-state discharges	157

		Title	Page
O-10	S. Kajita	Fatal damages due to breakdown on a diagnostic mirror located outside the vacuum vessel in JT-60U	158
SESSION 7 Safety/Tritium			
I-10	T. Tanabe	Summary of Japanese Researches on Tritium Science and Technology for Fusion Reactor	159
O-11	Y. Someya	Estimation of decay heat in fusion DEMO reactor	160
O-12	M. Nishikawa	Overall Burning Efficiency of Tritium and Tritium Balance in a D-T Fusion Reactor	161

POSTER SESSION 2

Wednesday, 30th November, 2011

	Title	Page
PLENARY SESSION 5		
PL-5	G. Federici Challenges on the Path to DEMO and Activities in the Power Plant Physics and Technology Department under EFDA	269
SESSION 8 Material/Blanket		
I-11	M. Enoda Progress of ITER Test Blanket Module Development in Japan	270
O-13	V. Tsisar Effect of lithium purity on in-situ formation of Er ₂ O ₃ oxide layer on V-4Ti-4Cr alloy	271
O-14	A.R. Gines Silicon Carbide Nanopillar Fabrication on Silicon Carbide Substrate by Direct CF ₄ Etching Using the Gas Discharge Ion Source	272
SESSION 9 DEMO Concept		
I-12	F. Najmabadi Assessment and comparison of pulsed and steady-state tokamak power plants	273
I-13	N. Yanagi Design and R&D activities for the LHD-type heliotron DEMO	274
O-15	K. Yamazaki Critical Issues of Burning Plasma, Engineering, Economic and Environmental Assessments in Steady-State Fusion Reactors	275
O-16	R.C. Wolf Assessment of the physics and technology requirements for a fusion DEMO	276

Thursday, 1st December, 2011

	Name	Title	Page
PLENARY SESSION 6			
PL-6	M. Noe	History and prospects of applied superconductivity technology for fusion magnets	279
SESSION 10 Magnet			
I-14	D.P. Hampshire	What is the nature of the critical current density in superconducting materials under strain in high magnetic fields?	280
O-17	T. Hemmi	Neutron Diffraction Study of Internal Strain in Nb ₃ Sn Cable-In-Conduit Conductors	281
O-18	S. Awaji	Internal strain states of high strength Nb ₃ Sn wires and cables	282
SESSION 11 Model/Simulation			
I-15	V.K. Decyk	Particle Simulations on GPU supercomputing systems	283
I-16	H. Sugama	Kinetic Simulations of Neoclassical and Anomalous Transport Processes in Helical Systems	284
I-17	C.S. Chang	High Performance Integrated Simulation of Fusion Plasmas	285
O-19	F.L. Waelbroeck	Theory of driven magnetic islands	286
SESSION 12 Cross Cutting			
I-18	H.J. Kim	Cross-cutting Ideas for a Fusion DEMO Plant with Current and Generation IV Nuclear Power Plants	287
I-19	K.A. Tanaka	Research platforms of laser and ion beam induced ablation plasmas as interdisciplinary reactor studies	288
SESSION 13 Steady State DEMO			
I-20	S. Masuzaki	Particle and heat control for steady state burning plasma in helical reactor	289

Monday, 28th November, 2011-Poster Session 1

No.	Author	Title	Page	No.	Author	Title	Page
P1-1	J. Miyazawa	Assessment of Plasma Performance in a Magnetic Configuration with Reduced Poloidal Coils for a Helical DEMO Reactor FFHR-d1	41	P1-19	N. Shinoda	Toroidal distributions of gas retention and impurity deposition for 13th experimental campaign in LHD	57
P1-2	Y. Takemura	Parameter dependence of MHD mode rotation in the Large Helical Device	42	P1-20	K. Matsuoka	Impurity Effects of Hydrogen Isotope Retention on Boronized Wall in LHD	58
P1-4	K.Y. Watanabe	Study of Confinement Properties on Unfavorable LHD Configurations for Ideal MHD Instabilities using TASK3D-code	43	P1-21	M. Matsuyama	Tritium Retention on Stainless Steel Surface Exposed to Plasmas in LHD	59
P1-5	E. Narita	Impact of T_e/T_i on energy confinement properties in a tokamak plasma	44	P1-22	Y. Tomita	Dust Dynamics Released from Plasma-Facing Components in HL-2A Tokamak	60
P1-6	D. Sawada	Effect of Nuclear plus Interference Scattering on Fast Alpha-particle Orbit and Confinement in DT Plasmas	45	P1-23	Y. Nobuta	Deuterium retention and desorption behavior of co-deposited carbon film produced by deuterium arc discharge with carbon electrodes	61
P1-7	V. Mykhaylenko	Non-modal renormalized gyrokinetic approach for time-dependent plasma shear flow	46	P1-24	A. Matsumoto	Deuterium retention in graphite and its removal by inert gas glow discharge	62
P1-8	T. Watanabe	Reduced Size LHD-type Fusion Reactor with D-shaped Magnetic Surface	47	P1-25	S. Saito	Hydrogen Atom Behavior with Structural Change of Carbon Materials	63
P1-9	A.F. Nastoyashchiy	Another approach to problem of controlled nuclear fusion	48	P1-26	A.M. Ito	Time Development of Agglomeration Process on Carbon Dusts in Hydrocarbon Plasma	64
P1-10	A.F. Nastoyashchiy	Laser nuclear fusion on the basis of mini-torus shaped target	49	P1-27	T. Kenmotsu	Retention of Hydrogen Isotopes in Tungsten Exposed to ELM Plasma	65
P1-11	M. Shoji	Design of a vacuum pumping system for a closed helical divertor for steady state operation in LHD	50	P1-28	Y. Hatano	Deuterium Trapping by Radiation Defects in Tungsten	66
P1-13	G. Kawamura	1D model study on the effect of impurity radiation cooling on LHD SOL plasma	51	P1-29	K. Ohya	Simulation of Deuterium Retention in Tungsten Exposed to Divertor Plasmas	67
P1-14	T. Iijima	Effect of divertor target geometry on detached plasma in divertor simulator TPD-SheetIV	52	P1-30	A. Takayama	Simulation Study of Tungsten Exposed to Helium / Neon / Argon Based on Binary Collision Approximation	68
P1-15	I. Katanuma	Calculation of Ion Orbits in the Divertor/Dipole Regions of the GAMMA10 A-divertor	53	P1-31	H. Liu	Cross-Field Motion of Plasma Blob-filaments and Related Particle Flux in an Open Magnetic Field Line Configuration on QUEST	69
P1-16	S. Togo	Effects of Radial Losses of Particle and Energy on the Stability of detachment Front in a Divertor Plasma	54	P1-32	K. Ichimura	Analysis of end-loss-ion-flux for application studies of the plasma flow from the end-mirror exit of GAMMA 10.	70
P1-17	M. Yoshida	Hydrogen Isotopes Retention in the Tile Gaps of JT-60U	55	P1-33	T. Kono	Material dependence on plasma shielding induced by laser ablation	71
P1-18	A. Adachi	Tritium retention to the first wall of JT-60U	56	P1-34	T. Oishi	Fundamental study on hydrogen retention in carbon aerosol relevant to inertial fusion reactor	72

No.	Author	Title	Page
P1-35	T.E. Tuballa	Optical emission characteristics of an atmospheric Ar/N ₂ microwave plasma jet in relation to superhydrophilic surface treatment of stainless steel	73
P1-36	M. Saigusa	Proposal of New Type Diplexer for ECCD System	74
P1-37	Y. Yoshimura	ECCD Experiment Using an Upgraded ECH System on LHD	75
P1-38	H. Takahashi	Improvement of output power and electric efficiency for 77 GHz gyrotrons by externally controlled anode voltage in LHD	76
P1-39	H. Igami	Experimental results of electron Bernstein wave heating on the LHD and consideration for a helical type fusion device	77
P1-40	T. Seki	ICRF heating experiment using phasing antenna in LHD	78
P1-41	R. Seki	Study of ICH Heating Power Profile Evaluation Method in LHD Type Plasma	79
P1-42	T. Yokoyama	Improvement of ICRF antenna loading in the minimum-B configuration on GAMMA 10	80
P1-43	M. Sakaguchi	Quasi-Optical high purity HE ₁₁ -mode Exciter for Oversized Corrugated Waveguide Transmission	81
P1-44	H. Nakamura	Finite-Difference Time-Domain Simulation on Millimeter-Wave Propagation in Corrugate Waveguide	82
P1-45	S. Kamio	Study of magnetic reconnection heating in UTST measured by Doppler spectroscopy	83
P1-46	T. Mizuuchi	Effect of Gas Fueling Control on Plasma Performance in Heliotron J	84
P1-47	A. Murakami	Improvement in the fueling efficiency of supersonic gas puffing in LHD	85
P1-48	N. Tanaka	Production and Measurement of Negative Hydrogen Ions in a FET based RF Ion Source	86
P1-49	S. Ohshima	Study of Edge Fluctuation Characteristics using Multiple Langmuir Probes in Heliotron J	87
P1-50	S. Oldenburger	Configuration of flows in a cylindrical plasma device	88

No.	Author	Title	Page
P1-51	T. Kobayashi	Time Evolution of Power Spectrum Density during Spontaneous Transition in Cylindrical Magnetized Plasma	89
P1-52	S. Yamada	Evaluation of Electron Temperature Fluctuations Using a Conditional Technique on PANTA	90
P1-53	T.G. Watanabe	Magnetic Helicity Injection Experiments for Double-null Startup of the UTST spherical tokamak	91
P1-54	E. Xue	Modeling of Vacuum Field in Start-up in EAST	92
P1-55	T. Yamada	FDTD simulation analysis for improving the two dimensional electron density distribution measurement by using phase imaging method in GAMMA10	93
P1-56	S.G. Baek	Observation of spectral broadening of LH waves in Alcator C-Mod	94
P1-57	H. Tsuchiya	Identification of MHD Mode Structure using ECE measurement	95
P1-58	I. Hong	Fast, nonlocal, radially coherent changes of T _e during ELM crashes observed by 2D ECE imaging in KSTAR	96
P1-59	Y. Nagayama	Electron Density Fluctuation Measurement with 3-D Microwave Imaging Diagnostics in LHD	97
P1-60	D. Seo	The development of the Infrared TV system for KSTAR	98
P1-61	H. Iiduka	Cylindrical Surface Wave on Periodically Corrugated Metal Cylinder	99
P1-62	E. Wang	Vertical profiles of EUV spectral emissions from edge impurity ions observed at different toroidal angles in LHD	100
P1-63	C. Dong	Extension of wavelength range in absolute intensity calibration of space-resolved EUV spectrometer for LHD diagnostics	101
P1-64	H.A. Sakaue	EUV Spectroscopy of Highly Charged Tungsten Ions with Electron Beam Ion Traps	102
P1-65	X. Din	Collisional-Radiative Modeling of moderate ionized Tungsten Plasma	103

No.	Author	Title	Page	No.	Author	Title	Page
P1-66	A. Okamoto	Steady state recombining plasma in a radio-frequency plasma device for divertor-detachment study	104	P1-83	N. Mizuguchi	Modeling of Formation of Helical Structures in Reversed-Field Pinch	120
P1-67	M.C. Lacdan	Initial Studies of Microwave-Induced Atmospheric Plasma Jets Using Optical Emission Spectroscopy	105	P1-84	M. Sato	Study of resistivity effect on MHD stability beta limit in LHD using TASK3D-code	121
P1-68	J. Daseco	Optical emission spectroscopy studies on the effect of negatively biased copper shield to low pressure glow discharge plasmas	106	P1-85	M. Yokoyama	Development and experimental application of integrated transport code, TASK3D, for helical plasmas, ~equipment and extension of neoclassical transport module~	122
P1-70	T. Ozaki	Improved Charge Exchange Measurements in Large Helical Device	107	P1-86	S. Matsuoka	The radial electric field formation in high T_e plasmas with the electron internal transport barrier in LHD	123
P1-71	D. Raburn	Concept for Numerical Calculation of 3D MHD Equilibria with Flow and FLR Effects	108	P1-87	R. Kanno	Dependence of thermal diffusivity on plasma parameters in perturbed magnetic field in toroidal plasma	124
P1-72	Y. Suzuki	MHD Equilibrium Analysis of SDC Plasmas in LHD	109	P1-88	Y. Miyoshi	Research on burn control of core plasma with the transport code	125
P1-73	Y. Asahi	MHD equilibrium analysis with anisotropic pressure in LHD	110	P1-89	K. Nishioka	The neoclassical transport and viscosity in helical plasma consisting of multi-species ions including high-Z impurities	126
P1-74	A. Ito	Numerical analysis of axisymmetric toroidal equilibria with flow in single-fluid and two-fluid MHD models	111	P1-90	F.P. Iizima	Electron fluid perturbation and related electron transport in a field-reversed configuration	127
P1-75	K. Saito	MHD equilibrium including a static magnetic island for the reduced MHD equations in straight heliotron configuration	112	P1-91	T. Watanabe	Computation of Neutral Gas Flow Generation from a CT Neutralization Fuel-Injector	128
P1-76	R. Goto	Simulation of R-T and K-H hybrid instabilities in a 2D slab	113	P1-92	T. Takahashi	Toroidal spin-up caused by an anomalous loss of the electron angular momentum of a field-reversed configuration	129
P1-77	H. Miura	Development of a portable AMR module applicable to various fluid/particle simulations	114	P1-93	Y.D. Jung	Nonthermal effects on the resonant instability of the dust-acoustic wave in semi-bounded Lorentzian plasmas	130
P1-78	K. Ichiguchi	Numerical MHD Analysis of LHD Plasma in Magnetic Axis Swing Operation	115	P1-94	P.K. Chan	Numerical Analysis of Quantum-Mechanical Grad-B Drift II	131
P1-79	H. Usui	Dynamic Domain Decomposition for 3D PIC simulation with Adaptive Mesh Refinement	116	P1-95	E. Okubo	Quantum Mechanical Plasma Scattering II	132
P1-80	S. Nishimura	Nonlinear stability of externally driven magnetic islands	117	P1-96	K. Seto	Theoretical study of ultra-relativistic laser electron interaction with radiation reaction by quantum description	133
P1-81	R. Ueda	Effect of resistivity on mode structure of interchange instability in heliotron plasma	118				
P1-82	W. Takado	Development of an MHD Code Based on the CIP Method to Consider the Advection with Alfvén Velocity	119				

No.	Author	Title	Page
P1-97	N. Singh	Laser Guiding Through an Axially Nonuniform Magnetoplasma Channel in the Weakly Relativistic Limit	134
P1-98	T. Kusakabe	Charge-transfer cross sections of ground state He ⁺ ions in collisions with He atoms and simple molecules in the energy range below 4.0 keV	135
P1-99	A. Saitoh	Application of Collocation Meshless Method to Eigenvalue Problem	136
P1-100	S. Ikuno	Numerical Simulation of Electromagnetic Wave Propagation using Time Domain Meshless Method	137
P1-101	T. Itoh	Implicit Function with a Natural Behavior over the Entire Domain	138
P1-102	S. Nozaki	A new De-noising Method of Laser-produced Plasma Penumbra Images by Principal Component Analysis	139
P1-103	H. Wakabayashi	Studies on Plasma Production and Acceleration Using Rotating Electromagnetic Fields for Electrical Propulsion Engine	140
P1-104	S. Oikawa	Exact trajectory of a charged particle in several non-uniform magnetic fields	141
P1-105	T. Kamei	Application of the Binary Interaction Approximation to Plasma Oscillation	142
P1-106	M. Goto	Accuracy Assurance in Binary Interaction Approximation for <i>N</i> -body Problems	143
P1-107	Y. Takabatake	Localization method using Microsoft Kinect for indoor structures	144

Tuesday, 29th November, 2011-Poster Session 2

No.	Author	Title	Page
P2-1	H. Utoh	Modification of DOHEAT for optimization of coolant conditions in DEMO blanket	165
P2-2	A. Tsuchiya	Removal of deuterium in lithium titanate by gas exposure	166
P2-3	D. Kato	Ion-beam induced luminescence of Er ₂ O ₃	167
P2-4	M. Kondo	Electroplating of erbium on steel surface in ErCl ₃ doped LiCl-KCl	168
P2-5	Y. Hishinuma	Microstructure and Mechanical Properties on Oxide Insulator Coating before and after Thermal Cycling Test	169
P2-6	T. Nagasaka	Fabrication of the hydrogen recovery unit in the molten salt loop Oros ² -i-1:Operational Recovery Of Separated Hydrogen and Heat Inquiry-1	170
P2-7	T. Watanabe	Hydrogen Permeation in Stainless Steel Modified with Surface Nitride by Electrochemical Technique	171
P2-8	A. Watanabe	The evaluation of heat transfer for the sphere packed pipe by using a molten salt under high heat flux	172
P2-9	J. Guhit	Effects of Argon and Water Plasma Treatments on Philippine Coconut Fibers	173
P2-10	J. Salamania	Anti-bacterial property of oxygen-ion treated cotton gauze	174
P2-11	C. Romero	Sterilization of polyethylene terephthalate (PET) using low-pressure glow discharge H ₂ O ₂ and O ₂ plasmas	175
P2-12	K. Pabelina	Wettability and Antimicrobial Property of Plasma Treated Polyethylene Terephthalate (PET)	176
P2-13	T. Yagai	I _c analysis of Nb ₃ Sn strand cable-in-conduit conductor under the electromagnetic force by the structural mechanics	177
P2-14	S. Nakazawa	Analysis of contact lengths of strands with Cu blocks in CICC joints	178
P2-15	Y. Tsuchiya	Measurement Technique of Stress-Strain Properties for Cryogenic Materials by Neutron Diffraction	179

No.	Author	Title	Page	No.	Author	Title	Page
P2-16	K. Takahata	Long-Term Monitoring of Hydraulic Characteristics of LHD Poloidal Coils	180	P2-32	S. Ito	Discussion of structural design issues on a remountable high-temperature superconducting magnet	195
P2-17	A. Iwamoto	Discussion of heat transfer to liquid helium on surface orientation dependence	181	P2-33	K. Ogawa	Beam-ion losses due to magnetic field ripple under various plasma parameter ranges on the Large Helical Device	196
P2-18	S. Imagawa	Design Study of a 15 T Test Facility for High-current Superconductors	182	P2-34	T. Iwai	Evaluation of the non-axisymmetry of the central cell plasma by using a segmented limiter on GAMMA 10	197
P2-19	S. Satoh	Directory on Recent Information about Operational Experiences on Large Superconducting System and Cryogenic Facility at Fusion and Particle Accelerator Research Organizations	183	P2-35	Y. Suzuki	Magnetic Diagnostics for Magnetic Islands	198
P2-21	S. Hamaguchi	Thermal hydraulic analysis on supercritical helium in cable-in-conduit conductor of helical coils for FFHR-d1	184	P2-36	N. Mine	Time-dependence of Balmer series emission intensity during pulse plasma flow in divertor simulator TPD-SheetIV	199
P2-22	H. Chikaraishi	Conceptual design of dc power supplies for FFHR superconducting magnet	185	P2-37	B.J. Peterson	Calculation of geometry matrices for IRVBs for application to 3D tomography of radiative phenomena in LHD	200
P2-23	H. Tamura	Radial build design in the Helical DEMO reactor FFHR-d1	186	P2-38	S.N. Pandya	Design considerations for an Infrared Imaging Video Bolometer for observation of 3D radiation structures of detached LHD plasmas	201
P2-24	K. Natsume	Feasibility study on applying cryogenic oscillating heat pipes to fusion magnet	187	P2-39	S.P. Pandya	Design and Development of Infrared Imaging Video Bolometer for ADITYA Tokamak	202
P2-25	K. Osamura	Potential Use of HT-SC Wires in Fusion Reactor Application	188	P2-40	R. Sano	Calibration of IR imaging bolometer foil by laser irradiation	203
P2-26	Y. Yamada	HTS Current Lead Units Prepared by the TFA-MOD Processed YBCO Tapes	189	P2-41	X.D. Du	Development of an Array System of Ultra-Soft X-ray Detectors with Large Sensitive Area on the Large Helical Device	204
P2-27	A. Kamitani	Accurate and Stable Numerical Method for Analyzing Shielding Current Density in High-Temperature Superconducting Film Containing Cracks	190	P2-42	A. Sanpei	Tangential and vertical Soft-X ray imaging for three-dimensional structural studies in the RFP	205
P2-28	K. Matsuda	Microstructure of V3Ga Superconducting Wire Using Cu/V with High Ga Contents	191	P2-43	S. Ogasawara	Identification of spurious modes of high power 77 GHz gyrotron for collective Thomson scattering in LHD	206
P2-29	T. Kawabata	Microstructure and Superconductive Property of MgB2/Al Based Composite Materials	192	P2-44	R. Yasuhara	Coaxial multiple laser beam combiner for the LHD Thomson scattering system	207
P2-30	T. Ohinata	Fundamental evaluation of joint resistance in mechanical butt joint of a stacked GdBCO conductor	193	P2-45	J.H Lee	The Thomson Scattering Diagnostic System on the KSTAR tokamak	208
P2-31	Y. Terazaki	Measurement of joint resistance of large-current YBCO conductors	194	P2-46	S. Oh	The comparison of electron temperature and its density calculation methods in Thomson scattering diagnostics	209

No.	Author	Title	Page	No.	Author	Title	Page
P2-47	H. Tojo	Demonstration of an in-situ relative calibration method for a Thomson scattering diagnostics on TST-2	210	P2-62	T. Uda	Electromagnetic Fields Measurement and Safety Consideration in Magnetic Confinement Fusion Test Facilities	224
P2-48	J. Hiratsuka	Off-axis temperature anisotropy measurement by a double-pass Thomson scattering diagnostic system on TST-2	211	P2-63	A. Sagara	Analysis on Tritium Management in FLiBe Blanket for FFHR2	225
P2-49	L.G. Eliseev	The method to measure of poloidal plasma rotation by Heavy Ion Beam Probe	212	P2-64	S. Shigeharu	Hydrogen Isotopes Recovery from Liquid Li with Y Hot Trap	226
P2-50	N. Shi	Development of a multichannel far-infrared interferometer for the Experimental Advanced Superconducting Tokamak	213	P2-65	M. Okada	Analysis of simultaneous H and D permeation through lithium-lead	227
P2-51	M. Isobe	On Plasma Diagnostics Required for Heliotron-type DEMO Reactor	214	P2-66	N. Ezumi	Optical emission and mass spectra observations during hydrogen combustion processes in atmospheric pressure microwave plasma	228
P2-52	T. Akiyama	Conceptual design of electron density measurement system for DEMO-relevant helical plasmas	215	P2-67	M. Nunami	Nonlinear Gyrokinetic Simulation Study on ITG Turbulence and Zonal Flow in LHD Discharge	229
P2-53	T. Tokuzawa	Developments of Pulsed Terahertz Wave Diagnostics for Fusion Plasma	216	P2-68	A. Ishizawa	Effects of ion-temperature-gradient driven turbulence on magnetic islands	230
P2-55	M. Sato	Assessment of multi pulse laser damage threshold of metallic mirrors for laser diagnostics in fusion devices	217	P2-69	T.H. Watanabe	A two-scale model for zonal flow and turbulence in non-axisymmetric systems	231
P2-56	H. Ozeki	Confinement Analysis of Spherical Tokamak-Stellarator Hybrid Configurations with Simple Shaped Coils	218	P2-70	D. Kurita	Neoclassical Tearing Mode Analysis in Tokamak Plasmas	232
P2-57	M. Hasegawa	Experiments of tokamak discharge and simulation of magnetic field configuration in tokamak-helical hybrid device TOKASTAR-2	219	P2-71	A. Bierwage	Nonlinear Simulation of Energetic Particle Modes in High-Beta Tokamak Plasma	233
P2-58	H. Nakanishi	Improved Data Acquisition Methods for Uninterruptible Signal Monitoring and Ultra Fast Plasma Diagnostics in LHD	220	P2-72	H. Wang	Simulation Study of Energetic Particle Driven Geodesic Acoustic Mode in LHD Plasma	234
P2-59	M. Emoto	Study of Performance Improvement of Real-Time Mapping of Thomson Scattering Data to Flux Coordinates in LHD	221	P2-73	H. Matsuura	Effect of Nuclear Plus Interference Scattering on Fast-Ion Slowing-Down Distribution Functions in Thermonuclear Plasmas	235
P2-60	F. Xia	The Initial Design of Process Control System Based on EPICS for HL-2A & HL-2M	222	P2-75	H. Yamaguchi	Simulation study of NBI beam ion distributions and heat depositions in the time development plasma of LHD	236
P2-61	Y. Asakura	Operation planning of tritium recovery system based on investigation results of LHD exhaust system	223	P2-76	H. Hasegawa	Study of Plasma Blob Dynamics with Particle Simulation	237
				P2-77	K. Hada	Analysis of ECRH Preionization for Plasma Startup in JT-60SA	238
				P2-78	Y. Masaoka	Nonlinear collision effect on energetic particle confinement in LHD plasmas	239

No.	Author	Title	Page
P2-79	S. Ide	Plasma domains and development of operation scenarios in JT-60SA	240
P2-80	J. Mano	Current profile control for high bootstrap current operation in ITER	241
P2-81	R. Ishizaki	MHD simulation on pellet injection in torus plasmas	242
P2-82	K. Hosoi	Modeling of SMBI experiments based on Monte-Carlo simulation in GAMMA 10	243
P2-83	Y.S. Stadnik	Self-consistent Modeling of Plasma Production with Radio-frequency Heating	244
P2-84	O. Meneghini	Wavelet-based analysis of Lower Hybrid full-wave fields	245
P2-85	Y. Fujikawa	Reconstruction of a toroidal flow profile of a field-reversed configuration	246
P2-86	Y. Moriya	Dependence of the quasi linear heating term model on the ECCD in helical plasmas	247
P2-88	I. Murakami	Effect of Radiation Power Loss due to Ne Impurity Gas Puff for Ergodic Layer	248
P2-90	G.H. Neilson	A Pilot Plant as the Next Step toward an MFE Demo	249
P2-91	T. Oishi	Comparative study of cost models for tokamak DEMO fusion reactors	250
P2-92	T. Kondo	Economic evaluation of D-T, D- ³ He, and catalyzed D-D fusion reactors	251
P2-93	K. Ban	Economical and Life-Cycle Energy Assessment of Magnetic Fusion Power Reactors	252
P2-94	T. Goto	Design Window Analyses for the Helical DEMO Reactor FFHR-d1	253
P2-95	T. Tanaka	Neutronics Investigations for Helical DEMO Reactor FFHR-d1	254
P2-96	K. Tsumori	Conceptual Design of Heating Devices for Heliotron-type DEMO Reactor	255
P2-97	M. Tanaka	Fuel Particle Balance Study in FFHR DEMO Reactor	256

No.	Author	Title	Page
P2-98	S. Harada	Studies on Investigation of Behavior of Traveling Wave Direct Energy Converter Using a Simulator Installed on GAMMA 10 Tandem Mirror with One Side Plugging	257
P2-99	Y. Munakata	Studies on Application of Cusp-Type Particle Separation and Two-Stage Deceleration to Dense Plasma for Direct Energy Conversion	258
P2-100	S. Harjo	Internal Strain Measurement in Superconducting Composites by Neutron Diffraction	259
P2-101	T. Takayama	Numerical Investigation on Accuracy and Resolution of Contactless Methods for Measuring j_c in High-Temperature Superconducting Film: Inductive Method and Permanent Magnet Method	260
P2-102	T. Wajima	Adsorption Behavior of Lithium from Seawater using Manganes Oxide Adsorbent	261
P2-103	H. Ohtani	Application of Virtual Reality System to Fusion Science	262
P2-104	T. Umetani	Localization of Mobile Client using Wireless LAN and Natural Features of Camera-Image Sequences for Indoor Structure	263
P2-106	M. Mizuguchi	Behavior of core plasma potential and fluctuation in end-diverter simulation experiments on the tandem mirror GAMMA10	264
P2-107	H. Matsuura	Measurement of LHD divertor heat flux response of plasma detachment with the Hydride Directional Langmuire Probe	265