



# TABLE OF CONTENTS

<b>Iter Disruption Mitigation Requirements And Development Of Gas Cartridge Concept</b> .....	1
<i>So Maruyama, Sergei Putvinski, Masayoshi Sugihara, Gabor Kiss, Ray Marrs, Brian Macdonald, Paul Edwards</i>	
<b>Behavior Of Metallic Impurity In Divertor Configuration Of Large Helical Device</b> .....	5
<i>Chunfeng Dong, Shigeru Morita, Motoshi Goto, Erhui Wang, Masahiro Kobayashi</i>	
<b>Achievements On Engineering And Manufacturing Of ITER First Mirrors Mock-Ups</b> .....	11
<i>Maryline Joanny, Jean-Marcel Traverso, Sophie Salasca, Laurent Marot, Ernst Meyer, Christophe Thellier, Cedric Cammarata, Gerard Gallay, Jean-Jacques Ferme</i>	
<b>ITER Radiological And Environmental Monitoring Systems Conceptual Design</b> .....	17
<i>Lorenzo Perna, Michel Berruyer, Sabrina Molinaro</i>	
<b>Optical Transmission Of Thermal Measurements From High Voltage Devices In High Vacuum Conditions</b> .....	22
<i>Matteo Brombin, Mauro Dalla Palma, Marco Boldrin, Raffaele Ghirardelli, Federico Molon, Roberto Pasqualotto, Nicola Pomaro, Gianluigi Serianni</i>	
<b>Advances On The High Speed Ignitor Pellet Injector (IPI)</b> .....	27
<i>Antonio Frattolillo, Francesca Bombarda, Silvio Migliori, Salvatore Podda, Mario Capobianchi, Larry R. Baylor, Stephen K. Combs, Charles R. Foust, Steven J. Meitner, Dan T. Fehling, Jim M. McGill, Bruno Coppi, Guido Roveta</i>	
<b>A Comparative Study Of Low-Z Liner Materials In An Ablation Dominated Electrothermal Mass Accelerator For Fusion Fueling</b> .....	33
<i>A. Leigh Winfrey, John G Gilligan, Mohamed A. Bourham</i>	
<b>A Method Of Differential Cross-Sections For Obtaining The Energy Spectrum Of Fast Neutrons On Detecting Recoil Nuclei</b> .....	39
<i>Oleg G. Egorov, Vladimir V. Frunze</i>	
<b>New IQ Demodulator Development In Diagnostic Equipment For Fusion Energy Research</b> .....	44
<i>Chun C. Kung, Gerrit J. Kramer, James R. Wilson</i>	
<b>Simulation Of The Infrared Views Of The Upper Port VIS/IR Imaging System Of ITER</b> .....	48
<i>Marie-Helene Aumeunier, Jean-Marcel Traverso, Roger Reichle, Thierry Loarer, Eric Gauthier, Dominique Chabaud, Eric Humbert</i>	
<b>Structural Analysis Of An Optimally Designed Spherical Tokamak Centerpost</b> .....	54
<i>Arnold Lumsdaine, Martin Peng</i>	
<b>Building Block Support Structure For Helias Stellarator Reactors</b> .....	60
<i>Felix Schauer, Konstantin Egorov, Andrzej Dudek, Stefan Freundt, Victor Bykov</i>	
<b>Results From Laboratory Testing Of A New Four-Barrel Pellet Injector For The TJ-II Stellarator</b> .....	66
<i>Jeffrey H. Harris, Carlos Hidalgo, James M. McGill, David A. Rasmussen, Raul Unamuno, Stephen K. Combs, Charles R. Foust, Kieran J. McCarthy, Larry R. Baylor, John B. O. Caughman, Dan T Fehling, Raul Garcia, Manuel Chamorro</i>	
<b>The Development Of Argon Arc Brazing With Cu-Based Filler For ITER Thermal Anchor Attachment</b> .....	72
<i>Z. C. Sun, P. Y. Lee, C. J. Pan, B. L. Hou, S. L. Han, Y. Y. Pei, W. M. Long</i>	
<b>A Similarity Study On Absorption/Desorption Cycles Using Zrco-H<sub>2</sub> For ITER Hydrogen Getter Material System</b> .....	76
<i>Sei-Hun Yun, Yun Hee Oh, Seungyon Cho, Min Ho Chang, Hyun-Goo Kang, Min Kyu Lee, Ki Jung Jung, Hongsuk Chung, Dae Seo Koo, Kyu-Min Song, Manfred Glugla</i>	
<b>Concept Design Of Gas Injection System Manifold For Iter</b> .....	82
<i>Tao Jiang, Bo Li, Wei Li, Mingxu Wang, Yudong Pan, So Maruyama, Yu Yang</i>	
<b>Integrated Procedure For Halo Current Reconstruction In Iter</b> .....	86
<i>Simone Peruzzo, Raffaele Albanese, Paolo Bettini, Massimiliano Mattei, Guglielmo Rubinacci, Fabio Villone</i>	
<b>R&amp;D On In-Vessel Dust And Tritium Management In ITER</b> .....	91
<i>F. Le Guern, S. Ciattaglia, G. Counsell, J. Kim, M. Walsh, A. Denkevitz, N. Endstrasser, M. Kuznetsov, R. Neu, B. Reiter, V. Rohde, Z. Xu</i>	
<b>Structural Analysis Of A Prototype Fast Shutter For ITER Ccxrs Diagnostic</b> .....	96
<i>Anatoly Panin, Wolfgang Biel, Yury Krasikov, Olaf Neubauer, David Bardawil</i>	
<b>Precision Signal Conditioning And Front-End Electronics For Temperature And Field Measurements In SST-1 TF Magnets</b> .....	102
<i>Kalpesh Doshi, Yohan Khristi, Ashoo Sharma, Pankaj Varmora, Sunil Kedia, Upendra Prasad, Dipak Patel, Subrata Pradhan</i>	

<b>Twin-Screw Extruder And Pellet Accelerator Integration Developments For Iter .....</b>	<b>108</b>
<i>Steven J. Meitner, Larry Baylor, Stephen Combs, Dan Fehling, Charles Foust, James McGill, David Rasmussen, So Maruyama</i>	
<b>Investigation Of The Radioactivity Inside The Kstar Vacuum Vessel After Shutdown By Using Gamma-Ray Spectrometry .....</b>	<b>112</b>
<i>Y. S Lee, A. C England, M. S. Cheon, H. S Kim, W. C Kim, H. C Kim, H. J. Kim</i>	
<b>New Developments For Real Time Plasma Control System On Hl-2a .....</b>	<b>117</b>
<i>Fan Xia, Li Zhao, Liaoyuan Chen</i>	
<b>Progress On The Integration Of Iter Diagnostics Equatorial Port Plugs In Europe .....</b>	<b>122</b>
<i>Sophie Salasca, Bruno Cantone, Miguel Dapena, Maryline Joanny, Marie-Helene Aumenier, Jean-Marcel Traverso, Basilio Esposito, Fabio Moro, Daniele Marocco, Rosaria Villari, Giorgio Brolatti, Esther Rincon, Daniel Nagy, Jozsef Nemeth, Paulo Varela, Kunal Patel, Yuri Krivchenkov</i>	
<b>Temporal And Spatial Pfc Temperature Profiles In Kstar 2010 Campaign.....</b>	<b>128</b>
<i>Eun Nam Bang, Kyung Min Kim, Hong Tack Kim, Suk Ho Hong, Hak Kun Kim, Kun Su Lee, Hyung Lul Yang</i>	
<b>Laser Welding Of Plasma Face Units For Iter Divertor Dome Manufacturing .....</b>	<b>132</b>
<i>Sergey N. Mazaev, Tamara M. Gurieva, Alexander G. Ignatov, Alexander V. Lapin, Alexey N. Makhankov, Victor A. Mirgorodsky, Olga O. Nomokonova, Ivan I. Vlasov</i>	
<b>The Influence Of Injector Design On Neutral Beam Optimisation For Demo .....</b>	<b>137</b>
<i>Elizabeth Surrey, Andrew Benn, Michael Porton</i>	
<b>General And Crevice Corrosion Study Of The Materials For Iter Vacuum Vessel In-Wall Shield .....</b>	<b>143</b>
<i>Kaushal S. Joshi, Haresh A. Pathak, R. K. Dayal, V. K. Bafna, Ioki Kimihiro, Vladimir Barabash</i>	
<b>Newly Developed Innovative Manufacturing Technologies For He-Cooled Demo Divertor .....</b>	<b>149</b>
<i>Prachai Norajitra, Steffen Antusch, Widodo Basuki, Luigi Spatafora, Volker Toth</i>	
<b>Cryogenic Viscous Compressor Development And Modeling For The Iter Vacuum System .....</b>	<b>152</b>
<i>Larry R. Baylor, Charlotte N. Barbier, Steve K. Combs, Robert C. Duckworth, Tim D. Edgemon, Steve J. Meitner, Dave A. Rasmussen, Roberto Kersevan, Matthias Dremel, Robert J. H. Pearce</i>	
<b>Digital Coil Protection System (Dcps) Algorithms For The Nstx Centerstack Upgrade .....</b>	<b>156</b>
<i>Robert D. Woolley, Peter H. Titus, Charles L. Neumeyer, Ronald E. Hatcher</i>	
<b>Absolute Calibration Of The Nstx Neutron Monitor System.....</b>	<b>162</b>
<i>A. L. Roquemore, D. S. Darrow, S. S. Medley</i>	
<b>Design And Indigenous Development Of Fabrication Of Cryopanel For Cryopump Applications.....</b>	<b>166</b>
<i>Ranjana Gangradey, Ravi Prakash, Swarup Udgata</i>	
<b>Extending The Dynamic Range Of The Ad8361 Rms Detector Ic* .....</b>	<b>170</b>
<i>Nevell L. Greenough</i>	
<b>Vacuum Compatibility Of Welded Joints For The Nstx Upgrade.....</b>	<b>174</b>
<i>Martin Denault, Dana Arose</i>	
<b>Ensuring High Availability And Recoverability Of Acquired Data .....</b>	<b>177</b>
<i>Cassandra Pugh</i>	
<b>Differences Into The Environmental Impact Of Patterns Of Tritium Concentrations In Air Into The Western Mediterranean Basin And Continental Europe .....</b>	<b>182</b>
<i>Paloma Castro, Marta Velarde, Jose Ardao, Jose M Perlado, Luis A. Sedano</i>	
<b>An Overview Of Pilot Plant Designs Based On The Tokamak, Spherical Tokamak And Stellarator.....</b>	<b>188</b>
<i>Thomas G. Brown, Leslie Bromberg, Alan Costley, Robert J. Goldston, Laila El-Guebaly, Richard J. Hawryluk, Charles E. Kessel, George H. Neilson, Siegfried Malang, Jon E. Menard, Stewart Prager, Lester M. Waganer</i>	
<b>Options For Shielding Tokamak Cooling Water Electrical Components Against High Magnetic Fields.....</b>	<b>194</b>
<i>Kofi Korsah, Michael Smith, Seokho Kim, Charles Neumeyer</i>	
<b>Challenges In Design Integration For Iter.....</b>	<b>199</b>
<i>Stefano Chiochio, Ken Mitsunori Kondoh, Michel Brun</i>	
<b>Design Of The Iter First Wall And Blanket.....</b>	<b>207</b>
<i>Rene Raffray, Mario Merola</i>	
<b>Key Features In The Operation Of Kstar.....</b>	<b>213</b>
<i>Jong-Gu Kwak, Y. K. Oh, K. P. Kim, S. W. Kim, S. H. Hong, W. Chu, H. J. Lee, Y. O. Kim, J. Kim, S. L. Park</i>	
<b>Operation Of Hl-2a Tokamak .....</b>	<b>221</b>
<i>X. R. Duan, Y. Huang, D. Q. Liu, W. M. Xuan, L. Y. Chen, J. Rao, X. M. Song, Z. Cao, B. Li, J. Y. Cao, G. J. Lei</i>	
<b>Advanced Concepts For Fusion Power Supplies.....</b>	<b>229</b>
<i>Jin Wang, Xiu Yao, Yi Huang</i>	
<b>Iter Coil Power Supply And Distribution System .....</b>	<b>235</b>
<i>Jun Tao, Ivone Benfatto, Jeremy Goff, Ashok Mankani, Francesco Milani, Inho Song, Hao Tan, Jeff Thomsen</i>	
<b>Korean R&amp;D On The 6-Pulse Converter Unit For Iter Ac/Dc Converters.....</b>	<b>243</b>
<i>Jong-Seok Oh, Jungwan Cho, Jae-Hak Suh, Hyoyol Liu, Seungyun Lee, Hyungjin Park, Woosik Jung, Seongman Jo, Hao Tan, Jun Tao, Peng Fu</i>	
<b>High Temperature Plasma Facing Components Designs for Biomass Hybrid Reactor: Gnome .....</b>	<b>249</b>
<i>Kenzo Ibano, Yasushi Yamamoto, Satoshi Konishi</i>	

<b>Numerical Analysis Of Buoyant-Convective Liquid Metal Flow In Channels Exposed To Strong Magnetic Fields</b> .....	252
<i>Chiara Mistrangelo, Leo Buehler</i>	
<b>Lessons Learned From Designing And Manufacturing Of The Coil Support Structure Of W7-X</b> .....	258
<i>Didier Chauvin, Torsten Koppe, Antonio Cardella, Bernd Missal, Dirk Pilopp, Giovanni Di Bartolo, Rocio Camin, Ivan Gonzales, Luca Giordano, Stefano Langone</i>	
<b>Dynamic Study Of A Helium Refrigerator For Tokamak</b> .....	264
<i>Lilong Qiu, Ming Zhuang, Liangbing Hu, Jin Mao, Xihuan Hao</i>	
<b>The Design Of Integrated Information Management System For National Fusion Reactor Based On RDF</b> .....	269
<i>Sung-Ha Hwang, J. S. Yoon</i>	
<b>Space Reservations For The Peripheral Components Of W7-X</b> .....	275
<i>Sebastien Renard, Christophe Baylard, Dirk Hartmann</i>	
<b>Magnetic Diffusion Model For Fast Toroidall Fields Coils</b> .....	281
<i>Valter Cocilovo</i>	
<b>Analysis And Experiment Of The Hypervapotron Mock-Up For The East Upgrade</b> .....	287
<i>Zhong Wei Wang, Yun Tao Song, Sheng Hong Huang</i>	
<b>Purpose And Design Of Trim Coils For The Wendelstein 7-X Stellarator Experiment</b> .....	291
<i>Konrad Riße, Kisslinger Johann, Freundt Stefan, Matthias Koeppen, Martin Klingner</i>	
<b>Activation And Shielding Analysis For HCSB TBM</b> .....	295
<i>Zaixin Li, G. S. Zhang, F. C. Zhao</i>	
<b>ITER STR Feeder Performance Analysis Under Working And Accidental Scenarios</b> .....	298
<i>Kun Lu, Yun Tao Song, Zhong Wei Wang, Yong Cheng</i>	
<b>Low Cycle Fatigue Properties At Elevated Temperature On TIG Welded RAFM Steel</b> .....	302
<i>Duck Young Ku, Yi-Hyun Park, Seungjin Oh, Mu-Young Ahn, In-Keun Yu, Seungyon Cho, Won-Doo Choi</i>	
<b>Overview Of Main-Mechanical-Components And Critical Manufacturing Aspects Fo The Wendelstein 7-X Cryostat</b> .....	307
<i>Torsten Koppe, Antonio Cardella, Bernd Missal, Bernd Hein, Reinhard Krause, Hartmut Jenzsch, Jens Reich, Franz Leher, Andreas Binni, Juergen Segl, Rocio Camin, Luca Giordano, Stefano Langone, Jens Ridzewski, Giorgio Corniani</i>	
<b>Assessment Of The Operational Dose Rate In Polymer Insulators In The Test Cell Of The IFMIF Neutron Source</b> .....	312
<i>Axel Klix, Frederik Arbeiter, Ulrich Fischer, Volker Heinzl, Arkady Serikov</i>	
<b>Thermalhydraulic Optimization Of Hypervapotron Geometries For First Wall Applications</b> .....	316
<i>Dennis L. Youchison, Michael A. Ulrickson, Jim H. Bullock</i>	
<b>R &amp; D Of Polyimide Insulated JET ELM Control Coils For Operation At 350 C</b> .....	322
<i>Irving J. Zatz, George H. Neilson, Stephan Z. Jurczynski, Michael Mardenfeld, Christopher G. Lowry</i>	
<b>Mhd Analysis And Preparation Of An Experimental For Developing The Korean Test Blanket Module</b> .....	328
<i>Dong Won Lee, Seol Ha Kim, Moohwan Kim, Jae Sung Yoon, Seungyon Cho</i>	
<b>Influence Of Plasma Operation On The PF Circulator Of The KSTAR HRS System During 2010 Campaign</b> .....	332
<i>H. J. Lee, Y. M. Park, K. M. Moon, D. S. Park, J. J. Joo, H. L. Yang, M. Kwon</i>	
<b>Stress Multipliers For The Nstx Upgrade Digital Coil Protection System</b> .....	337
<i>Peter H. Titus, Robert D. Woolley, Ronald Hatcher</i>	
<b>Preliminary Test And Evaluation Of Non-Destructive Examination For ITER First Wall Development In Korea</b> .....	343
<i>Suk-Kwon Kim, Eo Hwak Lee, Jae-Sung Yoon, Hyun-Kyu Jung, Byoung-Yoon Kim, Dong Won Lee</i>	
<b>Calculation Of Stray Magnetic Field Effects On The Operation Of The ITER Electron Cyclotron System</b> .....	347
<i>Fengping Li, Ioannis Gr Pagonakis, Stefano Alberti, Jean-Philippe Hogge</i>	
<b>Production Of Tc-99m From Molybdenum Absent Uranium</b> .....	352
<i>Kelsey M. Pagdon, Charles Gentile, Adam Cohen, George Ascione, Gene Baker</i>	
<b>Simulation Of Thermal-Hydraulic Transients In The KSTAR PF1 Coil Using The 4C Code</b> .....	356
<i>Roberto Zanino, Yong Chu, Akshat Kholia, H. J. Lee</i>	
<b>A Small Rectangular Edge Localized Mode Control Coil Design Able To Withstand A 400°C Environment</b> .....	362
<i>Michael E. Viola, Fred Dahlgren, Phil Heitzenroeder, Thomas Meighan, Peter Titus, Arnie Kellman, Paul Anderson</i>	
<b>Lithium Operations On The Lithium Tokamak Experiment</b> .....	366
<i>Thomas A. Kozub, Richard Majeski, Robert Kaita, Erik Granstedt, Craig Jacobson, Daniel Lundberg, John Timberlake</i>	

<b>Aries Systems Code Development, Vizualization And Application .....</b>	<b>369</b>
<i>Lane C. Carlson, Mark S. Tillack, Farrokh Najmabadi, Charles Kessel</i>	
<b>Generation Of Neutron Beam With Cylindrical Discharge Type Fusion Device .....</b>	<b>375</b>
<i>Takahiro Maegawa, Kazuyuki Noborio, Yasushi Yamamoto, Satoshi Konishi</i>	
<b>ITER CS Intermodule Support Structure .....</b>	<b>379</b>
<i>R. Leonard Myatt, Kevin D. Freudenberg</i>	
<b>Thermal-Hydraulic Simulation Of 80 Ka Safety Discharge In The Iter Toroidal Field Model Coil (TFMC) Using The 4C Code.....</b>	<b>385</b>
<i>Laura Savoldi Richard, Roberto Bonifetto, Reinhard Heller, Roberto Zanino</i>	
<b>Iter Central Solenoid Pre-Compression Structre Analysis .....</b>	<b>390</b>
<i>Kevin D. Freudenberg, Robert L. Myatt</i>	
<b>Laboratory Investigation Of Vapor Shielding For Lithium-Coated Molybdenum In Devex.....</b>	<b>396</b>
<i>Soonwook Jung, Daniel Andruczyk, David N. Ruzic</i>	
<b>A Proposed Scraper Element To Protect The End Of The W7x Divertor Target Elements .....</b>	<b>401</b>
<i>Alan T. Peacock, Johannes Kibflinger, Jean Boscary, Frederick Hurd, Jorg Tretter, Ralf Konig, Michael Smirnow, Maciej Krychowiak, Andreas Werner</i>	
<b>Ensuring Compliance And Consistency In An R&amp;D Environment: The PPPL Office Of Project Management .....</b>	<b>406</b>
<i>Tiana Dodson, Timothy Stevenson, Thomas Egebo, Ronald Strykowski, Stephen Langish, Michael Williams</i>	
<b>Demountable Joint Of 5 Ka Class Hts Conductor .....</b>	<b>411</b>
<i>Satoshi Ito, Leslie Bromberg, Makoto Takayasu, Joseph Minervini, Hidetoshi Hashizume</i>	
<b>The Materials Analysis Particle Probe (Mapp) Diagnostic System In Nstx.....</b>	<b>417</b>
<i>Bryan Heim, Chase N. Taylor, Jean P. Allain, Sami Ortoleva, Eric Yang, Miguel Gonzalez, Sean Gonderman, Charles H. Skinner, William Blanchard</i>	
<b>Development Of A Magnetized Coaxial Plasma Gun For Simulation Experiment Of Type-I Elm Heat Loads .....</b>	<b>421</b>
<i>Ikko Sakuma, Kyohei Shoda, Daiki Iwamoto, Yusuke Kikuchi, Naoyuki Fukumoto, Masayoshi Nagata</i>	
<b>Performance Tests Of An Experimental Loop For Liquid Breeder In Korea.....</b>	<b>424</b>
<i>Jae Sung Yoon, Suk Kwon Kim, Seungyon Cho, Dong Won Lee</i>	
<b>Design Of A Flexible Liquid Metal Loop For Investigation Of MHD Flows Related To Fusion Blanket Applications .....</b>	<b>429</b>
<i>Leo Buehler, Chiara Mistrangelo, Christina Koehly</i>	
<b>Activity Of National Institute For Fusion Science Toward Realization Of Helical Fusion Reactor .....</b>	<b>434</b>
<i>Akio Komori, O. Kaneko, S. Sakakibara, R. Horiuchi, A. Sagara, H. Yamada, Y. Takeiri</i>	
<b>Fusion For Neutrons : A Realisable Fusion Neutron Source .....</b>	<b>442</b>
<i>Alan Sykes, Mikhail P Gryaznevich, Garry Voss, David Kingham, Boris Kuteev</i>	
<b>The Analysis Of The Electromagnetic Loads On Selected Iter Blanket Shield Modules Due To Induced Eddy Currents And Halo Currents .....</b>	<b>450</b>
<i>Joseph D. Kotulski, Rebecca S. Coats, Michael A. Ulrickson</i>	
<b>Safety Classifications For The Fusion DEMO Plant Of Korea.....</b>	<b>455</b>
<i>Hyuck Jong Kim, Gyun Young Heo, Jong Kyung Kim, Young Seok Lee, Myun Kwon, Ken Sowder</i>	
<b>The ITER Earthing Topology: Mesh-Common Bonding Network .....</b>	<b>460</b>
<i>David Beltran, Keith Armstrong, Alain Charoy, Joel Hourtoule</i>	
<b>Challenges Of Video Monitoring For Phenomenological Diagnostics In Present And Future Tokamaks .....</b>	<b>466</b>
<i>Vincent Martin, Victor Moncada, Jean-Marcel Travere</i>	
<b>Fast Ignition Integrated Experiments On GEKKO-LFEX Laser Facility.....</b>	<b>472</b>
<i>Shinsuke Fujioka, Hiroshi Azechi, Hiroyuki Shiraga, Tomoyuki Johzaki, Atsushi Sunahara</i>	
<b>Generation Of Neutrons In The Nanosecond Discharge In Deuterium .....</b>	<b>476</b>
<i>Victor F. Tarasenko, Gennadii N. Dudkin, Mikhail I. Lomaev, Boris A. Nechaev, Vladimir N. Padalko, Dmitrii A. Sorokin, Alexand P. Yalovets</i>	
<b>Alignment Principles For ITER In-Vessel Diagnostic Mirrors.....</b>	<b>482</b>
<i>Andreas Krimmer, Hans-Josef Allelein, Yury Krasikov, Olaf Neubauer, Anatoly Panin</i>	
<b>The Simulation And Numerical Analysis For ITER First PF(Poloidal Field Coil) Feeder .....</b>	<b>488</b>
<i>Sumei Liu, Yuntao Song, Kun Lu, Zhongwei Wang</i>	
<b>Improved Geometrical Design Of The US ITER DCLL Test Blanket Module.....</b>	<b>494</b>
<i>Edward Marriott, Mohamad Dagher, Mohamed Sawan, Clement Wong</i>	
<b>Design And Analysis Of A High Temperature And Pressure He Supplying System .....</b>	<b>500</b>
<i>Eo Hwak Lee, Dong Won Lee, Suk Kwon Kim, Jae Sung Yoon</i>	
<b>Advances In The FAST Program .....</b>	<b>505</b>
<i>Antonio Cucchiaro, Giorgio Brolatti, Valter Cocilovo, Paolo Frosi, Fabio Crescenzi, Flavio Crisanti, Giorgio Maddaluno, Vincenzo Pericoli-Ridolfini, Aldo Pizzuto, Camillo Rita, Giuseppe Ramogida, Selanna Roccella, Paolo Rossi</i>	

<b>Two RF Driver Based Negative Ion Source For Fusion R&amp;D .....</b>	<b>511</b>
<i>Mainak Bandyopadhyay, M. J. Singh, G. Bansal, A. Gahlaut, K. Pandya, K. G. Parmar, J. Soni, Irfan Ahmed, G. Roopesh, C. Rotti, S. Shah, A. Phukan, R. K. Yadav, A. K. Chakraborty</i>	
<b>Design Of An Experimental Facility To Study Stability Of Liquid Lithium Films.....</b>	<b>516</b>
<i>Martin Nieto-Perez, Gonzalo Ramos</i>	
<b>Numerical Calculation Of Reactions On Electrode Surface And In Volume Of A Discharge Type Fusion Neutron Source - By Developping A One Dimensional Particle-In-Cell Monte Carlo Code .....</b>	<b>520</b>
<i>Kazuyuki Noborio, Takahiro Maegawa, Yasushi Yamamoto, Satoshi Konishi</i>	
<b>Development Of Fast Ferrite Tuner For Lower Hybrid Current Drive .....</b>	<b>525</b>
<i>Peter Koert, D. Terry, E. Fitzgerald, P. Macgibbon, G. Wallace</i>	
<b>Optimized Bends And Mode Filters For The Main Transmission Lines Of The ITER LHCD System .....</b>	<b>529</b>
<i>Francesco Mirizzi, Silvio Ceccuzzi</i>	
<b>Iter Like Lower Hybrid Passive Active Multi-Junction Antenna Manufacturing And Tests .....</b>	<b>534</b>
<i>Dominique Guilhem, Bernard Bertrand, Manfred Lipa, Joelle Achard, Arnaud Argouarch, Arthur Armitano, Jorge Belo, Zygmunt Bej, Gilles Berger-By, Francis Bouquey, Cyril Brun, Michel Chantant, Elodie Corbel, Etienne Delmas, Lena Delpuch, Louis Doceul, Annika Ekedahl, Frederic Faisse, Pascal Fejoz, Marc Goniche, Jean-Claude Hatchressian, Julien Hillairet, Michael Houry, Pierre Joubert, Renaud Lambert, Gilles Lombard, Sylvain Madeleine, Roland Magne, Laurent Marfisi, Andre Martinez, Marc Missirlan, Patrick Mollard, Serge Poli, Christophe Portafaix, Melanie Preynas, Marc Prou, Dominique Raulin, Alain Saille, Franck Samaille, Bernard Soler, Didier Thouvenin, Jean-Marc Verger, Daniel Volpe, Karl Vulliez, Bertrand Zago</i>	
<b>Structural Design And Analysis Of An ECRH Launcher For JET .....</b>	<b>538</b>
<i>Peter Spah, Alessandro Vaccaro, Gaetano Aiello, Gerardo Giruzzi, Morten Lennholm, Carlo Sozzi, Dirk Strauss</i>	
<b>High Power Test Of CVD Diamond Window For ECRH System In SST-1 .....</b>	<b>544</b>
<i>Braj Kishore Shukla, Rajan Babu, Mahesh Kushwah, K. Sathyanarayana, Jatin K. Patel, Harshida Patel, S. Laxmikant Rao, Mikhail Shmelev, Yuri Belov, Vladimir Belousov</i>	
<b>42GHz 0.5MW ECRH System For Tokamaks SST-1 And Aditya .....</b>	<b>548</b>
<i>Braj Kishore Shukla, Rajiv Goswami, Prabal K Chattopadhyay, R. Srinivasan, Rajan Babu, Jatin K. Patel, Harshida Patel, Pragnesh Dhorajia</i>	
<b>Development &amp; Integration Of The ICH &amp; CD System Configuration In The ITER Tokamak Complex And Auxiliary Buildings .....</b>	<b>552</b>
<i>Dharmendra Rathi, Bertrand Beaumont, Bharatkumar Arambhadiya, Berry Beckett, Baptiste Bruyere, Thibault Gassmann, Fabienne Kazarian, Philippe Lamalle, Aparajita Mukherjee, Rajesh Trivedi, Rajnish Kumar, Raghuraj Singh, Nariender Pal Singh, Ujjwal Baruah, Rick Goulding, David Rasmussen, Rodger Moon, David Swain, Gilbert Agarici, Mark Mills, Roberta Sartori, Mark Shannon, Damian Lockley, Mark Nightingale</i>	
<b>Overview Of DIII-D Off-Axis Neutral Beam Project .....</b>	<b>558</b>
<i>Christopher J. Murphy, J. T. Scoville, P. M. Anderson, R. M. Hong, D. H. Kellman, M. J. Hansink, P. S. Mauzey, H. H. Yip, C. J. Pawley, H. K. Chiu, K. L. Holtrop, M. Abraham, S. Noraky, J. Rausch</i>	
<b>A Real-Time Tracking For Optimal Wave Injection In Overdense Plasma Heating Experiments At 140 GHz In FTU .....</b>	<b>564</b>
<i>William Bin, Edoardo Alessi, Alessandro Bruschi, Gabriele D'Antona, Mohsen Davoudi, Cristian Galperti, Gustavo Granucci, Alessandro Moro</i>	
<b>Detail Design Of The Electron Dump For The Spider Beam Source .....</b>	<b>570</b>
<i>Piero Agostinetti, Giuseppe Chitarin, Diego Marcuzzi, Mauro Pavei, Andrea Rizzolo, Gianluigi Serianni, Piergiorgio Sonato, Lauro Trevisan</i>	
<b>Millimeter Wave System Upgrades On TCV: Additional X3 Power And Fast ECE Polarizers .....</b>	<b>576</b>
<i>Miguel Silva, Stefano Alberti, Federico Felici, Timothy P. Goodman, Jean-Philippe Hogge, Ioannis Pagonakis, Laurie Porte, Trach-Minh Tran, Minh Quang Tran</i>	
<b> Limiter-Coil Current Controller For Flux-Coil Generated FRC .....</b>	<b>581</b>
<i>Mikhail Slepchenkov, Frank Wessel, Norman Rostoker, Nathan Bolte, Tomas Roche, Mark Morehouse, Vasyl Kiyashko</i>	
<b>Measurement Of RF Transmission Mode Conversion Due To Waveguide Thermal Deromation Using 170ghz Gyrotron .....</b>	<b>586</b>
<i>Yasuhisa Oda, Ken Kajiwara, Koji Takahashi, Keishi Sakamoto</i>	
<b>Design Of An ECH System For A Small Modular Stellarator .....</b>	<b>590</b>
<i>Humberto J. Trimino</i>	
<b>Development Of High Performance Passively Cooled Mirrors For ECH Launchers.....</b>	<b>596</b>
<i>Robert A. Ellis, Joel C. Hosea, Howard Grunloh, John Lohr</i>	
<b>Design And Modification Of EAST New-Type ICRF Antenna .....</b>	<b>600</b>
<i>Yuntao Song, C. H. Wang, Q. Yang, Y. P. Zhao, Y. Chen, X. Zhang, C. Li, X. Ji, X. Mao</i>	
<b>Design, Development, Testing And Operation Of Regulated High Voltage Power Supplies (RHVPS) Utilized By NBI And RF Heating Systems For SST1.....</b>	<b>605</b>
<i>P. J. Patel, C. B. Sumod, D. P. Thakkar, L. N. Gupta, V. B. Patel, L. K. Bansal, K. Qureshi, V. Vadher, U. K. Baruah</i>	

<b>The Control System Of The 100kv HVPS For NBI .....</b>	<b>610</b>
<i>Sheng Min Pan, Peng Fu, Lei Yang</i>	
<b>Studies On The ITER NBI Residual Ion Dump Power Supply System.....</b>	<b>615</b>
<i>Marco Barp, Elena Gaio, Vanni Toigo</i>	
<b>NSTX Power Supply Configuration &amp; Control .....</b>	<b>621</b>
<i>Ninaad Desai, Ronald Hatcher, Charlie Neumeyer</i>	
<b>Conceptual Disign Of The Kstar Motor Generator .....</b>	<b>625</b>
<i>Chang Hwan Kim, Jong Dae Kong, Dae Young Eom, Nam Yong Joung, Woo Jin Lee, Chul Woo Han, Sel Ki Lee, Frank J. Parker, Dave Hopkinson, Graham D. L. E. Flem, Yang Soo Kim, Myeun Kwon</i>	
<b>Korean R&amp;D On The Converter Controller For ITER AC/DC Converters .....</b>	<b>630</b>
<i>Jae-Hak Suh, Jong-Seok Oh, Jungwan Choi, Eui-Ho Song, Gi-Sun Lee, Ki-Su Eom, Jeremy Goff, Jun Tao, Peng Fu</i>	
<b>Development Of In-Vessel Vertical Coil (IVC) Power Supply.....</b>	<b>635</b>
<i>Jong Kook Jin, Jae Hoon Choi, Dong Keun Lee, Sang Hee Han, Yang Su Kim, Myeun Kwon, Hyun Sik Ahn, Gye Yong Jang, Min Seong Yun, Dae Kyung Seong, Hyun Seok Shin</i>	
<b>Analysis Of Variable Harmonic Suppression And Reactive Power Compensation Of 125MVA Motor Generator .....</b>	<b>639</b>
<i>Yingqiao Wang, Lieying Yao, Jianfei Peng</i>	
<b>A Fully Digital Controller Of HV Power Supply For ECRH System On HL-2A.....</b>	<b>642</b>
<i>L. Y. Yao, Y. Q. Wang</i>	
<b>The ITER Reactive Power Compensation And Harmonic Filtering (RPC &amp; HF) System: Stability &amp; Performance.....</b>	<b>645</b>
<i>Ashok D. Mankani, Ivone Benfatto, Jun Tao, Jeremy Goff, Joel Hourtoule, Jose Gascon, D. Cardoso-Rodrigues, B. Gadeau</i>	
<b>IEC 61850 Based Control System For Power Distribution At ITER .....</b>	<b>651</b>
<i>Supriya Nair, Joel Hourtoule, Jose Gascon, Hitesh K. Gulati, Rafael De La Calle, Cyril Lescure, Manish Singh</i>	
<b>Control Strategy For The Acceleration Voltage Of The ITER Neutral Beam Injector.....</b>	<b>656</b>
<i>Alberto Ferro, Loris Zanotto, Vanni Toigo</i>	
<b>Programmable Power Supply For MST'S Poloidal Field.....</b>	<b>661</b>
<i>D. J. Holly, J. R. Adney, K. J. Mccollam, J. C. Morin, M. A. Thomas</i>	
<b>Application Of ITER CODAC Core System For NSTX SPA-2 Project.....</b>	<b>665</b>
<i>Abraham Massry, P. Sichta, J. Dong</i>	
<b>Overvoltage Protection Of The Ion Source And Extraction Power Supplies In The SPIDER Experiment.....</b>	<b>669</b>
<i>Andrea Zamengo, Alberto Pesce, Luca Sita, Giuseppe Taddia, Marco Bigi</i>	
<b>Power System Changes For NSTX Upgrade .....</b>	<b>675</b>
<i>Subrahmanya Ramakrishnan, Charles Neumeyer, Robert Mozulay, John Lawson, Ronald Hatcher, Weiguo Que, Xin Zhao</i>	
<b>Exploration Of Operational Scenarios Of The Spider Accelerator.....</b>	<b>680</b>
<i>Pierluigi Veltri, P. Agostinetti, G. Serianni, V. Antoni, M. Cavenago</i>	
<b>Coupled Multiphysics Analysis Of The TF Coil Structure In The NSTX Spherical Tokamak Upgrade.....</b>	<b>686</b>
<i>Ali Zolfaghari, Thomas Willard, Mark Smith</i>	
<b>Nuclear Analysis In Support Of Iter Blanket Modules Design .....</b>	<b>691</b>
<i>Mohamed E. Sawan</i>	
<b>SST-1 Status And Plans.....</b>	<b>697</b>
<i>Subrata Pradhan, A. N. Sharma, V. L. Tanna, Ziauddin Khan, U. Prasad, D. C. Raval, Firoz Khan</i>	
<b>MAST: Results And Upgrade Activities .....</b>	<b>704</b>
<i>A. W. Morris</i>	
<b>NSTX Research Highlights And NSTX Upgrade Progress .....</b>	<b>712</b>
<i>Jon Menard, John Canik, Stefan Gerhardt, Stan Kaye, Charles Kessel, Egemen Kolemen, Rajesh Maingi, Charles Neumeyer, Masayuki Ono, Roger Raman, Steven Sabbagh, Peter Titus, Vlad Soukhanovskii</i>	
<b>Overview Of ITER Magnet System And European Contribution.....</b>	<b>720</b>
<i>Carlo Sborchia, Alessandro Bonito Oliva, Thierry Boutboul, Marcello Losasso, Hannu Rajainmaki, Pierluigi Valente</i>	
<b>ITER In-Vessel Coil Design And R&amp;D .....</b>	<b>728</b>
<i>Michael Kalish, P. Heitzenroeder, A. Brooks, L. Bryant, J. Chrzanowski, E. Daly, R. Feder, J. Feng, M. Messineo, M. Gomez, C. Hause, T. Bohm, I. Griffiths, A. Lipski, M. Mardenfeld, M. Nakahira, C. Neumeyer, R. Pillsbury</i>	
<b>The Superconducting Magnet System Of The Stellarator Wendelstein 7-X.....</b>	<b>734</b>
<i>Thomas Rummel, Konrad Risse, Gunnar Ehrke, Kerstin Rummel, Andre John, Thomas Monnich, Klaus-Peter Buscher, Reinhard Heller, Walter Fietz, Olaf Neubauer, Anatoly Panin</i>	
<b>ITER Diagnostics Challenges .....</b>	<b>740</b>
<i>Michael Walsh, P. Andrew, R. Barnsley, L. Bertalot, R. Boivin, D. Bora, R. Bouhamou, S. Ciattaglia, A. E. Costley, G. Counsell</i>	

<b>Mapping Of The ASDEX Upgrade Operational Space For Disruption Prediction .....</b>	<b>748</b>
<i>Barbara Cannas, Alessandra Fanni, Gabriella Pautasso, Giuliana Sias</i>	
<b>High Pressure Gas Injection For Suppression Of Runaway Electrons In Disruptions.....</b>	<b>754</b>
<i>Leonid Zakharov, S. Putvinski, A. S. Kukushikin, R. A. Pitts, M. Sugihara, S. Maruyama</i>	
<b>Development Of Cu-Cr-Zr Alloy For Applications In Neutral Beams .....</b>	<b>760</b>
<i>C. Rotti, A. K. Chakraborty, I. Ahmed, G. Roopesh, M. J. Singh, Sejal Shah, A. Phukan, N. Panda, K. Balasubramanian</i>	
<b>5khz Modulation Of 170ghz Gyrotron With Anode-Cathode Short-Circuited Switch.....</b>	<b>765</b>
<i>Ken Kajiwara, Kazuo Hayashi, Yasuhisa Oda, Koji Takahashi, Atsushi Kasugai, Keishi Sakamoto</i>	
<b>Integration Progress On ITER In-Cryostat Components .....</b>	<b>770</b>
<i>Jens Reich, Jean-Jacques Cordier, Benoit Manfredo, Tudorel Popa, Bharat Doshi, Cheng-Yu Gung, Giovanni Dell Orco</i>	
<b>Development Of Iter Sector Sub-Assembly Procedure And Assembly Tools .....</b>	<b>774</b>
<i>Kyoungso Nam, Hyunki Park, Dongjin Kim, Heejae Ahn, Joosik Bak, Kyoungsoo Kim, Byungseok Kim, Kihak Im, Robert Shaw</i>	
<b>Design Feasibility Analysis Of The Robot For EAST Tokamak Flexible In-Vessel Inspection .....</b>	<b>780</b>
<i>Xuebing Peng, Yuntao Song</i>	
<b>ASDEX Upgrade Results And Future Plans .....</b>	<b>784</b>
<i>A. Kallenbach, V. Bobkov, F. Braun, A. Herrmann, H. Hohnle, R. M. Mcdermott, R. Neu, T. Putterich, J. Schweinzer, J. Stober, E. Strumberger, W. Suttrop, D. Wagner</i>	
<b>Charting The Roadmap To Magnetic Fusion Energy .....</b>	<b>792</b>
<i>G. H. Neilson, R. Betti, D. Gates, C. Kessel, J. Menard, S. Prager, S. Scott, M. Zarnstorff</i>	
<b>Fusion Nuclear Science Facility, FNSF - Motivation And Required Capabilities .....</b>	<b>800</b>
<i>Yueng-Kay Martin Peng, Jin Myung Park, John M. Canik, Stephanie J. Diem, Aaron C. Sontag, Paul J. Fogarty, Arnie Lumsdaine, Yutai Katoh, Graydon L. Yoder, John C. Wagner, Bradley D. Patton, Thomas W. Burgess, Koffi Korsah, Mohamed Sawan</i>	
<b>Plasma Lens For The ITEP Heavy Ion Accelerator With TDI-Pseudosparks .....</b>	<b>807</b>
<i>Victor D. Bochkov, Alexandr A. Drozdovskiy, Alexandr A. Golubev, Yuri B. Novozhilov, Pavel V. Sasorov, Sergey M. Savin, Victor V. Yanenko</i>	
<b>Lessons Learned From Fabrication And Assembly Of Wendelstein 7-X.....</b>	<b>811</b>
<i>Hans-Stephan Bosch, Torsten Brauer, Thomas Klingner</i>	
<b>The Construction Of ITER, Viewed From Lessons Learned From KSTAR Project.....</b>	<b>817</b>
<i>H. L. Yang, J. S. Bak, K. Kim, Y. K. Oh, Y. S. Kim, B. C. Kim, Y. M. Park, W. C. Kim, K. R. Park, J. W. Sa, H. K. Kim, K. W. Cho, M. K. Park, K. H. Kim, T. H. Ha, K. H. D. S. Park, M. Kwon, G. S. Lee</i>	
<b>Implementation Of Earned Value Management Tools In The Wendelstein 7-X Project .....</b>	<b>825</b>
<i>Axel Lorenz, Katja Kuttler, Hans-Stephan Bosch</i>	
<b>Configuration Control Inside The W7-X Cryostat: Lessons Learned .....</b>	<b>829</b>
<i>Christophe Baylard, Dirk A. Hartmann, Rudolf Brakel</i>	
<b>The Upgrade Of Converter Unit Of East Poloidal Coil Power Supply .....</b>	<b>835</b>
<i>Ge Gao, Lsh Huang, L. J. Tang, L. S. Wang, Shy He, Peng Fu</i>	
<b>Quench Protection Circuits For The JT-60SA Superconducting Magnets: Final Design .....</b>	<b>840</b>
<i>Elena Gaio, Luca Novello, Alberto Maistrello, Paolo Bordignon, Alberto Coffetti, Mauro Perna, Alberto Coletti, Makoto Matsukawa, Kunihito Yamauchi</i>	
<b>Low Loss And Compact Power Supply For Superconducting Magnet Using MERS Soft-Switching Converter.....</b>	<b>846</b>
<i>Takanori Isobe, Kazuyuki Ito, Tatsuya Matsukawa, Ryuichi Shimada</i>	
<b>Multi-Secondary Transformer: A Modeling Technique For Simulation .....</b>	<b>852</b>
<i>Amit Patel, Narinadar Pal Singh, Bhavin Raval, Arpit Roy, Aruna Thakar, Darshan Parmar, Hitesh Dhola, Rasesh Dave, Sandip Gajjar, Vikrant Gupta, Vibhu Tripathi, Laxmi Narayan Gupta, Paresh Patel, Ujjwal Baruah</i>	
<b>Author Index</b>	