

VOLUME 2

Session IV: Fusion Physics Issues and Heating Systems (Poster Session R)

Control of the MHD Equilibrium in Iron Core Transformer Tokamaks C.V. ATANASIU, L.E. ZAKHAROV	998
Design of an ICRF Antenna for TFTR P. BONANOS, J. HOSEA, A. NAGY, S. RATTOPOULOS, R. WILSON	1003
A S-Band, 100kW RF System for LHCD on HT-6B Tokamak F. YUDE, L. YUEXIU, L. DENCHENG, W. JIAN, S. JARFANG, Z. XUELEI, Z. NAIXIAN, S. JINGYUAN	1007
Multi-Ampere Negative Ion Source for R & D of NBI System in Large Helical Device FANG YUDE, LIU YUEXIU, LIU DENGCHENG, WANG JIAN, SHAN JARFANG, ZHANG XUELEI, ZHU NAIXIAN, SONG JINGYUAN, HU YUMING	1012
Performance Requirements of Free Electron Lasers in High-Frequency Current Drive of Tokamak Reactors R.E. SALOMAA, S.J. KARTTUNEN, T.J.H. PÄTTIKANGAS, S.K. SIIPIA	1017
Development of Volume Production Li- Source M. SASAO, Y. OKABE, J. FIJITA, H. YAMAOKA, M. WADA	1022
A 10 Ampere Negative Ion Source for High Energy Neutral Beam Injector Y. OKUMURA, M HANADA, T. INOUE, H. KOJIMA, Y. MATSUDA, Y. OHARA, Y. OOHARA, M. SEKI, Y. SUZUKI, K. WATANABE	1026
Gun Anode Modulator for F.T.U. Gyrotrons D. CISCATO, T. FORTUNATO, A. LIETTI, F. MIRIZZI, A. PIERANTONI, M. SASSI	1031
Fast-Wave Current Drive System for DIII-D F.W. BAITY, R.H. GOULDING, D.J. HOFFMAN, P.M. RYAN, D.J. TAYLOR, M. J. MAYBERRY	1035
2MW 110 GHz ECH Heating System for DIII-D C. MOELLER, R. PRATER, R. CALLIS, D. REMSEN, J. DOANE, W. CARY, R. PHELPS, M. TUPPER	1040
Vertical Stability, High Elongation and the Consequences of Loss of Vertical Control on DIII-D A.G. KELLMAN, J.R. FERRON, T.H. JENSEN, L.L. LAO, E.A. LAZARUS, J.B. LISTER, J.L. LUXON, D.G. SKINNER, E.J. STRAIT, E. REIS, T.S. TAYLOR, A.D. TURNBULL	1045
ECH by FEL and Gyrotron Sources on the MTX Tokamak B.W. STALLARD, W.C. TURNER, S.L. ALLEN, J.A. BYERS, B. FELKER, M.E. FENSTERMACHER, S.W. FERGUSON, E.G. HOOPER, K. I. THOMASSEN, A.L. THROOP, M.A. MAKOWSKI	1050
Progress in Producing Megawatt Gyrotrons for ECR Heating K. FELCH, E. JONGEWAARD, H. JORY, C. HESS, H. HUEY, J. NEILSON, R. PENDELTON, M. TSIRULNIKOV	1055
Construction and Testing of the New Multijunction LHRF Launcher for JT-60 Upgrade M. SEKI, Y. IKEDA, K. KONISHI, K. SATO, H. FUJITA, N. SEKI, K. UEHARA, T. NAGASHIMA, M. OHTA	1060
The 2.45 GHz Lower Hybrid Current Drive System on the ASDEX Tokamak M. MÜNICH, F. HABENPFLUG, F. LEUTERER, F. MONACO, M. PELICANO, F.X. SÖLDNER, M. ZOUHAR	1065
High Power Measurements on Mode-Purity and Fast Modulation for ECRH on RTP A.G.A. VERHOEVEN, W.A. BONGERS, R. BOSMAN, R.D. DAMSTRA, O.G. KRUYT, J. STAKENBORG	1070
39GHz ECRH System for Breakdown Studies on the TCA Tokamak A. POCHELON, T. GOODMAN, D. WHALEY, M.Q. TRAN, A. PERRENOUD, D. REINHARD, B. JÖDICKE, H.G. MATTHEWS, W. KASPAREK, M. THUMM	1075
FTU Plasma Position and Current Feedback Control F. CRISANTI, C. NERI, M. SANTINELLI	1080

Design and Development of a 8MW, 8GHz LHRH System for the Frascati Tokamak Upgrade (FTU)	
R. ANDREANI, T. FORTUNATO, C. GOURLAN, F. MIRIZZI, M. ROCCON, M. SASSI, G. SCHETTINI	1084
Active Control of the Magnetic Field Configuration in RFX	
P. FIORENTIN, F. GNESOTTO, G. MARCHIORI, P. SONATO	1089
Transient Electromagnetic Models and Applications to NET/ITER Design	
R. ALBANESE, G. AMBROSINO, E. COCCORESE, F. GAROFALO, R. MARTONE, G. RUBINACCI	1094
Automatic VSWR Control in JET ICRH Transmitters	
G. BOSIA, B. LAMONT, A. SIBLEY, M. SCHMID, T. WADE	1099
ICRF Antennae For the JET Pumped Divertor Configuration	
R. LOBEL, V. BHATNAGAR, J. JACQUINOT, A. KAYE, H. PANISSIÉ, P-H. REBUT	1104
Tokamak Stray Field Compensation System for JET Neutral Beams	
D. COOPER, H. ALTMANN, J. CARWARDINE, C. CHALLIS, H.P.L. DE ESCH, D. STORK	1109
An Analytic Procedure for Currents and Forces Calculation in JET	
S. BOBBIO, E. BERTOLINI, M. GARRIBBA, G. MIANO, P. NOLL, E. SENATORE	1114
Fast Switch-Off High Voltage Power Supplies Dedicated to the Energy Recovery in the Tore Supra Neutral Beam Injectors	
C. JACQUOT, P. BAYETTI, F. BOTTIGLIONI, B. CHARMASSON, M. COURBOU	1119
ARC Power Supplies for the Tore Supra Ions Sources: Whole Range Current Regulation by a Parallel Active Filter	
P. BAYETTI, F. BOTTIGLIONI, J. PIERRE	1123
First Operation of the Lower Hybrid System of Tore Supra	
PH. BIBET, G. BERGER-BY, J.J. CAPITAIN, M. GONICHE, R. MAGNE, G. REY, G. TONON.	1127
Lower Hybrid Current Drive System for ITER	
G. TONON, PH. BIBET, G. BERGER-BY, J.J. CAPITAIN, M. GONICHE, R. MAGNE, G. REY	1132
The 110 GHz EC Waves Experiment on Tore Supra	
R. MAGNE, J.P. CRENN, M. GONICHE, G. TONON	1137
Microwave Technology of the Quasi-Optical 140 Ghz ECRH on the Advanced Stellarator W VII-AS	
W. HENLE, W. KASPAREK, H. KUMRI' C, G.A. MÜLLER, P.G. SCHÜLLER, M. THUMM, V. ERCKMANN	1142
Feedback Control of the Plasma Position in RTP	
K.W. LEE, B. DE GROOT, P.C. VAN HAREN, J. LOK, A.A.M. OOMENS, M.S. DE WIT	1147
Time Dependence Measurement of Plasma Parameters obtained from Neutral Beam Modulation in TEXTOR	
H. CONRADS, H. EURINGER, D. LEBEAU, M. LOCHTER, J. ONGENA, M. SAUER, R. UHLEMANN	1151
Results of Tests of the X2274 High Power Tetrode in a JT-60 110 to 130MHz ICRH Amplifier	
D.B. REMSEN, C.M. LORING, S.G. MCNEES, S. MORIYAMA, Y. OGAWA, K. ANNO, T. FUJII, M. TERAKADO, S. KOGURE, T. NAGASHIMA, M. OHTA.	1156
Long Pulse Experience with the KfK 140GHz Gyrotron	
G. GANTENBEIN, G. DAMMERTZ, T. GEIST, G. HOCHSCHILD, M. KUNTZE, Z. LIAO, H-U. NICKEL, B. PIOSCZYK	1161
High Power Tests of the JET Prototype LHCD Launcher	
H. BRINKSCHULTE, G. REY, M. BRUSATI, A. EKEDAHL, C. GORMEZANO, A. KAYE, M. LENNHOLM, M. PAIN, H. PANISSIÉ, J. PLANCOULAIN, P. SCHILD	1166
Upgrade of JT-60 ICRF Heating System	
T. FUJII, N. KOBAYASHI, S. MORIYAMA, M. SAIGUSA, K. ANNOH, S. SHINOZAKI, M. TERAKADO, S. KOGURE, Y. OGAWA, K. WAKABAYASHI, M. TEZUKA, H. KIMURA, M. OHTA	1171
Development of Injectors for Next Step Tokamaks	
A.J.T. HOLMES, L.M. LEA, K.P. MARTEL, R.S.G. PARKER, M. THORNTON	1176

The 4 x 2 MW ICRH System for ASDEX Upgrade F. WESNER, J. BÄUMLER, W. BECKER, F. BRAUN, R. FRITSCH, F. HOFMEISTER, J.-M. NOTERDAEME, H. WEDLER, H.-U. BOKSBERGER, B. ROSSA, J. WYSS	1181
New Antenna Impedance Evaluation and Matching Tools for TEXTOR's ICRH System F DURODIÉ	1186
High Power Helium Beams for TEXTOR and He-Pumping Capability of the NBI Vacuum and Cryosystem H.B. REIMER, R. UHLEMANN, H. EURINGER, M. LOCHTER, J. WINTER, H. CONRADS	1191
The ECRH System for TJ-II Experiment R. MARTIN, M. SOROLLA, J.R. CEPERO, A. LÓPEZ.	1196
Complex Control System of the Initial Stage of Discharge on T-10 V.A. GULYAEV, S.A. VOROTNIKOV, B.S. LEVKOV, L.A. MATALIN, G.E. NOTKIN, N.V. SYSOEV	1201
Burn Control Studies for NET/ITER D. ANDERSON, T. ELEVANT, H. HAMNÉN, M. LISAK, J. LORENZEN, H. PERSSON	1204
The Plasma Control System of the JFT-2M Tokamak I. OYABU, K. IKEDA, T. SHOJI, M. MORI, S. HAYASHI	1209
Data Management on COMPASS J. WATERHOUSE, M.F. PAYNE, P.M. DELANEY	1214
Control and Protection System for the Lower-Hybrid Current Drive System on the Tokamak de Varennes J. BAGDOO, Y. DEMERS, R. DECOSTE, J.M. GUAY, G.-A. CHAUDRON, A. HUBBARD.	1219
Status of the TFTR Neutral Beam Computer Control and Data Acquisition System L. LAGIN, J. CHU, S. DAVIS, G. FLEMING, P. FUNK, L. GRISHAM, J. HIRSCH, J. KAMPERSCHROER, G. KOLINCHAK, J. MCENERNEY, J. MONTAGUE, T. O'CONNOR, L. RANDERSON, K. SILBER, T. STEVENSON, W. STARK, A. VON HALLE, M. WILLIAMS	1224
Self-Tuning Methods for Plasma Control Applications M. BROWNE, L. ZHENG, R. FERNANDEZ, P. WELLSTEAD	1229
A Programmable Function Generator System for Control and Data Acquisition at TEXTOR M. KORTEN, B. GIESEN, P. HÜTTEMANN, R. KLEIN	1234
A Dynamic Data Processing Tree for the RTP Tokamak Experiment J.H. BOERMA, G.M.D. HOGWEIJ, N.J. LOPES CARDOZO	1239
Real Time Diagnostic Data Acquisition and Plasma Control using Transputers E. VAN DER GOOT, A.W. EDWARDS, J. ELLIS, D. O'BRIEN	1244
Specific Features of the Control and Data Acquisition for the JET Pellet Injector M. GADEBERG, J.G. KROM, P. KUPSCHUS, S.B. PARKER	1249
The JET In-Vessel Inspection Man-Machine Interface T. BUSINARO, J.F. JUNGER	1254
The Tore Supra Control Computer System: Programmed and Configured by the Users J.Y. JOURNEAUX, J.J. CAPITAIN, E. CHATELIER, B. COUTURIER, B. GAGEY, J. IMDTAL, P. LOTTE, D. MOULIN, G. PASTOR	1259
A Hybrid Matrix Multiplier for Control of the TCV Tokamak P.F. ISOZ, J.B. LISTER, P. MARMILLOD	1264
Distributed Control of the TCV Tokamak and Modular Bitbus Nodes J.B. LISTER, P. MARMILLOD, P.F. ISOZ, E. PIACENTINI, B. MARLETAZ	1268
MDS-Plus - A Comprehensive Data Acquisition and Analysis System G. FLOR, G. MANDUCHI, T.W. FREDIAN, J.A. STILLERMAN, K.A. KLARE	1272
General Physical Requirements for a Competitive Fusion Breeder S. TACZANOWSKI, P. GRONEK	1277
KrF Laser Path to High Gain ICF Laboratory Microfusion Facility D.B. HARRIS, J. AL. SULLIVAN, J.F. FIGUEIRA, D.C. CARTWRIGHT, T.E. MCDONALD, A.A. HAUER, S.V. COGGESHALL, S.M. YOUNGER	1282
Engineering Feasibility of Tight Aspect Ratio Tokamak (Spherical Torus) Reactors Y.-K.M. PENG, J.B. HICKS	1287

Decoupled Power and Temperature Control Scheme for Reversed Field Pinch (RFP) Fusion Power Reactor	
H. SHIMOTOHNO, T. KITAMORI, S. KONDO	1292
ZTI: An Ignition Class Reversed-Field Pinch	
C.G. BATHKE, R.A. KRAKOWSKI, R.L. MILLER, K.A. WERLEY	1297
Reactor Parameters for European Economic, Safety & Environmental Studies	
R. HANCOX, W.R. SPEARS, P.I.H. COOKE	1302
Cascade and Hylife ICF Reactor Concept Revisions	
J.H. PITTS, R.O. BANGERTER, D.D. HO, R.W. MOIR, M. TABAK	1307
Impact of the Poloidal Field-System Design on the NET Operational Flexibility	
J.M. ANÉ, J.P. ALLIBERT, P. HERTOUT, N. MITCHELL, A. PORTONE, D. ROBINSON	1312
Remote Maintenance System Design and Component Development for Fusion Experimental Reactor	
K. SHIBANUMA, T. HONDA, K. SATOH, Y. OHKAWA, T. TERAKADO, H. YOSHIDA, H. TSUJI, S. MATSUDA.	1317
A High Dynamic Range Neutron Counting System for ICRH and NBI Experiments on TEXTOR	
T. DELVIGNE, D. LEBEAU, A. MESSIAEN, G. VANWASSENHOVE	1322
Development of a Cryosorption Pump For Fusion Reactors	
Y. IWASA, N. MIKI, T. UCHIDA, N. TACHIKAWA	1327
High Power Beam Extraction From a Large Volume Radio-Frequency Plasma Generator	
W. KRAUS, R. BILAU-FAUST, J.-H. FEIST, E. SPETH	1332
 <i>Section V: Fusion Materials and Tritium Handling (Poster Session S)</i>	
Gastafiore: Gamma Irradiations of Sensors, Transducers and Fiber Optics for Remote Operations. Irradiation Test of Fiber Optics and Proximity Sensors for use in Remote Handling and Maintenance	
V. MASSAUT, M. DECRETON, R. ORIS	1337
Simulation and Experimentation on a 1/3 Scale Mock-up of the Blanket Segment Removal Process	
M. BECQUET, F. FARFALETTI-CASALI, O. IOP	1342
Graphics and CAD Support for NET/ITER Boom Control	
U. KÜHNAPFEL, A. LUDWIG.	1347
In-Vessel Vehicle System for Remote Maintenance of Torus Interior	
H. JONES, M. HEIM	1353
A Preliminary Design of an In-Vessel Vehicle System for the Maintenance of NET	
G. CLEMENT, B. BIORET, C. GLACHET, D. MAISONNIER, M. MAUPOU.	1358
The Assembly of the NET Machine	
F. CASCI, C. HOLLOWAY, D. MAISONNIER, G. MALAVASI, E. SALPIETRO, E. VILLATA	1363
Remote Maintenance of NET Cryogenic Pipe Connectors	
CH. BARNES, L. GUMB, C. HOLLOWAY, H. KATHEDER, M. SELIG, D. STERN, E. VILLATA	1368
Remote Maintenance of NET/ITER Torus Vacuum Pumping System	
C. HOLLOWAY, J. STRINGER	1373
The Design and Construction of the TARM - A Crane-Mounted Remotely-Controlled Transporter for JET	
L.P.D.F. JONES, L. GALBIATI, M. GREDEL, W. NEDDERMEYER	1378
Beryllium Related Maintenance on JET	
S.J. BOOTH, G. CELENTANO, G. NEWBERT, M. PICK, A. TESINI	1383
In-Vessel Remote Maintenance System for FER	
M. OBAMA, H. OGAWA, T. MUNAKATA, S. MURAKAMI, M. KONDOH, N. TACHIKAWA, K. SHIBANUMA	1388
Doses to Man Due to Leakage into the Biosphere of Fusion Waste Nuclides Disposed of in a Repository	
I. AGGERYD, U. BERGSTRÖM, K. BRODÉN	1393
Key Processes and Input Parameters for Environmental Tritium Models	
C. BUNNENBERG, M. TÄSCHNER, G.L. OGRAM	1398

Safety and Availability of the Cooling Systems for Net Plasma Facing Components R. BLÖMQUIST, J. COLLÉN, R. FAHLÉN	1402
Reliability and Availability Assessment of the NET Divertor System J. COLLÉN, R. FAHLÉN, K. PÖRN	1407
Safety Analysis of the Exhaust System of a NET/ITER-Type Machine G. CAMBI, G. CAVALLONE, T. PALMA, S. SARTO	1412
Safety Analysis of NET Magnet System R. CAPORALI, S. CIATTAGLIA, F. TARISCIOTTI, G. CAMBI	1417
Risk Evaluation of Various Design Options for the Divertor of NET-II/ITER A. BOSCHI, G. CAMBI, G. CAVALLONE, M. GASPARINI	1422
Safety for the Evolving ITER Conceptual Design J. RAEDER, S.J. PIET, Y. SEKI, L.N. TOPILSKI	1427
Simulation of Fusion Plant Operation with respect to Reliability R. BUENDE, K. CHAHARBAGHI	1432
Tritium Behaviour in the Soil-Plant-Atmosphere Continuum S. STRACK, S. DIABATÉ, M. HETTINGER	1437
Preliminary Safety Evaluations for Ignitor S. CIATTAGLIA, M. GASPAROTTO, J. BOURDON, G. FERRARI, D. ROSA	1442
Safety Analysis of Potential Graphite Oxidation Effects in JET M.E.P. WYKES, E.B. DEKSNIS, C.J. CALDWELL-NICHOLS	1447
Methodology of Tritium and Radiation Compatibility Assessments for JET Diagnostic and other Systems and the Preliminary Results C.J. CALDWELL-NICHOLS	1452
Risk Assessment Methodology for the JET Active Gas Handling System (AGHS) and the Significance of the Exhaust Detritiation System in meeting Design Safety Targets A.C. BELL, P.R. BALLANTYNE	1457
The JET Quality Assurance Programme and its Associated System of Technical Documents P. MERIGUET, C. EVANS, B. GREEN, G. HORN, F. HURD, P.H. REBUT, D. SIGOURNAY.	1462
The Independent Assessment of Planned Tritium Operations at JET H.E. CAMPBELL, M.D. ROWBOTTOM	1467
Synopsis of LOCA, LOFA and LOVA Accidents for NET/ITER E. EBERT, J. RAEDER	1472
Loss of Vacuum, Loss of Coolant and Loss of Flow Accidents Analysis for NET/ITER F. ANDRITSOS, Y.G. CAOURIS, P. ROCCO, M. ZUCCHETTI, H.T. KLIPPEL, E. KOMEN, J.P.A. VAN DEN BOGAARD, T. ZYLBERSZTEJN, E. DRIMILLE, F. MAZILLE	1477
New Digital Control Systems of Poloidal Field Power Supplies for JT-60 Upgrade Y. MATSUZAKI, T. AOYAGI, T. TERAKADO, M. TAKASHASHI, H. NOBUSAKA, K. OMORI	1482
Toroidal Field Coil Design for TJ-II Helic Device G. DAL MUT, G. FERRARI, R. MARABOTTO, G.P. FAZIO, J. ALONSO, M. BLAUMOSER, J. BOTIJA, A. PEAREA, A. CUCCHIARO, M. GASPAROTTO, A. PALMIERI, A. PIZZUTO	1487
19 Rectifiers to Supply the Coils of the TCV Tokamak D. FASEL, G. DEPRÉVILLE, A. FAVRE, J.-D. PAHUD, A. PEREZ, F. PUCHAR	1492
Development of Low Loss Superconducting Elementary Conductor for Fusion Magnets at Aisa HOANG GIA KY, G. GRUNBLATT	1497
Power Supply and Protection System for Plasma Stabilization Coils of ASDEX Upgrade - Commissioning Results A. WIECZOREK, M. BLAUMOSER, R. FINK, J. OSWALD, J. SCHWARZ, K.H. VÖGTLE	1501
Finite Element Modelling with Sliding Effects Compared with Measurements obtained from the Non-Planar Coils for the Wendelstein VII-AS Stellarator O. JANDL, J. SAPPER, J. SIMON-WEIDNER	1506
On Mechanical Stresses in Large Helias Coil Systems and the Influence of Contact Effects J. SIMON-WEIDNER, N. JAKSIC, E. HARMEYER.	1511

Force and Stress Calculations for a Non-Planar W VII-X Demonstration Coil E. HARMEYER, R. HELLER, J. KISSLINGER, W. MAURER, F. RAU, A. ULBRICHT, H. WOBIG, G. ZAHN	1515
Magnetic Field and Coil Systems of the Modular Helias Configuration HS 5-10 J. KISSLINGER, C. BEIDLER, E. HARMEYER, F. RAU, H. WOBIG	1520
The New 20kHz Switch-mode Power Supply in Transistor Technology for the TEXTOR Plasma Position Control B. GIESEN, P. HÜTTEMANN, K. KRÖNER, W. SCHALT, A. SEEGER, K. STEINHAUSER	1525
Mechanical Test of Superconducting Magnet System for Fusion Experimental Reactor M. SUGIMOTO, K. YOSHIDA, H. HASEGAWA, K. KOIZUMI, H. NAKAJIMA, M. KONNO	1530
Cryogenic System Design and its Component Development for Fusion Experimental Reactor (FER) T. KATO, E. TADA, T. HIYAMA, K. KAWANO, E. KAWAGOE, H. ISHIDA, J. YOSHIDA, Y. KAMIYAUCHI	1535
Integrated Magnet-Scenario Code for Analysis of the ITER Magnet-Plasma Control Systems J. SCHULTZ, R. BULMER, J. MILLER, S. SHEN, R. WONG	1540
Magnet Design for the ARIES-I High Field Tokamak Reactor L. BROMBERG, D. R. COHN, J. SCHULTZ, J. SWARTZ, P. TITUS, J.E.C. WILLIAMS, S.P. GROTZ, R.L. CREEDON, C.P.C. WONG	1545
A Superconducting Solenoid Coil with Twisted Profile for the R&D of the Large Helical Device (LHD) T. MINATO, T. SASAKI, S. TAKAGI, T. ICHIHARA, K. TOYODA, S. TADO, B. IKEDA, T. TSUKAMOTO, T. MITO, J. YAMAMOTO, K. TAKAHATA, N. YANAGI, O. MOTOJIMA	1550
GTO Thyristor Converter Power Supply for the Horizontal Position Control of Tokamak de Varenes R. ANNAMRAJU, D. LAROSE, G.W. PACHER	1555
Manufacturing and Testing 40 kA Prototype Conductors For the NET Superconducting Coils P. BLASIO, L. BOTTURA, P. BRUZZONE, S. CERESARA, J. EIKELBOOM, J.V. MINERVINI, N. MITCHELL, G. PASZTOR, R. POEHLCHEN, M. RICCI, E. SALPIETRO, M. SPADONI, W. SPECKING, A. TOROSSIAN	1559
Prototype Manufacturing for the NET Vertical Stability Active Control Coils G. MALAVASI, M. MENCONI, N. MITCHELL, E. PICCO, M. RICCI	1564
Structural Assessment of the NET/ITER Central Solenoid R. ANNANDALE, N. MITCHELL	1569
An Approach to the Design of the Poloidal Field System for a Toroidal Device C.A. BORGHI, U. REGGIANI, G. ZAMA	1574
An Updated Comparison of NbTi and Nb ₃ Sn Superconductors for Fusion Devices H. KRAUTH, A. SZULCZYK, M. THÖNER, K. HEINE, F. GEYER, M. KEMPER	1579
The KfK-Nb ₃ Sn React and Wind Conductor for NET Toroidal Field Coils and its Boundaries R. FLÜKIGER, R. HELLER, K.-R. LEIMBACH, W. MAURER, A. NYILAS, C. SCHMIDT, W. SPECKING, A. ULBRICHT	1584
Stress Analyses of ITER Toroidal Field Coils under Fault Conditions C.T.J. JONG	1589
Manufacture of Poloidal Field Coil for JT-60U Y. SHIZUOKA, I. NUMATA, T. WATANABE, Y. ITOU, T. KOHDA, H. KAMIYA, K. OHWADA, K. GOTOH, T. YONEZAWA, H. SASAJIMA	1594
Manufacture and Testing of Demountable and Flexible Joints for RFX Toroidal Field Winding F. BELLINA, P. CAMPOSTRINI, W. REASS, J.R. SIMS, A. STELLA	1599
Octant Removal at JET for a Toroidal Field Coil Exchange G. CELENTANO, B. MACKLIN, S. BOOTH, J.R. LAST, S. PAPSTERGIU, M.A. PICK, P. PRESLE, S. SCOTT, A. TESINI	1604
JET TF Coil Fault - Detection, Diagnosis and Prevention J.R. LAST, T. BONICELLI, M. COOKE, N. DOLGETTA, M. HUGUET, R. LANZA, P. NOLL, P. PRESLE, C. SBORCHIA	1609

The JET Divertor Magnetic Configuration and Coil Design J.R. LAST, P. BARABASCHI, E. BERTOLINI, M. GARRIBBA, M. HUGUET, P. NOLL, P.H. REBUT, C. SBORCHIA	1614
The Conversion and Operation of the JET Neutral Beam Power Supplies up to 160kV R. CLAESEN, P.L. MONDINO, P. BAIGGER, P. BERTOLDI, D. BINDER, F. JENSEN, R. RUSHTON	1619
The High Power, Wide Bandwidth Disruption Feedback Amplifiers for JET P.L. MONDINO, S.M. TENCONI, A. BOSELLI, M. CARPITA, N. DOLGETTA, C. GALLANDT, V. MARCHESE, A. ODONE, L. PITTEA, E. RIZZO, A. SANTAGIUSTINA, L. ZANNELLI	1624
Design Manufacture and Assembly of A Superconducting PF Coil for Tore Supra As a Step for NET-PF Coils A. TOROSSIAN, D. BESSETTE, B. BERTRAND, G. BON MARDION, D. CIAZYNSKI, P. DECOOL, J.L. DUCHATEAU, B. JAGER, P. LIBEYRE, G. MAYAUX, C. PORTAFAIX, L. TAVIAN, B. TURCK	1629
A 40kA NbTi Cable in Conduit Conductor for the Large Poloidal Field Coils of NET A. TOROSSIAN, D. BESSETTE, B. TURCK, B. KAZIMIERZAK	1634
Operation of Tore Supra Toroidal Field Magnet at Nominal Current Description of the Electrical Circuit and Safety System P. RIBAND, B. BAREYT, D. BESSETTE, D. CIAZYNSKI, J.L. DUCHATEAU, J. PIERRE, E. ROUANET, B. TURCK	1639
Mechanical Analysis of the Operation of the Tore Supra Toroidal Magnet P. LIBEYRE, J. PIERRE, C. PORTAFAIX	1644
Two Years of Operation of the Tore Supra Cryogenic System B. GRAVIL, G. BON MARDION, G. FERLIN, B. JAGER, L. TAVIAN	1649
The RFX 4.8 MJ Toroidal Capacitor Bank A. DE LORENZI, J.W. GRAY, M.B. HOOD, A. MASCHIO	1654
Story of Damaged BT 17 Coil of the TF Superconducting Magnet of Tore Supra D. BESSETTE, D. CIAZYNSKI, J.L. DUCHATEAU, P. RIBAND, B. TURCK	1659
Analysis and Experiments of an Improved PF Circuit on HT-6M(II) LIU BAOHUA, PAN YUAN, YU YUANQI, FAN SHUPING, CHEN ERLIAN	1664
The Suppression and Protection for Plasma Current Disruption in Tokamak PAN YUAN, WANG MAOQUAN, YU YUANQI	1668
Design, Manufacture and Assembly of the ASDEX Upgrade Turnover Structure B. STREIBL, A. ZEISBERG, CHINOWSKI, HEINECKER, PONS, CHAVET	1673
Recent Developmental Status of Components in SNUT-79 Tokamak Y.S. CHO, Y.S. CHUNG, Y.K. OH, K.H. CHUNG, B.H. CHOI, S.Y. IN, S.M. HWANG	1678
Structural Assessment of the NET TF Coils I. IVERSEN, N. MITCHELL	1682
Different Approaches for the Coupled Thermo-Magneto-Structural Analysis of Toroidal Field Coils of Resistive High Field Tokamak A. BIANCHI, M. GRATTAROLA, P. MOLFINO, M. NERVI, E. PICCO, M. REPETTO, A. SESTERO	1687
Preparations for the Toska Facility at KfK for Testing of NET Model Coils A. GRÜNHAGEN, R. HEIL, R. HELLER, W. HERZ, A. HOFMANN, K. JENTZSCH, H. KAPULLA, H. KATHEDER, B. KNEIFEL, P. KOMAREK, W. LEHMANN, W. MAURER, H. MÜLLER, H. PULCH, W. REEB, G. SCHENK, F. SPATH, M. SÜBER, A. ULBRICHT, G. ZAHN	1692
Study of the Current Distribution in the Bitter Type Toroidal Field Coil D. SHIJUN, W. SAHOHUA, L. ZUPEI	1697
Toroidal and Poloidal Field Coil Concept Design for NET L. BOTTURA, F. FARDI, N. MITCHELL, M. PERRELLA	1701
Development of Components for Poloidal Field Coils Within the KfK Polo - Project S. FÖRSTER, G. FRIESINGER, R. HELLER, U. JESKE, G. SCHENK, G. NÖTHER, C. SCHMIDT, L. SIEWERDT, M. SÜBER, A. ULBRICHT, F. WÜCHNER, P. BONNET, A. BOURQUARD, F. GEYER, H. SCHADT	1706

50kA, 50kV DC Interruption and Switching Systems for the Los Alamos ZTH Experiment W.A. REASS, R.J. CORDOVA, J.G. GARCIA	1711
Model Coil Design for Verification of the Coil/Conductor Concept for the NET Coils R. ANNANDALE, L. BOTTURA, N. MITCHELL, M. PERRELLA, E. SALPIETRO	1716
Author Index	xxiii