

TECHNICAL REPORTS (TR) 2018-19

Adaptation of Fast Responding Power Supply for Radial Position Control in SST-1
DINESH KUMAR SHARMA, AKHILESH KUMAR SINGH, AMIT OJHA, MURTUZA M. VORA, KIRIT
KUMAR B. PATEL and JASRAJ DHONGDE
IPR/TR-474/2018 (APRIL, 2018)

Current Status of Far-Infrared Interfero/Polarimeter for SST-1
ASHA ADHIYA and RAJWINDER KAUR
IPR/TR-475/2018 (APRIL, 2018)

Standard Operation Procedures of Regulated High Voltage Power Supply (RHVPS) for LHCD and ECRH
C. B. SUMOD and NBI POWER SUPPLY & DATA ACQUISITION DIVISION
IPR/TR-476/2018 (APRIL, 2018)

Standard Operation Procedure for SST-1 Magnet System by Magnet System Division, IPR
UPENDRA PRASAD, BHADRESH R PARGHI, PANKAJ VARMORA, AZAD MAKWANA, MONI
BANAUDHA and CHIRAG DODIYA
IPR/TR-477/2018 (APRIL, 2018)

Conditioning, Installation, Testing and Commissioning of PF Converter Transformer
AKHILESH KUMAR SINGH, AMIT OJHA, DINESH KUMAR SHARMA, MURTUZA M. VORA, CHIRAG B.
BHAVSAR and SUPRIYA A. NAIR
IPR/TR-478/2018 (APRIL, 2018)

Development of Substation Monitoring System (SMS) for 132 KV Sub-station at IPR
AMIT OJHA, MURTUZA M. VORA, DINESH KUMAR SHARMA and AKHILESH KUMAR SINGH
IPR/TR-479/2018 (MAY, 2018)

Power Supply Quench Protection System of Toroidal Field Superconducting Coil for SST-1
MURTUZA VORA, AKHILESH SINGH, DINESH SHARMA, AMIT OJHA, PRAKASH PARMAR, CHIRAG
BHAVSAR and A. VARADHARAJULU
IPR/TR-480/2018 (MAY, 2018)

Testing of PF2 Power Supply
DINESH KUMAR SHARMA, MURTUZA M. VORA, AKHILESH KUMAR SINGH, AMIT OJHA and
SUPRIYA A. NAIR
IPR/TR-481/2018 (MAY, 2018)

SOP for SST-1 APC Power Supply
DINESH KUMAR SHARMA, AKHILESH KUMAR SINGH, AMIT OJHA, JASRAJ DHONGDE, MURTUZA
M. VORA and SUPRIYA A. NAIR
IPR/TR-482/2018 (MAY, 2018)

SOP for SST-1 TF Power Supply
DINESH KUMAR SHARMA, MURTUZA M. VORA, AKHILESH KUMAR SINGH, AMIT OJHA AND
SUPRIYA A. NAIR
IPR/TR-483/2018 (MAY, 2018)

Pipe stress analysis report of Helium Cooling Systems (FWHCS and LLHCS)
ADITYA KUMAR VERMA, B. YADAV, A. GANDHI and E. RAJENDRA KUMAR
IPR/TR-484/2018 (MAY, 2018)

Development of Precise electronic system for cryogenic two phase flow void fraction measurement
G. PURWAR, G. K. SINGH, R. PATEL, H. D. NIMAVAT and V. L. TANNA
IPR/TR-485/2018 (MAY, 2018)

Modular, High Current, Fast Response IGBT Based Inverter Power Supply of SST-1 Tokamak
DINESH KUMAR SHARMA, AKHILESH KUMAR SINGH, AMIT OJHA and MURTUZA M. VORA
IPR/TR-486/2018 (MAY, 2018)

Design, Testing, Installation and Commissioning of LT Circuit Breaker Panels for Auxiliary Building
PRAKASH PARMAR, SUPRIYA NAIR, CHIRAG BHAVSAR and C. K. GUPTA
IPR/TR-487/2018 (MAY, 2018)

PLC Based Ladder Logic for Control, Monitoring, Interlocks and it's Signal Conditioning of 100kW, 45.6 MHz
ICRH System
H. M. JADAV, RAMESH JOSHI, BHAVESH KADIA, KIRIT PARMAR, SRINIVAS Y.S.S., SUNIL KUMAR,
S. V. KULKARNI AND ICRH RF GROUP
IPR/TR-488/2018 (MAY, 2018)

Erection, Testing and Commissioning of 31.5MVA, 132/11.2kV Power Transformer at 132kV IPR Substation
CHANDRA KISHOR GUPTA, SUPRIYA NAIR, PRAKASH PARMAR and CHIRAG BHAVSAR
IPR/TR-489/2018 (MAY, 2018)

Installation, Testing and Commissioning of Control and Relay panel (CRP-6) for 31.5 MVA, 132/22 kV Power
Transformer at IPR Substation
CHIRAG B. BHAVSAR, PRAKASH PARMAR, C.K. GUPTA and SUPRIYA NAIR
IPR/TR-490/2018 (MAY, 2018)

Development and optimization of the antenna assembly for the ADITYA-U Reflectometry diagnostic systems
VARSHA GOYAL, JJU BUCH, and S. K. PATHAK
IPR/TR-491/2018 (MAY, 2018)

Conceptual Design of Cryo-Sorption Cryopump for Application in SST-1 Tokamak
RANJANA GANGRADEY, SAMIRAN SHANTI MUKHERJEE, JYOTISHANKAR MISHRA, PARESH
PANCHAL, PRATIK NAYAK, VISHAL GUPTA and SUBHADIP DAS
IPR/TR-492/2018 (MAY, 2018)

Design, Fabrication and Testing of 7kV, 6A Series Connected IGBTs Switch for Triode Based 20 kW Stage ICRF
Amplifier
BHAVESH R. KADIA, KIRIT PARMAR, Y. S. S. SRINIVAS, S. V. KULKARNI and ICRH GROUP
IPR/TR-493/2018 (JUNE, 2018)

Measurement of Ultrasonic Velocity in Plasma Facing Materials at Elevated Temperatures
KEDAR BHOPE, MAYUR MEHTA, SAMIR KHIRWADKAR, TUSHAR PATEL and NIKUNJ PATEL
IPR/TR-494/2018 (JUNE, 2018)

SST-1 Vacuum System Operations Manual Handbook (Ver. 1.0)
ZIAUDDIN KHAN, DILIP C. RAVAL, KALPESHKUMAR R. DHANANI, PRATIBHA SEMWAL, GATTU
RAMESH, FIROZKHAN PATHAN, SIJU GEORGE, PARAVASTU YUVAKIRAN, PRASHANT THANKEY
and ARUN PRAKASH A.
IPR/TR-495/2018 (JUNE, 2018)

VME System Based Technique for IGBT Switching and Current Control
DINESH KUMAR SHARMA, AKHILESH KUMAR SINGH and SUBRATA PRADHAN
IPR/TR-496/2018 (JULY, 2018)

Generic Power Supply Feedback Controller for Control of Plasma Parameters in SST-1
DINESH KUMAR SHARMA, AKHILESH KUMAR SINGH and SUBRATA PRADHAN
IPR/TR-497/2018 (JULY, 2018)

Development of Liquid Nitrogen Based Cryo-Sorption Cryopump
RANJANA GANGRADEY, SAMIRAN SHANTI MUKHERJEE, JYOTI SHANKAR MISHRA, PARESH
PANCHAL, PRATIK NAYAK, VISHAL GUPTA and SUBHADIP DAS
IPR/TR-498/2018 (JULY, 2018)

Characterization of Black Body Target Materials for Calibration of Michelson Interferometer Diagnostics
ABDUL SHABIR, ABHISHEK SINHA and S. K. PATHAK
IPR/TR-499/2018 (JULY, 2018)

Numerical Study of Argon Diffusion in Ambient Air from Jet in the Absence of Plasma
AKSHAY VAID, G. RAVI and SUBROTO MUKHERJEE
IPR/TR-500/2018 (JULY, 2018)

Survey of Tritium Facilities for Fusion Research
DEEPTI DUBEY and SHISHIR P. DESHPANDE
IPR/TR-501/2018 (JULY, 2018)

SST-1 TR3 (B) Deformation Analysis & Remedial Action for Support design, Fabrication & Integration
PROSENJIT SANTRA, PRABAL BISWAS, SNEHAL JAYSWAL, PRADEEP CHAUHAN, HITESH PATEL,
AZADSINH MAKWANA, BHARAT DOSHI and UPENDRA PRASAD
IPR/TR-502/2018 (AUGUST, 2018)

Installation, Testing and Commissioning of Current Transformer for Tariff metering at 132kV IPR Substation
CHANDRA KISHOR GUPTA, SUPRIYA NAIR, PRAKASH PARMAR and CHIRAG BHAVSAR
IPR/TR-503/2018 (AUGUST, 2018)

Conceptual Design of Instrumentation and Control System for IN-LLCB TBS
T. SRINIVAS RAO, A. SARASWAT, D. MOHANTA and E. RAJENDRA KUMAR
IPR/TR-504/2018 (AUGUST, 2018)

A Study of Factors Affecting Temperature Diagnostic on Copper Block at the High Heat Flux Test Facility in IPR
VINAY MENON, MOHIT SHARMA, SAMIR KHIRWADKAR, KEDAR BHOPE, SUNIL BELSARE,
SUDHIR TRIPATHI, NIKUNJ PATEL, MAYUR MEHTA, PRAKASH MOKARIA, TUSHAR PATEL,
RAJAMANNAR SWAMY and KALPESH GALODIYA
IPR/TR-505/2018 (AUGUST, 2018)

Modelling and Piping Flexibility Analysis Report of Experimental Helium Cooling Loop (EHCL)
ADITYA KUMAR VERMA, BRIJESH YADAV, ANKIT GANDHI, ABHISHEK SARASWAT, SHRIKANT
VERMA, UNNATI PATEL and E. RAJENDRA KUMAR
IPR/TR-506/2018 (AUGUST, 2018)

SST-1 Central Control System (CCS) Operation Handbook
HITESH GULATI, KIRTI MAHAJAN, HARISH MASAND, AVEG KUMAR, KIRIT PATEL, MANISHA
BHANDARKAR, HITESH CHUDASMA, JASRAJ DHONGDE and D. RAJU
IPR/TR-507/2018 (AUGUST, 2018)

Development of Digital Control System in LabVIEW for Stepper Motor Drives
R. SINGH, R. SUGANDHI, G. KAUR, D. TRIVEDI, P. SRIVASTAV and L. M. AWASTHI
IPR/TR-508/2018 (AUGUST, 2018)

Operation of High Heat Flux Test Facility
SUNIL BELSARE, SAMIR KHIRWADKAR, RAJAMANNAR SWAMY, KEDAR BHOPE, TUSHAR PATEL,
PRAKASH MOKARIA, SUDHIR TRIPATHI, KALPESH GALODIYA, NIKUNJ PATEL, PRIYANKA
PATEL and MAYUR MEHTA
IPR/TR-509/2018 (SEPTEMBER 2018)

3D Thermo-fluid Magneto Hydrodynamic Analysis for Pb-Li flow inside the LLCB TBM
A. PATEL, S. RANJITHKUMAR, R. BHATTACHARYAY, D. SHARMA, P. CHAUDHURI, P.
SATYAMURTHY, H. L. SWAMI and C. DANANI
IPR/TR-510/2018 (SEPTEMBER 2018)

Power Load Estimation on ROBIN Source and Accelerator Grids using Water Calorimetry
KAUSHAL PANDYA, MAHENDRAJIT SINGH, AGRAJIT GAHLAUT, RATNAKAR YADAV, MANAS
BHUYAN, HIMANSHU TYAGI, MAHESH VUPPUGALLA, KARTIK PATEL, BHAVESH PRAJAPATI,
JIGNESH BHAGORA, HIREN MISTRI, RAVI PANDEY, MAINAK BANDYOPADHYAY and ARUN
CHAKRABORTY
IPR/TR-511/2018 (SEPTEMBER 2018)

Investigation of LabVIEW and Syslog Interface using In-house Developed Generic Logging Software
G. KAUR, R. SUGANDHI, S. TRIVEDI, P. SRIVASTAV and L. M. AWASTHI
IPR/TR-512/2018 (SEPTEMBER 2018)

The Negative Ion Source; ROBIN Performance in Terms of Negative Ion Current Density and Electron to Ion
Ratio and Impurities Impact on Surface Production of Negative Ions

KAUSHAL PANDYA, AGRAJIT GAHLAUT, RATNAKAR YADAV, MANAS BHUYAN, MAINAK BANDYOPADHYAY, V. MAHESH, HIMANSHU TYAGI, K. G. PARMAR, BHAVESH PRAJAPATI, KARTIK PATEL, JIGNESH BHAGORA, HIREN MISTRI, RAVI PANDEY, M. J. SINGH and ARUN CHAKRABORTY

IPR/TR-513/2018 (OCTOBER 2018)

Discrete Element Simulation to Study Mechanical Behaviors of Lithium Ceramic Breeder Pebble Beds

MAULIK PANCHAL, PARITOSH CHAUDHURI, CHUNBO ZHANG and ALICE YING

IPR/TR-514/2018 (OCTOBER 2018)

Microcontroller based High Voltage, High Speed, Trigger Control Circuit for SMARTEX-C

MINSHA SHAH, HITESH MANDALIYA, LAVKESH LACHHVANI, MANU BAJPAI and RACHANA RAJPAL

IPR/TR-515/2018 (OCTOBER 2018)

Engineering Analysis of ITER Divertor

VINAY MENON, DEEPU KRISHNAN, SHOBHIT TRAPASYA and S. S. KHIRWADKAR

IPR/TR-516/2018 (NOVEMBER 2018)

Integration of additional 128 channels for RF power measurement in LHCD DAC with MDSplus data archival system

RAMESH JOSHI, CHETAN VIRANI, KIRAN AMBULKAR and P. K. SHARMA

IPR/TR-517/2018 (NOVEMBER 2018)

Design & Characterization of the IF Receiver System (1-20 GHz) for D-Band Radiometer System (130-170 GHz)

ABHISHEK SINHA and SURYA K. PATHAK

IPR/TR-518/2018 (NOVEMBER 2018)

Estimation of Optical Constants of a Metal Substrate using Principal Angle of Incidence Method

ASHA ADHIYA and RAJWINDER KAUR

IPR/TR-519/2018 (NOVEMBER 2018)

Remote Control of the NBI Cryogenics Utility

VISHNU PATEL

IPR/TR-520/2018 (NOVEMBER 2018)

Characteristics of Arbitrary Ramp Generator: A tuning voltage setup for the FMCW Reflectometer

GIBIN CHACKO GEORGE, BITTU N., JJU BUCH, A. AMALIN PRINCE, NEENA GOVEAS and SURYA K. PATHAK

IPR/TR-521/2018 (NOVEMBER 2018)

Monitoring and Control PLC via Web Access using EPICS IOC for ICRH DAC

RAMESH JOSHI, H. M. JADAV, SUNIL KUMAR and HIGH POWER ICRH SYSTEMS DIVISION

IPR/TR-522/2018 (NOVEMBER 2018)

Design of a Mechanical Heat Switch for Low Temperature Application

PARTH SATHAVARA, J. MISHRA, P. M. PANCHAL, S. MUKHERJEE, P. NAYAK, V. GUPTA, A. R. PATEL and R. GANGRADEY

IPR/TR-523/2018 (DECEMBER 2018)

Development of Rapid Thermal Processing (RTP) Vacuum Furnace

SAGAR AGRAWAL

IPR/TR-524/2018 (DECEMBER 2018)

Dimensional Inspection of Tungsten Monoblock Divertor Assembly using Articulated co-ordinate Measuring Machine

KEDAR BHOPE, MAYUR MEHTA, SAMIR KHIRWADKAR, SUDHIR TRIPATHI and NIKUNJ PATEL

IPR/TR-525/2018 (DECEMBER 2018)

Access MODBUS supported devices using EPICS environment for ICRH DAC

RAMESH JOSHI, H. M. JADAV, SUNIL KUMAR and HIGH POWER ICRH SYSTEMS DIVISION

IPR/TR-526/2019 (JANUARY 2019)

Gas Fuelling Control System of ADITYA Upgrade Tokamak
N. C. PATEL, C. CHAVDA, K. A. JADEJA, K. M. PATEL, S. B. BHATT, J. GHOSH, R. L. TANNA and THE
ADITYA -U TEAM
IPR/TR-527/2019 (JANUARY 2019)

Study on Joining of Dissimilar Materials using Electro Magnetic Pulse Welding technique and weld joint
characterization
BHARATKUMAR DOSHI, PARITOSH CHAUDHURI and RAJESH KUMAR
IPR/TR-528/2019 (JANUARY 2019)

Thermo-Structural Analysis of SST-1 Cryopump
VISHAL GUPTA, VIPUL L. TANNA, RANJANA GANGRADEY, SAMIRAN SHANTI MUKHERJEE,
JYOTI SHANKAR MISHRA, PARESH PANCHAL and PRATIK A. NAYAK
IPR/TR-529/2019 (JANUARY 2019)

The Operation, Control, Data Acquisition System of ASDEX Pressure Gauge for Neutral Pressure
KIRAN PATEL, K. A. JADEJA, H. C. JOSHI and J. GHOSH
IPR/TR-530/2019 (JANUARY 2019)

IoT based Online Fault Notifier Device
FIROZKHAN S. PATHAN, D. C. RAVAL and ZIAUDDIN KHAN
IPR/TR-531/2019 (FEBRUARY 2019)

Design, Simulation, Testing & Installation of Wave Collection and Transport System for Michelson
Interferometer Diagnostic at SST-1 Tokamak
ABHISHEK SINHA, SONAM SHARMA and S. K. PATHAK
IPR/TR-532/2019 (FEBRUARY 2019)

Standard Operation Procedures (SOP) of Signal Conditioning Electronics for Steady State Superconducting
Tokamak-1 (SST-1) Plasma Diagnostics
MINSHA SHAH, PRAVEENLAL EDAPPALA, PRAMILA and PRAVEENA KUMARI
IPR/TR-533/2019 (FEBRUARY 2019)

SST-1 Data Acquisition System Operation Handbook
IMRAN MANSURI, ATISH SHARMA, TUSHAR RAVAL and MANIKA SHARMA
IPR/TR-534/2019 (FEBRUARY 2019)

Multiphysics Analysis of the Passive Active Multijunction (PAM) Launcher for LHCD System of ADITYA-
Upgrade Tokamak
YOGESH M. JAIN, P. K. SHARMA and HARISH V. DIXIT
IPR/TR-535/2019 (FEBRUARY 2019)

Aditya UpGradation- Equilibrium Study
DEEPTI SHARMA, R. SRINIVASAN, JOYDEEP GHOSH, P. CHATTOPADHYAY AND ADITYA TEAM
IPR/TR-536/2019 (FEBRUARY 2019)

Conceptual Design of Neutron Activation System for in LLCB TBM
S. TIWARI, ARVIND KUMAR, DEEPAK SHARMA, VILAS CHAUDHARI, ATIK MISTRY, H. L. SWAMI,
C. DANANI and E. RAJENDRA KUMAR
IPR/TR-537/2019 (FEBRUARY 2019)

Development of Online Annual Performance Appraisal Report (APAR) System for IPR
HEMANT JOSHI, SHARAD JASH and R. GANESH
IPR/TR-538/2019 (FEBRUARY 2019)

Machine Control System for Large Volume Plasma Device: Current Status and Future Directions
R. SUGANDHI, P. K. SRIVASTAVA, P. SRIVASTAV, A. K. SANYASI and L.M. AWASTHI
IPR/TR-539/2019 (MARCH 2019)

Design of Feedback controlled Steerable ECRH Launcher
HARDIK MISTRY, HARSHIDA PATEL, JATIN PATEL, DHARMESH PUROHIT, K.G. PARMAR, M.
KUSHWAH and B. K. SHUKLA
IPR/TR-540/2019 (MARCH 2019)