

TECHNICAL REPORTS (TR) 2014-15

Installation and Testing of 220V, 1500A DC Power Supply at IPR
DEVEN KANABAR, SWATI ROY and SUBRATA PRADHAN
IPR/TR-278/2014 (APRIL 2014)

Simulation Studies for the Deformation in Metal Gaskets for UHV Application
SHISHIR PUROHIT and B RAMESH KUMAR
IPR/TR-279/2014 (ARRIL 2014)

Development, Testing and Integration with DAC of 14 Volt, 450 Ampere DC Regulated Filament Power Supply for 200 kW, 91.2 MHz CWRF Amplifier
BHAVESH R KADIA, KIRIT PARMAR, YSS SRINIVAS, H. M. JADAV, AZAD MAKWANA, S.V. KULKARNI & ICRH GROUP
IPR/TR-280/2014 (MAY 2014)

Design & Simulation of Low Loss Circular Corrugated Waveguide for High Power 42 GHz, 200 kW Gyrotron
JINAL A. MISTRY, SHAIK EJAZUDDIN, S. V. KULKARNI and ICRH GROUP
IPR/TR-281/2014 (MAY 2014)

Design & Simulation of Double Disc Sapphire RF Window for High Power 42 GHz, 200 kW Gyrotron
JINAL A. MISTRY, SHAIK EJAZUDDIN, S. V. KULKARNI and ICRH GROUP
IPR/TR-282/2014 (MAY 2014)

Development of Plasma Aluminizing Process for Inconel (IN 718) Alloys
N. I. JAMNAPARA, S. MUKHERJEE, S. VENUGOPAL, R. S. RANE, N. L. CHAUHAN, S. B. GUPTA, N. VAGHELA, K. KALARIA, B. K. PATEL, C. CHAVDA, N. C. PATEL
IPR/TR-283/2014 (MAY 2014)

Design & Simulation of RF Coaxial Vacuum Window for ICRH System for Tokamak Aditya
SANKET CHAUDHARY, EJAZUDDIN SHAIK, ATUL VARIA, S.V. KULKARNI and ICRH GROUP
IPR/TR-284/2014 (MAY 2014)

Design & Analysis of RF Switch and Impedance Matching in T-Junction Transmission Line
SANKET V CHAUDHARY, ATUL VARIA, EJAZUDDIN SHAIK, S V KULKARNI and ICRH GROUP
IPR/TR-285/2014 (MAY 2014)

Design & Analysis of RF Window for 10GHz Realistic Magnetron Coupling
SANKET V CHAUDHARY, EJAZUDDIN SHAIK, S V KULKARNI and ICRH GROUP
IPR/TR-286/2014 (MAY 2014)

Design & Simulation of Single Disc Diamond Window for High Power 42 GHz, 200 kW Gyrotron
JINAL A. MISTRY, SHAIK EJAZUDDIN, S.V. KULKARNI & ICRH GROUP
IPR/TR-287/2014 (MAY 2014)

Conditioning of SST-1 Tokamak Vacuum Vessel by Baking and Glow Discharge Cleaning
ZIAUDDIN KHAN, SIJU GEORGE, PRATIBHA SEMWAL, KALPESH R. DHANANI,
FIROZKHAN S. PATHAN, YUVAKIRAN PARAVASTU, D. C. RAVAL, GATTU R. BABU, M.S.
KHAN and SUBRATA PRADHAN
IPR/TR-288/2014 (MAY 2014)

Development of Atmospheric Pressure Plasma System to Improve Adhesion between Fabric and Coating
R. RANE, A.VAID, N.CHANDWANI, S.MUKHERJEE, M.PARIKH, S.BASU, and S.K.NEMA
IPR/TR-289/2014 (MAY 2014)

Theoretical Calculation and Analysis Modelling for the Effective Thermal Conductivity of Lithium Metatitanate Pebble Bed
MAULIK PANCHAL, A. SHRIVASTAVA, P. CHAUDHURI, and E. RAJENDRAKUMAR
IPR/TR-290/2014 (MAY 2014)

Material Surface Characterization Facilities at FCIPT
ALPHONSA JOSEPH, PURVI KIKANI, NIRAV JAMNAPARA, MUKESH RANJAN, C.
BALASUBRAMANIAN and S. MUKHERJEE
IPR/TR-291/2014 (JUNE 2014)

DAC Controlled Voltage Variable RF Attenuator for Generating RF Pulses of Different Shapes and Amplitudes for ICRH System
MANOJ SINGH, HM JADAV, RAMESH JOSHI, SUNIL KUMAR, SRINIVAS YSS, SV
KULKARNI, and RF-ICRH GROUP
IPR/TR-292/2014 (JUNE 2014)

GPIB Based Instrumentation and Control System for ADITYA Thomson Scattering Diagnostic
KIRAN PATEL, MAULIK SUTHAR, VISHNU CHAUDHARI, JINTO THOMAS, NEHA SINGH,
VISHAL PILLAI, and AJAI KUMAR
IPR/TR-293/2014 (JUNE 2014)

Data Acquisition, Control and Operation of Diagnostics and Vacuum Interface Sections of ICRH-RF systems on SST-1
H. M. JADAV, MANOJ SINGH, RAMESH JOSHI, ATUL VARIA, A. GAYATRI, S.V.
KULKARNI and ICRH-RF GROUP
IPR/TR-294/2014 (JULY 2014)

Up gradation of Fiber Optic based Analog Signal Link for ECRH system of SST
HARSHIDA PATEL, POONAM SINGH, SWETA SIDDHPURA, B. K. SHUKLA, JATIN PATEL,
N. RAJAN BABU, PRAGNESH DHORAJIYA and CHETAN VIRANI
IPR/TR-295/2014 (JULY 2014)

Experimental and Monte-Carlo Absolute Efficiency Calibration of HPGe γ -ray Spectrometer for Application in Neutron Activation Analysis
SHAILJA TIWARI, S. JAKHAR, M.ABHANGI, R. MAKWANA, V. CHAUDHARI, C.V.S. RAO,
T. K. BASU
IPR/TR-296/2014 (JULY 2014)

Developments toward Remote Metrology for SST1 Vacuum Vessel using Close Range Digital Photogrammetry

GATTU RAMESH BABU, ZIAUDDIN KHAN and SUBRATA PRADHAN

IPR/TR-297/2014 (JULY 2014)

Investigations of the Inspection Possibilities of Curved Cu-W Monoblock Assembly Using Ultrasonic Phased Array

KEDAR BHOPE, MAYUR MEHTA, and S.S.KHIRWADKAR

IPR/TR-298/2014 (AUGUST 2014)

Report on Ultrasonic Inspection and Microhardness testing on High Heat Flux tested Cu-W Monoblocks

KEDAR BHOPE, MAYUR MEHTA, CHARU LATA DUBE, M.S.KHAN, and S.S.KHIRWADKAR

IPR/TR-299/2014 (AUGUST 2014)

480 A DC Power Supply Validation with High TC Based Superconducting Load

UPENDRA PRASAD, PIYUSH RAJ, A.PANCHAL, A.BANO, P.VARMORA, D.KANWAR and S.PRADHAN

IPR/TR-300/2014 (AUGUST 2014)

Pb-Li Loop for testing Liquid Metal Diagnostics

S. SAHU, R. BHATTACHARYAY, A. DEOGHAR, A. PRAJAPATI, S. GUPTA, and S. VERMA

IPR/TR-301/2014 (AUGUST 2014)

Development of Micro-controller based EMCCD Camera

VISHNU CHAUDHARI, and AJAI KUMAR

IPR/TR-302/2014 (AUGUST 2014)

Study on Plasma Gasification of Petroleum Waste in to Syn-Gas

A. SANGHARIYAT, P. V. MURUGAN, B.K. PATEL, C. PATIL, V. CHAUHAN, V. JAIN, S. MUKHERJEE, and S.K. NEMA

IPR/TR-303/2014 (SEPTEMBER 2014)

Control and Data Acquisition System for Characterization of Microwave Components for ECE Diagnostics in ITER-India Lab

JIGNESH PATEL, PRAVEENA KUMARI, VISMAYSINH RAULJI, SUMAN DANANI, and RACHANA RAJPAL

IPR/TR-304/2014 (SEPTEMBER 2014)

Detection and Mitigation of Electro-magnetic Interference Noise to Enhance Detection Sensitivity of SST-1 Thomson Scattering System

VISHNU CHAUDHARI, KIRAN PATEL, JINTO THOMAS and AJAI KUMAR

IPR/TR-305/2014 (SEPTEMBER 2014)

Steady State CFX and Structural Analysis of the ITER-like Shield Blanket Module First Wall Mock Up

RITESH KUMAR SRIVASTAVA and PARITOSH CHAUDHURI

IPR/TR-306/2014 (SEPTEMBER 2014)

Design, Fabrication and Testing of Variable di/dt, (10MA/sec max) Current Pulse Generation System for SST-1 Rogowski Calibration

Y.S.S. SRINIVAS, M.V. GOPALA KRISHNA, BHAVESH KADIA, SAMEER KUMAR,
E.V. PRAVEEN LAL, D. RAJU, S.V. KULKARNI, and R. JHA
IPR/TR-307/2014 (SEPTEMBER 2014)

Slowing and Stopping of Wave in Dispersive Metamaterial Loaded Helical Guide

DUSHYANT K. SHARMA, and SURYA K. PATHAK
IPR/TR-308/2014 (SEPTEMBER 2014)

Commissioning of Integrated Power Supply (15kV, 28A and three auxiliary supplies) for Testing of 200kW stage CWRP Amplifiers

BHAVESH R KADIA, Y.S.S. SRINIVAS, KIRIT M PARMAR, H. M. JADAV, RAMESH JOSHI,
SUNIL KUMAR, S. V. KULKARNI, and ICRH GROUP
IPR/TR-309/2014 (SEPTEMBER 2014)

Measurement of Threshold Voltage during Vacuum Arc on Satellite Solar Panel Coupons in Laboratory

R. JOSHI and S. B. GUPTA
IPR/TR-310/2014 (OCTOBER 2014)

Development of an ESD Detection and Characterization Facility for Space like LEO and GEO Environment

S. B. GUPTA, K. R. KALARIA, N. P. VAGHELA, R. S. JOSHI, S. MUKHERJEE, S. E. PUTHANVEETIL, M. SHANKARAN and R.S. EKKUNDI
IPR/TR-311/2014 (OCTOBER 2014)

Behavior of Arc Current Waveform on Satellite Solar Panels and its Dependence on Arc Location, Dissipated Charge and Irradiation Time

RASHMI S. JOSHI, and SURYAKANT B. GUPTA
IPR/TR-312/2014 (OCTOBER 2014)

Calorimetric Pulse Power Measurement Technique for High Power Gyrotrons

HARSHIDA PATEL, B. K. SHUKLA, PRAGNESH DHORAJIYA, RAJAN BABU, JATIN PATEL,
MIKHAIL SHMELEV, YURY BELOV, R. JHA, and D. BORA
IPR/TR-313/2014 (OCTOBER 2014)

An update of spacecraft charging research in India: Spacecraft Plasma Interaction eXperiments - SPIX- II

SURYAKANT B. GUPTA, S. MUKHERJEE, KEENA R. KALARIA, NARESH P. VAGHELA,
RASHMI S. JOSHI, SURESH E. PUTHANVEETIL, M. SANKARAN AND RANGANATH S. EKKUNDI
IPR/TR-314/2014 (NOVEMBER 2014)

Amendment of Signal Conditioning System for Neutral Beam Injector of SST-1

KARISHMA QURESHI, P. J. PATEL, L. K. BANSAL, P. BHARATHI, S. L. PARMAR, L. N. GUPTA, VIJAY VADHER, DIPAL THAKKAR, C. B. SUMOD, B. CHOKSI, S. SHARMA, M. R. JANA, V. PRAHLAD and U. K. BARUAH
IPR/TR-315/2014 (NOVEMBER 2014)

Experimental Study for Water and Ferritic Steel Shielding Properties with 14MeV Neutron Irradiation of Double Wall Shell

S. JAKHAR, B. RAMESH KUMAR, R. MAKWANA, M. ABHANGI, C. V. S. RAO and T. K. BASU

IPR/TR-316/2014 (NOVEMBER 2014)

Coolant Calorimetry Set-Up Developed for the High Heat Flux Test Facility at IPR

YASHASHRI PATIL, S. S. KHIRWADKAR, SUNIL BELSARE, RAJAMANNAR SWAMY, SUDHIR TRIPATHI, and KEDAR BOPE

IPR/TR-317/2014 (NOVEMBER 2014)

Magnetic Field Analyses, Fabrication and Validation of Mono-Filamentary MgB₂ based Racetrack Coil

ANANYA KUNDU, PIYUSH RAJ, UPENDRA PRASAD, ARUN PANCHAL, ANEES BANO, PANKAJ VARMORA, SUBRAT KUMAR DAS, NITISH KUMAR, DHAVAL BHAVSAR, and SUBRATA PRADHAN

IPR/TR-318/2015 (JANUARY 2015)

Development of Tangential View Far Infrared Interferometer for SST-1

RAJWINDER KAUR, ASHA ADHIYA, PABITRA KUMAR MISHRA, SWADESH PATNAIK, and SHRISHAIL PADASALAGI

IPR/TR-319/2015 (JANUARY 2015)

Testing of Process Sensors for High-Temperature & High-Pressure Liquid-Metal Applications

A. SARASWAT, S. SAHU, A.K. PRAJAPATI, S. GUPTA, T. S. RAO, R. P. BHATTACHARYAY, and P. DAS

IPR/TR-320/2015 (JANUARY 2015)

LSPR Anisotropy in Template Aligned Silver Nanoparticles: A Case of Biaxial Metal Optics

MUKESH RANJAN, MUKUL BHATNAGAR, and S. MUKHERJEE

IPR/TR-321/2015 (JANUARY 2015)

Interface of LHE Level Monitor as an Interlock with Quench Detection System for the Gyrotron Magnet System

MONI BANAUDHA, YOHAN KHRISTI, PIYUSH RAJ, and SUBRATA PRADHAN

IPR/TR-322/2015 (JANUARY 2015)

Silver Nanoparticle on GaSb Nanodot: A LSPR Boosted Binary Platform for Broadband Light Harvesting and SERS

MUKUL BHATNAGAR, MUKESH RANJAN, and SUBROTO MUKHERJEE

IPR/TR-323/2015 (JANUARY 2015)

Experimental Validation of Negative Refraction of Novel Single-Sided FF-Shaped Metamaterial

DUSHYANT KUMAR SHARMA, JJU BUCH, and SURYA KUMAR PATHAK

IPR/TR-324/2015 (FEBRUARY 2015)

Design and Development of a 200kV, 15mA High Voltage DC Test Generator
AMAL S, URMIL M THAKER, KUMAR SAURABH, and UJJWAL K BARUAH
IPR/TR-325/2015 (FEBRUARY 2015)

Design, Implementation and Optimization of Gigabit Ethernet Network for I&C Interfacing at High Heat Flux Test Facility
R. SUGANDHI, T. PATEL, R.ROSHAN, I. ANTWALA, and S. KHIRWADKAR
IPR/TR-326/2015 (FEBRUARY 2015)

Frequency Sweep Linearization of Scanned Frequency Reflectometer System for Plasma Density Profile Measurement
N.Y. JOSHI, J.J.U. BUCH, and S.K. PATHAK
IPR/TR-327/2015 (FEBRUARY 2015)

Determination of Heat Transfer Effectiveness of Thermal Insulating Materials for High Temperature Process Pipes
ADITYA KUMAR VERMA, S. VERMA, A. SARASWAT, J. CHAUHAN, E. R. KUMAR, and K.N.VYAS
IPR/TR-328/2015 (MARCH 2015)

Nuclear Performance Analyses of Indian LLCB TBM Set for ITER: Conceptual Design
H L SWAMI, A K SHAW, and C DANANI
IPR/TR-329/2015 (MARCH 2015)

Design and Development of Extremely Low Ripple and Highly Stabilised DC Power Supply Rated for 30V, 300A
AZADSINH MAKWANA, CHIRAGKUMAR DODIYA, BHADRESH PARGHI, and SUBRATA PRADHAN
IPR/TR-330/2015 (MARCH 2015)

State Feedback Control of Chopper Fed DC Motor using Linear Quadratic Regulator Method in MATLAB-SIMULINK
AMIT K SRIVASTAVA, ARNAB DAS GUPTA, NITYA SRIVASTAVA, and ZIAUDDIN KHAN
IPR/TR-331/2015 (MARCH 2015)

Development of PXI based Data Acquisition and Control (DAC) system for RF-ICRH system
MANOJ SINGH, HM JADAV, RAMESH JOSHI, YSS SRINIVAS, SUNIL KUMAR, SV KULKARNI, and RF-ICRH GROUP
IPR/TR-332/2015 (MARCH 2015)

Design and Development of PLC based DAC for 45.6 MHz, 100kW ICRH system using EPICS and MODBUS/TCP
RAMESH JOSHI, H M JADAV, YSS SRINIVAS, SUNIL KUMAR, and S.V. KULKARNI
IPR/TR-333/2015 (MARCH 2015)

Experimental Test Set up To Evaluate Spring Back in Superconducting CICC's at Room Temperature
ARUN PANCHAL, MAHESH GHATE, DHAVALBHAVSAR, and SUBRATA PRADHAN
IPR/TR-334/2015 (MARCH 2015)

Application of Articulated Absolute Co-ordinate Measuring Machine for Quality Control in Fabrication of Radial Plates

DHAVAL BHAVSAR, MAHESH GHATE, ARUN PANCHAL, and SUBRATA PRADHAN
IPR/TR-335/2015 (MARCH 2015)

Development of Hardware for Liquid Flow Measurement with LabVIEW

AMIT KUMAR SRIVASTAVA, SURYAKANT B. GUPTA, and DIPAK ADHYARU
IPR/TR-336/2015 (MARCH 2015)

Design, Fabrication and Development of Lab Scale Vacuum Heat Treatment Furnace

DHAVAL BHAVSAR, PIYUSH RAJ, MAHESH GHATE, CHIRAG DODIYA, and SUBRATA PRADHAN
IPR/TR-337/2015 (MARCH 2015)