

## RESEARCH REPORTS (RR) 2018-19

A TIME-DELAY MODEL FOR PRE-FILL PRESSURE IN TOKAMAKS

RAJIV GOSWAMI and K. A. JADEJA

IPR/RR-973/2018      APRIL 2018

ROLE OF SURFACE ROUGHNESS FOR GRAPHITE COATING ON COPPER, TUNGSTEN AND SS SUBSTRATE USING MAGNETRON SPUTTERING TECHNIQUE

PRIYANKA PATEL, K. P. SINGH and S. S. KHIRWADKAR

IPR/RR-974/2018      APRIL 2018

NONLINEAR DYNAMICS OF RELATIVISTICALLY INTENSE CYLINDRICAL AND SPHERICAL PLASMA WAVES

ARGHYA MUKHERJEE and SUDIP SENGUPTA

IPR/RR-975/2018      APRIL 2018

RECENT ACTIVITIES ON SST-1 AND ADITYA-U TOKAMAKS

P. K. SHARMA, YOGESH M. JAIN, K. K. AMBULKAR, P. R. PARMAR, C. G. VIRANI, S. DALAKOTI, A. L. THAKUR, J. KUMAR, D. RAJU, J. GHOSH, SST-1 and ADITYA-U TEAM

IPR/RR-976/2018      APRIL 2018

HIGH HEAT FLUX TESTING OF ATMOSPHERIC PLASMA SPRAYED THICK TUNGSTEN COATING ON STRUCTURAL AND HEAT SINK MATERIAL

S. KANPARA, G. SIVAKUMAR, S. KHIRWADKAR, D. SRINIVASA RAO, V. KRISHNA, S. BELSARE, K. BHOPE, R. SWAMY, S. TRIPATHY, V. MENON, P. MOKARIYA, N. PATEL, T. PATEL, M. MEHTA, K. GALODIYA, E. RAJENDRA KUMAR, A. SIRCAR and S. SAM

IPR/RR-977/2018      APRIL 2018

FAST IGNITION LASER FUSION USING IN-SITU ION ACCELERATION WITH PULSED CO<sub>2</sub> LASERS

ATUL KUMAR, CHANDRASEKAR SHUKLA, PREDHIMAN KAW and AMITA DAS

IPR/RR-978/2018      MAY 2018

SPIRAL WAVES IN DRIVEN STRONGLY COUPLED YUKAWA SYSTEMS

SANDEEP KUMAR and AMITA DAS

IPR/RR-979/2018      MAY 2018

DEVELOPMENT OF IPR INTERFACE CODE FOR SHUTDOWN DOSE RATE ESTIMATION IN FUSION SYSTEM (IICSF)

A. K. SHAW, H. L. SWAMI, D. AGGARWAL and C. DANANI

IPR/RR-980/2018      MAY 2018

ELECTRON SHEATH EVOLUTION CONTROLLED BY A MAGNETIC FIELD IN MODIFIED HOLLOW CATHODE GLOW DISCHARGE

R. RANE, S. CHAUHAN, P. BHARATHI, K. NIGAM, P. BANDYOPADHYAY and S. MUKHERJEE

IPR/RR-981/2018      MAY 2018

EFFECT OF PARALLEL CONNECTION LENGTH ON THE PROPERTIES OF A LOW TEMPERATURE PLASMA CONFINED IN A SIMPLE MAGNETIZED TORUS

UMESH KUMAR, R. GANESH, Y. C. SAXENA, SHEKAR G. THATIPAMULA and D. RAJU

IPR/RR-982/2018      MAY 2018

COMPARISON OF PIPE STRESS ANALYTICAL CALCULATIONS WITH CAESAR-II RESULTS

ADITYA KUMAR VERMA

IPR/RR-983/2018      MAY 2018

SPECTROSCOPIC INVESTIGATION OF CARBON DIMER FORMATION IN LATERALLY COLLIDING CARBON PLASMAS

ARVIND KUMAR SAXENA, R. K. SINGH, H. C. JOSHI, and AJAI KUMAR

IPR/RR-984/2018      MAY 2018

MONTE CARLO BASED TRANSPORT METHOD TO REPRODUCE THE TRUE SPECTRUM OF CHARGED PARTICLES IN TARGET FOILS

MAYANK RAJPUT, P. V. SUBHASH, P. KANTH, S. VALA and R. SRINIVASAN

IPR/RR-985/2018      MAY 2018

EXCITATION OF KdV ALFVEN SOLITONS BY A PULSED CO<sub>2</sub> LASER IN PLASMA IN THE PRESENCE OF AN EXTERNAL MAGNETIC FIELD

ATUL KUMAR, CHANDRASEKAR SHUKLA, DEEPA VERMA, AMITA DAS and PREDHIMAN KAW

IPR/RR-986/2018      MAY 2018

GLOBAL MODEL OF A DC DISCHARGE PRODUCED USING CYLINDRICAL AND CONICAL HOLLOW CATHODES

M. P. BHUVA, A. K. PANDEY and S. K. KARKARI

IPR/RR-987/2018      MAY 2018

3D DEVICE SIMULATIONS OF TOROIDAL NON-NEUTRAL PLASMA EXPERIMENTS WITH PEC3PIC - A NEW 3D PIC-MCC CODE

M. SENGUPTA and R. GANESH

IPR/RR-988/2018      MAY 2018

CHARACTERIZATION OF ARGON PLASMA IN A VARIABLE MULTI-POLE LINE CUSP MAGNETIC FIELD (VMMF) CONFIGURATION

A. D. PATEL, M. SHARMA, N. RAMASUBRAMANIAN and J. GHOSH

IPR/RR-989/2018      MAY 2018

A WASHER GUN PLASMA SYSTEM FOR MICROWAVE PLASMA INTERACTION EXPERIMENTS

V. P. ANITHA, PRIYAVANDANA J. RATHOD, JAYESH RAVAL, RENU BAHL and Y. C. SAXENA

IPR/RR-990/2018      MAY 2018

PLASMA DENSITY AND ION ENERGY CONTROL VIA DRIVING FREQUENCY AND APPLIED VOLTAGE IN A LOW PRESSURE CAPACITIVELY COUPLED PLASMA DISCHARGE

SARVESHWAR SHARMA, ABHIJIT SEN, N. SIRSE, M. M. TURNER and A. R. ELLINGBOE

IPR/RR-991/2018      JUNE 2018

DEVELOPMENT OF TOMOGRAPHIC RECONSTRUCTION ALGORITHM FOR INDIAN TEST FACILITY (INTF) NEUTRAL BEAM PROFILE

D. BORAH, A. K. CHATTOPADHYAY, M. BANDYOPADHYAY and A. J. DEKA

IPR/RR-992/2018      JUNE 2018

A UNIFIED "THUMB-TEARDROP" PICTURE FOR 1D VLASOV-POISSON PLASMA

PALLAVI TRIVEDI and RAJARAMAN GANESH

IPR/RR-993/2018      JUNE 2018

OBSERVATION OF TEMPERATURE GRADIENT DRIVEN ELECTROSTATIC ION ACOUSTIC INSTABILITY IN A CROSS-FIELD DIFFUSED PLASMA

A. K. SANYASI, PRABHAKAR SRIVASTAV, P. K. SRIVASTAVA, RITESH SUGANDHI and L. M. AWASTHI

IPR/RR-994/2018      JUNE 2018

DELTA (D) FERRITE FORMATION IN THE WELDS OF ALUMINIZED 9Cr STEELS  
A. B. ZALA, N. I. JAMNAPARA, V. J. BADHEKA, C. SASMAL, S. SAM and M. RANJAN  
IPR/RR-995/2018      JUNE 2018

EXPERIMENTAL OBSERVATION OF DRIFT WAVE TURBULENCE IN AN INHOMOGENEOUS SIX-  
POLE CUSP MAGNETIC FIELD OF MPD  
A. D. PATEL, M. SHARMA, R. GANESH, N. RAMASUBRAMANIAN, and P. K. CHATTOPADHYAY  
IPR/RR-996/2018      JUNE 2018

AN INDIRECT ANALYTICAL METHOD FOR FINDING THE MAGNETIC FIELD AT ANY POINT ON  
THE AZIMUTHAL PLANE OF A CONDUCTING LOOP: A FILAMENTARY MODEL APPROACH  
SUMAN AICH and JOYDEEP GHOSH  
IPR/RR-997/2018      JUNE 2018

STUDY OF TUNGSTEN THIN FILM DEPOSITION ON GRAPHITE AND ITS CHARACTERIZATION  
A. SATYAPRASAD, N. I. JAMNAPARA, R. RANE, S. BELSARE, G. RAVI, P. KIKANI, S. KHIRWADKAR  
and S. MUKHERJEE  
IPR/RR-998/2018      JUNE 2018

ELECTROMAGNETIC FLUCTUATIONS INDUCED PARTICLE TRANSPORT IN ETG DOMINATED  
LARGE LABORATORY PLASMA  
PRABHAKAR SRIVASTAV, RAMESWAR SINGH, L. M. AWASTHI, A. K. SANYASI, P. K. SRIVASTAVA,  
RITESH SUGANDHI and R. SINGH  
IPR/RR-999/2018      JUNE 2018

PLASMA CHARACTERIZATION OF A MICROWAVE DISCHARGE ION SOURCE WITH MIRROR  
MAGNETIC FIELD CONFIGURATION  
CHINMOY MALLICK, MAINAK BANDYOPADHYAY and RAJESH KUMAR  
IPR/RR-1000/2018      JULY 2018

EFFECT OF AMBIENT GAS PRESSURE ON NANOSECOND LASER PRODUCED PLASMA ON NICKEL  
THIN FILM IN A FORWARD ABLATION GEOMETRY  
JINTO THOMAS, HEM CHANDRA JOSHI, AJAI KUMAR and REJI PHILIP  
IPR/RR-1001/2018      JULY 2018

CONTROL SYSTEM DESIGN FOR TOKAMAK REMOTE MAINTENANCE OPERATIONS USING  
ASSISTED VIRTUAL REALITY AND HAPTIC FEEDBACK  
NAVEEN RASTOGI and AMIT KUMAR SRIVASTAVA  
IPR/RR-1002/2018      JULY 2018

DAQ & CONTROL SYSTEM DESIGN FOR Pb-Li PURIFICATION EXPERIMENTAL FACILITY  
ABHISHEK SARASWAT, ANKUSH V. DEOGHAR and R. BHATTACHARYAY  
IPR/RR-1003/2018      JULY 2018

USING DEEP NEURAL NETWORKS FOR VISUAL SERVO OF TOKAMAK RH SYSTEMS  
PRAMIT DUTTA and AMIT KUMAR SRIVASTAVA  
IPR/RR-1004/2018      JULY 2018

EXPERIMENTAL STUDY OF DIFFERENT JOINT CONFIGURATIONS OF HTS BSCCO (BISMUTH  
STRONTIUM CALCIUM COPPER OXIDE) TAPE  
UPENDRA PRASAD, ANEES BANO, R. SRINIVASAN and MAGNET SYSTEM DIVISION  
IPR/RR-1005/2018      AUGUST 2018

SOLITARY AND SHOCK WAVE IN MAGNETIZED COLLISIONAL PAIR-ION PLASMAS  
ASHISH ADAK and SUDIP SENGUPTA  
IPR/RR-1006/2018      AUGUST 2018

MICRO-DYNAMICS OF NEUTRAL FLOW INDUCED DUSTY PLASMA FLOW  
GARIMA ARORA, P. BANDYOPADHYAY, HARIPRASAD M. G. and A. SEN  
IPR/RR-1007/2018      AUGUST 2018

THE POSITIVE ION SPEED AT THE SHEATH-PLASMA BOUNDARY IN PRESENCE OF NEGATIVE ION  
EMITTING WALL  
A. K. PANDEY and S. K. KARKARI  
IPR/RR-1008/2018      AUGUST 2018

PRELIMINARY DESIGN CALCULATIONS REPORT OF EXPERIMENTAL HELIUM COOLING LOOP  
(EHCL)  
ADITYA KUMAR VERMA, ANKIT GANDHI, BRIJESH YADAV, A. SARASWAT and E. RAJENDRA  
KUMAR  
IPR/RR-1009/2018      AUGUST 2018

WHISTLER WAVE PROPAGATION AND INTERPLAY BETWEEN ELECTRON INERTIA AND LARMOR  
RADIUS EFFECTS  
GARIMA JOSHI, G. RAVI and S. MUKHERJEE  
IPR/RR-1010/2018      AUGUST 2018

DESIGN AND TEST BENCH OPERATION RESULTS OF A SOLID HYDROGEN PELLETT INJECTOR  
DEVELOPED FOR SST-1 TOKAMAK  
JYOTI SHANKAR MISHRA, RANJANA GANGRADEY, PARESH PANCHAL, SAMIRAN MUKHERJEE,  
PRATIK NAYAK, JYOTI AGARWAL, B. ARAMBADIA, V. RAULJI and R. RAJPAL  
IPR/RR-1011/2018      AUGUST 2018

A HYBRID PROBE SYSTEM FOR QUANTIFYING PLASMA PARAMETERS IN A 13.56 MHz  
CAPACITIVE COUPLED MAGNETIZED PLASMA  
J. K. JOSHI, S. BINWAL, S. K. KARKARI and SUNIL KUMAR  
IPR/RR-1012/2018      AUGUST 2018

PRELIMINARY STUDIES ON EVALUATION OF ELASTIC PROPERTIES OF DIVERTOR MATERIALS  
USING ULTRASONIC VELOCITY MEASUREMENT  
KEDAR BHOPE, MAYUR MEHTA, SAMIR KHIRWADKAR and SHAILESH KANPARA  
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EXPERIMENTAL STUDIES OF TWO PHASE FLOW CHARACTERISTICS AND VOID FRACTION  
PREDICTIONS IN STEADY STATE HORIZONTAL TWOPHASE NITROGEN FLOW  
GAURAV SINGH, SUBRATA PRADHAN and VIPUL TANNA  
IPR/RR-1014/2018      SEPTEMBER 2018

PULSE WIDTH DEPENDENT DYNAMICS OF LASER INDUCED PLASMA FROM A Ni THIN FILM  
JINTO THOMAS, HEM CHANDRA JOSHI, AJAI KUMAR and REJI PHILIP  
IPR/RR-1015/2018      SEPTEMBER 2018

STATIONARY BERNSTEIN-GREENE-KRUSKAL STRUCTURES IN A CURRENT CARRYING  
RELATIVISTIC COLD PLASMA  
ROOPENDRA SINGH RAJAWAT, SUDIP SENGUPTA and NIKHIL CHAKRABARTI  
IPR/RR-1016/2018      OCTOBER 2018

INVESTIGATION OF ATOMIC AND MOLECULAR PROCESSES IN H-alpha EMISSION THROUGH  
MODELLING OF RADIAL PROFILE OF H-alpha EMISSION IN ADITYA TOKAMAK  
RITU DEY, J GHOSH, M. B. CHOWDHURI, R. MANCHANDA, NANDINI YADAV, N. RAMAIYA, S.  
BANERJEE, U. C. NAGORA, P. K. ATREY, J. V. RAVAL, Y. SHANKAR JOISA, R. L. TANNA, D. P.  
STOTLER and ADITYA TEAM  
IPR/RR-1017/2018      OCTOBER 2018

STUDY OF PLUME DYNAMICS AND PLASMA DENSITY DURING ITS EXPANSION  
G. VEDA PRAKASH, KIRAN PATEL, NARAYAN BEHERA and AJAI KUMAR  
IPR/RR-1018/2018      OCTOBER 2018

POSITIVE ION IMPEDIMENT BY SHORT-CIRCUITING EFFECT IN A MAGNETIZED PLASMA COLUMN  
S. DAS and S. K. KARKARI  
IPR/RR-1019/2018      OCTOBER 2018

SPECTROSCOPIC INVESTIGATION OF STAGNATION REGION IN LATERALLY COLLIDING PLASMAS: DEPENDENCE OF ABLATING TARGET MATERIAL AND PLASMA PLUME SEPARATION  
ALAMGIR MONDAL, BHUPESH KUMAR, R. K. SINGH, H. C. JOSHI and AJAI KUMAR  
IPR/RR-1020/2018      OCTOBER 2018

EXPERIMENTAL OBSERVATION OF A DUSTY PLASMA CRYSTAL IN THE CATHODE SHEATH OF A DC GLOW DISCHARGE PLASMA  
M. G. HARIPRASAD, P. BANDYOPADHYAY, GARIMA ARORA and A. SEN  
IPR/RR-1021/2018      NOVEMBER 2018

PROPAGATION OF LOW FREQUENCY ELECTROMAGNETIC DISTURBANCES IN PLASMA  
SHARAD KUMAR YADAV, RATAN KUMAR BERA, DEEPA VERMA, AMITA DAS and PREDHIMAN KAW  
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A UNIVERSAL MECHANISM FOR PLASMA BLOB FORMATION  
NIRMAL BISAI, SANTANU BANERJEE AND ABHIJIT SEN  
IPR/RR-1023/2018      NOVEMBER 2018

MOLECULAR DYNAMICS STUDY OF CRYSTAL FORMATION AND STRUCTURAL PHASE TRANSITION IN YUKAWA SYSTEM FOR DUSTY PLASMA MEDIUM  
SRIMANTA MAITY and AMITA DAS  
IPR/RR-1024/2018      NOVEMBER 2018

FREQUENCY AND AMPLITUDE NOISE REMOVAL USING DIGITAL SIGNAL PROCESSING TECHNIQUES FOR ESTIMATION OF BEAT FREQUENCY FROM REFLECTOMETRY DATA  
JJU BUCH, RISHABH MODI and S. K. PATHAK  
IPR/RR-1025/2018      NOVEMBER 2018

CHARACTERIZATION OF HYDROGEN PLASMA IN A PERMANENT RING MAGNET BASED HELICON PLASMA SOURCE FOR NEGATIVE ION SOURCE RESEARCH  
A. PANDEY, DEBRUP MUKHERJEE, DIPSHIKHA BORAH, M. BANDYOPADHYAY, HIMANSHU TYAGI, RATNAKAR YADAV and A. CHAKRABORTY  
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COHERENT NONLINEAR OSCILLATIONS IN MAGNETOHYDRODYNAMIC PLASMA AT ALFVEN RESONANCE  
RUPAK MUKHERJEE, RAJARAMAN GANESH and ABHIJIT SEN  
IPR/RR-1027/2018      NOVEMBER 2018

RECURRENCE IN THREE DIMENSIONAL MAGNETOHYDRODYNAMIC PLASMA  
RUPAK MUKHERJEE, RAJARAMAN GANESH and ABHIJIT SEN  
IPR/RR-1028/2018      NOVEMBER 2018

COLLECTIVE DYNAMICS OF GLOBALLY DELAYCOUPLED COMPLEX GINZBURG-LANDAU OSCILLATORS

BHUMIKA THAKUR and ABHIJIT SEN  
IPR/RR-1029/2018      NOVEMBER 2018

ZERO BIAS EMISSION CURRENT IN LASER HEATED EMISSIVE PROBE AND PROPER CHOICE OF PROBE-TIP MATERIAL

P. PANDIT(NÉE MEHTA), A. SARMA, J. GHOSH, VARA PRASAD K., N. RAMAIYA, R. MANCHANDA, SANTOSH PANDYA, M. B. CHOWDHURI and P. I. JOHN  
IPR/RR-1030/2018      DECEMBER 2018

COLLISIONLESS ABSORPTION OF SHORT LASER PULSES IN A DEUTERIUM CLUSTER: DEPENDENCE OF REDSHIFT OF RESONANCE ABSORPTION PEAK ON LASER POLARIZATION, INTENSITY AND WAVELENGTH

S. S. MAHALIK and M. KUNDU  
IPR/RR-1031/2018      DECEMBER 2018

DESIGN APPROACH FOR GRAVITY COMPENSATION OF SERIAL LINK ROBOTIC ARMS FOR FUSION APPLICATION

MANOAH STEPHEN MANUELRAJ and N. RAMASUBRAMANIAN  
IPR/RR-1032/2018      DECEMBER 2018

A NEUTRONIC EXPERIMENT TO SUPPORT THE DESIGN OF INDIAN TBM SHIELD MODULE FOR ITER

H. L. SWAMI, M. ABHANGI, SANCHIT SHARMA, S. TIWARI, A. N. MISTRY, V. VASAVA, V. MEHTA, S. VALA, C. DANANI, V. CHAUDHARI and P. CHAUDHURI  
IPR/RR-1033/2018      DECEMBER 2018

QUANTIFICATION OF ATOMIC HYDROGEN ANION DENSITY IN A PERMANENT MAGNET BASED HELICON ION SOURCE (HELEN-I) BY USING PULSED RING DOWN SPECTROSCOPY

D. MUKHOPADHYAY, A. PANDEY, M. BANDYOPADHYAY, H. TYAGI, R. YADAV and A. CHAKRABORTY  
IPR/RR-1034/2018      DECEMBER 2018

DESIGN AND DEVELOPMENT OF RESONANT CONVERTER BASED POWER SUPPLY FOR GENERATING UNDERWATER NON THERMAL DBD AIR PLASMA JET AND PRODUCING PLASMA ACTIVATED WATER (PAW)

VISHAL JAIN, ADAM SANGHARIYAT, SUDHIR KUMAR NEMA, P. BHARATHI and VIVEK AGARWAL  
IPR/RR-1035/2018      DECEMBER 2018

AIR STABLE LEAD-FREE HYBRID PEROVSKITE EMPLOYING SELF-POWERED PHOTODETECTION WITH ELECTRON/HOLE CONDUCTOR FREE DEVICE GEOMETRY

AMREEN A. HUSSAIN, AMIT K. RANA and MUKESH RANJAN  
IPR/RR-1036/2018      DECEMBER 2018

OVERVIEW OF OPERATION AND EXPERIMENTS IN THE ADITYA –U TOKAMAK

R. L. TANNA, J. GHOSH, HARSHITA RAJ, ROHIT KUMAR, SUMAN AICH, TANMAY MACWAN, D. KUMAWAT, K. A. JADEJA, K.M. PATEL, M. B. KALAL, D.S. VARIA, D. H. SADHARAKIYA, S.B. BHATT, K. SATHYANARAYANA, B. K. SHUKLA, P.K. CHATTOPADHYAY, M. N. MAKAWANA, K. S. SHAH, S. GUPTA, V. RANJAN, V. BALAKRISHNAN, C. N. GUPTA, V. K. PANCHAL, PRAVEENLAL E.V., B. ARAMBHADIYA, MINSHA SHAH, V. RAULJI, M. B. CHOWDHURI, S. BANERJEE, R. MANCHANDA, G. SHUKLA, K. SHAH, R. DEY, D. RAJU, P. K. ATREY, S. K. PATHAK, U. NAGORA, J. RAVAL, Y. S. JOISA, MANOJ KUMAR, K. TAHILIANI, S. K. JHA, M. V. GOPALKRISHANA and A. SEN  
IPR/RR-1037/2019      JANUARY 2019

PARAMETRIC DECAY INSTABILITY IN A MULTIMODE MICROWAVE DISCHARGE ION SOURCE  
C. MALLICK, M. BANDYOPADHYAY and R. KUMAR  
IPR/RR-1038/2019      JANUARY 2019

OBSERVATION OF ELECTRON TEMPERATURE GRADIENT (ETG) TURBULENCE AND INDUCED  
PLASMA TRANSPORT IN LVPD  
PRABHAKAR SRIVASTAV, L. M. AWASTHI, RAMESWAR SINGH, A. K. SANYASI, P. K. SRIVASTAVA,  
R. SUGANDHI, S. K. SINGH, S. K. MATTOO, R. SINGH and P. K. KAW  
IPR/RR-1039/2019      JANUARY 2019

COMPOSITIONAL ANALYSIS OF LASER PRODUCED PLASMA PLUME IN FRONT AND BACK  
ABLATION GEOMETRIES  
ALAMGIR MONDAL, R. K. SINGH and H. C. JOSHI  
IPR/RR-1040/2019      JANUARY 2019

PERFORMANCE EVALUATIONS OF VARIOUS DIAGNOSTICS DEVELOPED FOR NNBI PROGRAM IN  
IPR  
M. BANDYOPADHYAY, A. J. DEKA, D. MUKHOPADHYAY, P. SINGH, D. BORAH, A. PANDEY, H.  
TYAGI, R. K. YADAV, M. BHUYAN, P. BHARATHI, A. K. CHATTOPADHYAY, K. PANDYA, M. J.  
SINGH and A. CHAKRABORTY  
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LEAK WIDTH IN A MULTI-CUSP FIELD CONFIGURATION: A REVISIT WITH A VERSATILE  
EXPERIMENTAL DEVICE  
MEENAKSHEE SHARMA, A. D. PATEL, N. RAMASUBRAMANIAN, R. GANESH and P. K.  
CHATTOPADHYAY  
IPR/RR-1042/2019      JANUARY 2019

NUMERICAL SIMULATION OF THE EFFECT OF PELLETT INJECTION ON ELMs  
D. CHANDRA, A. SEN and A. THYAGARAJA  
IPR/RR-1043/2019      JANUARY 2019

CHARACTERIZATION OF ATMOSPHERIC PRESSURE PLASMA PLUME  
G. VEDA PRAKASH, KIRAN PATEL, NARAYAN BEHERA and AJAI KUMAR  
IPR/RR-1044/2019      JANUARY 2019

DYNAMICS OF MUTUAL HARMONIC SYNCHRONIZATION BETWEEN TWO COUPLED GLOW  
DISCHARGE PLASMA SYSTEMS  
NEERAJ CHAUBEY, S. MUKHERJEE and A.SEN  
IPR/RR-1045/2019      JANUARY 2019

ERROR FIELD EXPERIMENT AND ANALYSIS IN SST-1  
SOMESWAR DUTTA, Y. PARAVASTU, J. DHONGDE, H. CHUDASMA, S. GEORGE, K. DHANANI, A.  
MAKWANA, C. DODIYA, P. VARMORA, D. K. SHARMA, A. K. SINGH, U. KUMAR, D. RAVAL, U.  
PRASAD, Z. KHAN, R. SRINIVASAN and D. RAJU  
IPR/RR-1046/2019      JANUARY 2019

OPERATIONAL CHARACTERISTICS OF A 25KW NONTRANSFERRED DC PLASMA TORCH  
DEVELOPED FOR INDUSTRIAL APPLICATIONS  
VIDHI GOYAL, P. BHARATHI, G. RAVI and S. MUKHERJEE  
IPR/RR-1047/2019      JANUARY 2019

EFFECTS OF TIP RADIUS ON CONTACT AND BENDING STRESSES IN AN EXTERNAL-INTERNAL  
GEAR PAIR  
KRISHAN KUMAR GOTEWAL and PARITOSH CHAUDHURI  
IPR/RR-1048/2019      JANUARY 2019

EFFECT OF ELECTRODE BIASING GENERATED RADIAL ELECTRIC FIELD ON GEODESIC ACOUSTIC MODES IN SINP TOKAMAK

L. T. LACHHVANI, T. MACWAN, J. GHOSH, P. K. CHATTOPADHYAY, N. CHAKRABARTI and R. PAL  
IPR/RR-1049/2019      JANUARY 2019

PLASMA FLOW EQUILIBRIA IN 2D CYLINDRICALLY SYMMETRIC EXPANDING MAGNETIC FIELD  
SNEHA GUPTA and DEVENDRA SHARMA

IPR/RR-1050/2019      JANUARY 2019

APPLICATION OF ANSYS FLUENT MHD CODE FOR LIQUID METAL MHD STUDIES

A. PATEL and R. BHATTACHARYA

IPR/RR-1051/2019      JANUARY 2019

INVESTIGATION ON GROWTH OF QUASI-LONGITUDINAL (QL) WHISTLERS WITH ENERGY SCALING OF ENERGETIC ELECTRONS IN LVPD

A. K. SANYASI, PRABHAKAR SRIVASTAV, L. M. AWASTHI, P. K. SRIVASTAVA, R. SUGANDHI and D. SHARMA

IPR/RR-1052/2019      JANUARY 2019

INPUT DENSITY AND POWER EFFECT ON DIFFUSIVE PLASMA TRANSPORT IN SCRAPE-OFF LAYER (SOL) IN DIFFERENT LIMITER CONFIGURATIONS IN ADITYA TOKAMAK

BIBHU PRASAD SAHOO, DEVENDRA SHARMA and RATNESHWAR JHA

IPR/RR-1053/2019      JANUARY 2019

WATER REPELLENT SUPERHYDROPHOBIC PTFE SURFACE: ROLE OF HIERARCHICAL PROTRUSIONS PRODUCED BY LOW ENERGY ION BEAM IRRADIATION

VIVEK PACHCHIGAR, MUKESH RANJAN and SUBROTO MUKHERJEE

IPR/RR-1054/2019      JANUARY 2019

NOVEL APPROACH OF PULSED-GLOW DISCHARGE WALL CONDITIONING IN ADITYA UPGRADE TOKAMAK

K. A. JADEJA, J. GHOSH, KIRAN PATEL, K. M. PATEL, B. G. ARAMBHADIYA, R. L. TANNA, K. S. ACHARYA, S. B. BHATT, M. B. CHOWDHURI, R. MANCHANDA, MINSHA SHAH, S. GHOSH, VARA PRASAD KELLA, TANMAY MACWAN, ROHIT KUMAR, SUMAN AICH, DEVILAL KUMAWAT, M. B. KALAL, RACHANA RAJPAL, C. N. GUPTA, P. K. CHATTOPADHYAY and ADITYA-U TEAM

IPR/RR-1055/2019      JANUARY 2019

ELECTRICAL MODEL OF ADITYA-U TOKAMAK

DEVILAL KUMAWAT, ROHIT KUMAR, JOYDEEP GHOSH and RAKESH TANNA

IPR/RR-1056/2019      JANUARY 2019

PERFORMANCE ASSESSMENT OF THE HELIUM COOLED FIRST WALL MOCK-UP IN HELOKA FACILITY

S. RANJITHKUMAR, B. K. YADAV, ABHISHEK SARASWAT, PARITOSH CHAUDHURI, E. RAJENDRA KUMAR, ANDRE KUNZE and B. E. GHIDERSA

IPR/RR-1057/2019      FEBRUARY 2019

JOINING OF HEAT SINK WITH STRUCTURAL MATERIAL FOR ITER LIKE DIVERTOR APPLICATION

K. P. SINGH, ALPESH PATEL, KEDAR BHOPE, MAYUR MEHTA, NIKUNJ PATEL and S. S. KHIRWADKAR

IPR/RR-1058/2019      FEBRUARY 2019



CHARACTERIZATION OF VACUUM IMMERSSED IN-SITU WORK-FUNCTION AND CESIUM FLUX MEASURING SETUP USING VERSATILE DIAGNOSTICS SUITABLE FOR CESIUM SEEDED NEGATIVE ION SOURCE APPLICATIONS

P. SINGH, M. BANDYOPADHYAY, K. PANDYA, M. BHUYAN, and A. CHAKRABORTY

IPR/RR-1059/2019 FEBRUARY 2019

THE IMPACT OF HOLLOW CATHODE GEOMETRY ON THE CHARACTERISTICS OF DOWNSTREAM MAGNETIZED PLASMA COLUMN

M. P. BHUVA, S. K. KARKARI and SUNIL KUMAR

IPR/RR-1060/2019 FEBRUARY 2019

STUDIES OF EDGE PLASMA PARAMETERS ALONG WITH THE NEUTRALS OF ADITYA-U TOKAMAK USING COMBINED UEDGE-DEGAS2 CODE

RITU DEY, HARSHITA RAJ, M. B. CHOWDHURI, JOYDEEP GHOSH, K. A. JADEJA, K. M. PATEL, N. C. PATEL, R. L. TANNA, R. MANCHANDA, S. BANERJEE, R. SRINIVASAN, DEEPTI SHARMA, U. C. NAGORA, P. K. ATREYI, J. V. RAVAL, Y. S. JOISA, P. K. CHATTOPADHYAY, D. P. STOTLER and T. D. ROGNLIEN

IPR/RR-1061/2019 FEBRUARY 2019

DEFLECTION OF INTERFEROMETRY BEAMS DUE TO TRANSVERSE REFRACTIVE INDEX GRADIENT IN SST-1

ASHA ADHIYA, RAJWINDER KAUR and PRABAL CHATTOPADHYAY

IPR/RR-1062/2019 FEBRUARY 2019

A SYMMETRIC PUSH-PULL DRIVEN MAGNETIZED PLASMA SOURCE USING HOLLOW CYLINDRICAL ELECTRODES

J.K. JOSHI, S. K. KARKARI and SUNIL KUMAR

IPR/RR-1063/2019 FEBRUARY 2019

ETG TURBULENCE INDUCED ENERGY FLUX IN THE LARGE LABORATORY PLASMA

PRABHAKAR SRIVASTAV, RAMESWAR SINGH, L. M. AWASTHI, A. K. SANYASI, P. K. SRIVASTAVA, RITESH SUGANDHI and R. SINGH

IPR/RR-1064/2019 FEBRUARY 2019

ESTIMATION OF EFFECTIVE THERMAL CONDUCTIVITY FOR LITHIUM METATITANATE ( $\text{Li}_2\text{TiO}_3$ ) PEBBLE BEDS USING STEADY STATE AXIAL HEAT FLOW METHODS

MAULIK PANCHAL, A. SARASWAT, S. VERMA, PARITOSH CHAUDHURI

IPR/RR-1065/2019 FEBRUARY 2019

JOINING OF TI COATED GRAPHITE TO HEAT SINK MATERIAL

K. P. SINGH, PRIYANKA PATEL, KAUSHALKUMAR DARJI, ALPESH PATEL, KEDAR BHOPE, PRAKASH MOKARIA, SUNIL BELARE AND SAMIR S KHIRWADKAR

IPR/RR-1066/2019 FEBRUARY 2019

CHARACTERISATION OF SORBENT MATERIALS & GLUE FOR CRYOPUMP DEVELOPMENT

R. GANGRADEY, R. JHA, J. MISHRA, S. MUKHERJEE, P. NAYAK and P. PANCHAL

IPR/RR-1067/2019 MARCH 2019

EFFECT OF INHOMOGENEOUS MAGNETIC FIELD ON PLASMA GENERATION IN A LOW MAGNETIC FIELD HELICON DISCHARGE

SONU YADAV, KSHITISH K. BARADA, SOUMEN GHOSH, JOYDEEP GHOSH and PRABAL K.CHATTOPADHYAY

IPR/RR-1068/2019 MARCH 2019

PLASMA COLUMN POSITION MEASUREMENTS USING MAGNETIC DIAGNOSTICS IN ADITYA-U TOKAMAK

S. AICH, R. KUMAR, T. M. MACWAN, D. KUMAVAT, S. JHA, R. L. TANNA, SATHYANARAYANA K., J. GHOSH, K. A. JADEJA, K. PATEL, SHARVIL PATEL, VAIBHAV RANJAN, MADANLAL KALAL, DINESH VARIA, D. SADHARKIYA, D. RAJU, P. K. CHATTOPADHYAY, C. N. GUPTA, Y. C. SAXENA and ADITYA-U TEAM

IPR/RR-1069/2019 MARCH 2019

BROADBAND CHARACTERIZATION OF HIGH TEMPERATURE BLACK BODY SOURCE WITH FOURIER TRANSFORM MICHELSON INTERFEROMETER FOR ECE MEASUREMENTS

ABHISHEK SINHA, S. K. PATHAK, STEFAN SCHMUCK and JOHN FESSEY

IPR/RR-1070/2019 MARCH 2019

UNDERSTANDING LANGMUIR PROBE CHARACTERISTICS IN A MAGNETIZED PLASMA WITH TWO-TEMPERATURE ELECTRON POPULATION

M. P. BHUVA, S. K. KARKARI and SUNIL KUMAR

IPR/RR-1071/2019 MARCH 2019

D-T NEUTRON GENERATOR AT INSTITUTE FOR PLASMA RESEARCH (IPR)

SUDHIRSINH VALA, M. ABHANGI, RATENSH KUMAR, S. TIWARI, R. KUMAR and M. BANDYOPADHYAY

IPR/RR-1072/2019 MARCH 2019

DESIGN OPTIMIZATION OF HELIUM COOLING SYSTEMS FOR INDIAN LLCB TBM

B. K. YADAV, A. GANDHI, K. T. SANDEEP, A. SARASWAT, D. SHARMA and P. CHAUDHURI

IPR/RR-1073/2019 MARCH 2019

ESTIMATION OF RADIAL PROFILE OF PARTICLE CONFINEMENT TIME FROM H $\alpha$  EMISSIVITY PROFILE IN ADITYA TOKAMAK AND INFERENCE OF ITS PARTICLE TRANSPORT

RITU DEY, M. B. CHOWDHURI, J. GHOSH, R. MANCHANDA, N. YADAVA, R. L. TANNA and ADITYA TEAM

IPR/RR-1074/2019 MARCH 2019

ELECTRIC FIELD FILAMENTATION AND HIGHER HARMONIC GENERATION IN A VERY HIGH FREQUENCY CAPACITIVE DISCHARGES

SARVESHWAR SHARMA, N. SIRSE, A. SEN, J. S. WU and M. M. TURNER

IPR/RR-1075/2019 MARCH 2019

OCCUPATIONAL RADIATION EXPOSURE ANALYSIS of 14 MeV NEUTRON GENERATOR FACILITY: A NEUTRONIC ASSESSMENT FOR THE BIOLOGICAL AND LOCAL SHIELD DESIGN

H.L. SWAMI, S. VALA, M. ABHANGI, RATNESH KUMAR, C. DANANI, R. KUMAR and R. SRINIVASAN

IPR/RR-1076/2019 MARCH 2019

ELECTRON TEMPERATURE CONTROL IN A DOUBLE PLASMA DEVICE BY SELECTIVE BIASING OF CONTROL GRID

PRINCE ALEX, A.K. SANYASI, PRABHAKAR SRIVASTAV, P. K. SRIVASTAVA, R. SUGANDHI and L. M. AWASTHI

IPR/RR-1077/2019 MARCH 2019

DESIGN AND DEVELOPMENT OF A 2.45 GHz ECR ION SOURCE FOR AN ACCELERATOR BASED FUSION NEUTRON SOURCE

SUDHIRSINH VALA, RATNESH KUMAR, MITUL ABHANGI, CHINMOY MALLICK, R. KUMAR and M. BANDYOPADHYAY

IPR/RR-1078/2019 MARCH 2019