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Atal Incubation Center (AIC) at IPR

Atal Innovation Mission (AIM) is the Government of India's initiative for encouraging a culture of innovation and entrepreneurship by providing a platform for the promotion of innovative ideas, Start-ups, and other self-employment activities in technology-driven areas. AIM provides support for the establishment of new incubation centers known as Atal Incubation Centers (AICs) which would aim to nurture innovative start-up businesses in their pursuit to become scalable and sustainable enterprises. As a part of Government's reforms in Atomic Energy, DAE had announced establishment of incubation centers in BARC, RRCAT, IGCAR and IPR. In continuation, IPR had submitted a proposal to AIM-NITI Ayog for setting up of such AIC and presented a detailed plan of the same before the selection committee. IPR Incubation Centre has been selected for being recognized and funded as an Atal Incubation Centre.

As reported in an earlier issue of IPR Newsletter, on 30th October, 2020, as part of the "Founders Day" celebrations of BARC, Shri K.N. Vyas, Secretary, Department of Atomic Energy and Chairman, Atomic Energy Commission remotely inaugurated Technology Incubation centers at BARC, IGCAR, RRCAT and IPR.



NITI Aayog



ATAL INNOVATION MISSION



Images from the virtual inauguration of IPR Incubation center (Images from IPR Newsletter No. Issue 089, Dec 2020)

The 74th Republic day was celebrated at the IPR main campus on 26 Jan 2023. The national tricolor was hoisted by Director, Dr. Shashank Chaturvedi, which was followed by the National Anthem.

Director IPR then addressed the gathering of staff members and their families present for the event. In his speech, he highlighted many of the recent achievements of IPR such as obtaining commissioning approval for the 14MeV neutron facility, improvements in the DeepCXR software, successful testing of the 100kW graphite electrode based plasma torch system for 120 hours, progress in the gyrotron test facility at IPR, technology transfer of plasma activated water, plasma pyrolysis, Agastya-400 cryo-pump and plasma-based metal oxide nano powders, completion of assembly of ITER cryostat top lid, and establishment of Atal Incubation center at IPR. IPR also organized a conference bringing together scientists from ISRO and space sector startups to showcase IPR's capabilities in space-relevant areas.

This was followed by snacks and various competitions and fun games for staff and family. Prizes were also distributed to the winners by CAO Shri. Niranjana Vaishnav, which was followed by lunch. The R-day programs for the staff were coordinated by the IPR Staff Club.



Unfurling of the tricolor and Director IPR addressing the gathering.



Images from the Republic Day celebrations held at IPR main campus



74th Republic Day Celebration @ CPP-IPR

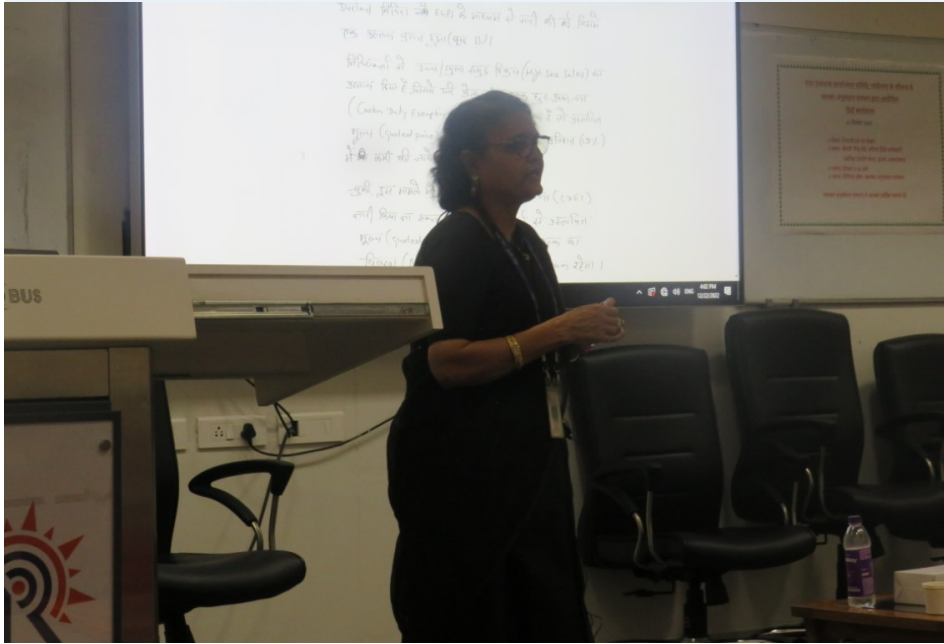


At the Center of Plasma Physics-IPR, Sonapur, the 74th Republic Day was celebrated by the staff members. The National flag was unfurled by Prof. B.K. Saikia, Acting Centre Director.

हिंदी कार्यशाला

4

प्लाज़्मा अनुसंधान संस्थान द्वारा दिनांक 22 दिसंबर 2022 को नगर राजभाषा कार्यान्वयन समिति, गांधीनगर के तत्वावधान में हिंदी कार्यशाला का आयोजन किया जिसमें नराकास, गांधीनगर के सदस्य कार्यालयों के कर्मचारियों/अधिकारियों ने भाग लिया। इस कार्यशाला में "टिप्पणी एवं पत्र लेखन" विषय पर प्रशिक्षण देने हेतु श्रीमती नीलू सेठ, उप निदेशक, (राजभाषा), अंतरिक्ष उपयोग केन्द्र, इसरो, अहमदाबाद को आमंत्रित किया गया था। श्रीमती नीलू सेठ ने 'टिप्पणी एवं पत्र लेखन' विषय पर विस्तार से चर्चा की एवं विभिन्न उदाहरण पेश किये। साथ ही प्रतिभागियों को लघु टिप्पणियों का अभ्यास भी करवाया। इस कार्यशाला में प्लाज़्मा अनुसंधान संस्थान के अलावा दि न्यू इण्डिया एश्योरेंस कंपनी लिमिटेड, राष्ट्रीय फैशन प्रौद्योगिकी संस्थान, मानव संसाधन, कार्यालय पुलिस उप महानिरीक्षक, कौशल विकास और उद्यमशीलता मंत्रालय, बैंक ऑफ इंडिया, भारतीय स्टेट बैंक, केन्द्रीय विद्यालय संगठन, कैनरा बैंक अंचल कार्यालय, आयकर विभाग, जन गणना कार्यालय एवं इंडियन ओवरसीज बैंक के कर्मचारियों/अधिकारियों ने भाग लिया।



(L) प्रशिक्षण देते हुए श्रीमती नीलू सेठ (R) श्रीमती नीलू सेठ को पुस्तक भेंट कर स्वागत करते हुए श्री राज सिंह



कार्यशाला के प्रतिभागी

IPR participated in the "Pride of India" exhibition organized as part of the 108th Indian Science Congress which was organized at the **Rashtrasant Tukadoji Maharaj Nagpur University** during 3-7 January, 2023. IPR participated under the DAE pavilion along with other units of DAE. The IPR stall had working and static models related to applications of plasma. Students from the Government Institute of Forensic Science, Nagpur were selected as technical volunteers for this event and they were trained to explain the IPR exhibits to visitors, especially in local language. The exhibition was visited by over a lakh visitors from all walks of life. The DAE Pavilion, under which IPR participated, won the award for the "Most Informative Pavilion".

Fifteen students of the 1st and 2nd year MSc Forensic Science from the Government Institute of Forensic Science, Nagpur, were selected as technical volunteers for IPR stall. They were trained by the IPR team to explain the exhibits to the visitors. IPR exhibited over 10 working and static models based on applications of plasma and fusion. Dr Samir Khirwadkar, Head, High Temperature Technologies Division and member of IPR team visited several educational institutions in Nagpur such as Hadas High School, Shivaji Science College, as well as Department of Physics, Nagpur University and interacted with students and faculty regarding R&D being undertaken by IPR in the areas of plasma and fusion. Detailed report [HERE](#).



Images from the IPR stall at the "Pride of India" exhibition of the 108th Indian Science Congress



Images from the IPR stall at the "Pride of India" exhibition of the 108th Indian Science Congress



IPR team with the "Most Informative Pavilion" award which was awarded to the DAE pavilion.

हर वर्ष की तरह संस्थान में 10 जनवरी 2023 को विश्व हिंदी दिवस का आयोजन किया गया। इस अवसर पर अंतरिक्ष विभाग एवं परमाणु ऊर्जा विभाग की संयुक्त हिंदी सलाहकार समिति के सदस्य एवं प्रख्यात हिंदी विद्वान डॉ. दामोदर खडसे को "विश्व मंच पर हिंदी" विषय पर व्याख्यान देने हेतु आमंत्रित किया गया। विश्व हिंदी दिवस समारोह के प्रारंभ में श्री निरंजन वैष्णव, मुख्य प्रशासनिक अधिकारी ने डॉ. दामोदर खडसे का संक्षिप्त परिचय दिया। निदेशक महोदय डॉ. शशांक चतुर्वेदी ने खडसे जी को पुस्तक एवं शॉल भेंट कर उनका स्वागत किया। इसके पश्चात अपने वक्तव्य में खडसे जी ने विश्व भर में हिंदी भाषा के बढ़ते वर्चस्व एवं राष्ट्र की एकता में हिंदी की महत्वपूर्ण भूमिका पर प्रकाश डाला। हिंदी विदेश में सारे भारतीयों को एक मंच पर प्रतिस्थापित करती है। उन्होंने यह भी इंगित किया की विदेशों में स्कूल - कॉलेजों और यूनिवर्सिटी में भी हिंदी पढ़ाई जाती है एवं उसमें शोध कार्य होता है, यह हमारे लिए गौरव का विषय है। हिंदी को राजभाषा बनाने में माहत्मा गांधी की दूरदर्शिता एवं उनके योगदान का भी उन्होंने उल्लेख किया। खडसे जी ने व्याख्यान में अपनी विदेश यात्रा के दौरान हिंदी की महीमा-गरिमा को उजागर करने वाले कई अनुभव साझा किये। हिंदी के बढ़ते वर्चस्व को देखते हुए उन्होंने विश्व दृष्टि से हिंदी को देखने की प्रेरणा दी। व्याख्यान के पश्चात् श्री राज सिंह, वैज्ञानिक अधिकारी-एच ने डॉ. दामोदर खडसे जी को विश्व हिंदी दिवस के अवसर पर इस महत्वपूर्ण विषय पर संबोधित करने के लिए हार्दिक आभार व्यक्त किया।



(L) डॉ. दामोदर खडसे का स्वागत करते हुए निदेशक महोदय (R) व्याख्यान देते हुए डॉ. दामोदर खडसे



सेमिनार हॉल में उपस्थित श्रोतागण

In SST-1, sub-cooled LN₂ is used in various sub systems of 80 K distribution for cooling to reduce the heat load. In-line gravitational type phase separators are installed to lower the saturation point of LN₂ and ensure the delivery of pure liquid to applications. The LN₂ is returned *via* phase separator to the sub-cooler vessel. During SST-1 operation, the frequent coming out of LN₂ fluid from 80 K main vent line was observed. This may be due to the more distance between phase separator and sub cooler vessel location, saturation stage in various 80 K distribution systems and demand of an installation of extra LN₂ phase separator in line. To prevent the huge losses of cryogen, an installation of LN₂ phase separator in line could be best optimum solution to resolve the issue. Another option of a vacuum jacketed transfer line along with NRV (Non Return Valve) valve assembly installation in vent line is currently under progress. The ANSI B 16.10 face to face valve designed and performance test has been successfully carried out at Cryo MEL lab. The results found are in acceptable limit. This work results the more LN₂ could be received in sub-cooler vessels which might be the best replacement option/technical solution in contrast with the procurement and installation of high cost LN₂ phase separator. The installation of developed transfer line valve assembly in the system is being in progress.



Salient Features:

- Valve body and disc: AISI 304
- Sealing: PCTFE
- Helium leak tightness : 7.5×10^{-9} mbar-l/s
- Pressure opening of valve: > 2 psi (g)
- Testing standard: API 598
- Mounting between : ANSI 16.5 flange
- Pressure rating: 150 class

(Left) Performance test of Transfer line with NRV assembly (A) LN₂ inlet (B) Transfer line (C) Valve assembly (D) LN₂ outlet
(Right) Salient features of the system

Mechanical Performance of In-house Developed Bi-metallic Joints for Cryogenic Applications

In continuation of the development activity of epoxy based Bi-metallic joints of (SS + Al and SS + Glass fibre) at cryogenic division, the mechanical tensile pull load test has been performed on the fabricated joints. The test was done to know the strength of the dissimilar material joint. The joints were fractured at parent material location of Al and SS tube cross-section. No joints were broken at the bonding of epoxy resin section. Before performing the mechanical test the joints were thermal shocked at 77 K temperature. The test result found in acceptable limit to the respective material strength criteria. The batch wise fabrication and other testing are under progress for repeatability of acceptance and reliability of the product. The custom design of Bi-Metallic joints can be made as per the system requirement. The test was performed at NABL accredited lab with the following results : ¾" NB joint (AL + SS 304L): Tensile strength: 220 MPa, Pulled out load: 71.56 kN; 1" NB joint (AL + SS 304L): Tensile strength: 195 MPa, Pulled out load: 53.54 kN; ½" NB joint (SS 304L + Glass fibre): Tensile strength: 70 MPa, Pulled out load: 18.21 kN (The allowable bulk shear strength parallel to reinforced of GFRP: 30 MPa and Bonding shear strength of epoxy resin: 20 MPa of metal to metal joining)



(Top) SS+ Al joint failure at tube location (Bottom) SS+ Glass fiber joint failure at tube location (Right) Tensile pull test being conducted on the joint

Date	Institution	Visitors
07-Dec-2022	Indo-Science Education Trust, Pune, Maharashtra	24 students of classes 9-12 and 3 teachers
20-Dec-2022	Hiramani School, Ahmedabad	63 students of class 11 and 3 teachers
20-Dec-2022	Noble Vigyan Prasarak Bahuuddeshya Sanstha, Jalgaon, Maharashtra	56 students of classes 6-12 and 6 teachers
17-Jan-2023	Madhya Pradesh Lok Shikshan Sanchanalay, Bhopal, M.P.	117 students of classes 9-12 and 5 teachers
18-Jan-2023	Noble Group Institutions, Junagadh, Gujarat	52 students of BSc & MSc Physics and 5 teachers



Students and teachers of the Madhya Pradesh Lok Shikshan Sanchanalay, Bhopal, M.P. during their visit to IPR



Students and teachers of Hiramani School, Ahmedabad during their visit to IPR



Students and teachers of Noble Group Institutions, Junagadh, Gujarat during their visit to IPR

CPP-IPR's Outreach Activity at Assam State Science Fair - 2022

CPP-IPR participated in the State Science Fair and State Level Children's Science Congress (NCSC) - 2022 held at the premises of Government Higher Secondary School, Tezpur from 16-19 December, 2022. National Children's Science Congress is a nationwide programme of National Council for Science and Technology Communications, Department of Science and Technology, Govt. of India. In Assam, it is also supported by Science, Technology and Climate Change Department, Government of Assam. Around 300 projects from different districts of Assam were presented and around 1000 delegates, including students, teachers and scientists of schools, colleges and national institutes from various parts of North East India participated in the programme.

In the CPP-IPR stall, a working model of glow discharge plasma was exhibited as well as posters on various aspects of plasma physics. Comics and articles on plasma physics were also distributed to visiting students and teachers. The stall was visited by around 400 visitors, including students, teachers, guardians and local public of Tezpur. Dr. Rakesh Moulick also delivered a talk on plasma physics in the activity corner of the fair, attended by around 100 students and teachers from various parts of Assam.



Images from the CPP-IPR participation in the Assam State Science Fair -2022

Fusion Blanket Division (FBD) at IPR is engaged in various R&D activities and enabling technology development for Indian fusion reactor blanket. This includes development of various technologies viz., liquid Lead Lithium (Pb-Li) technology, Ceramic Breeder material and Reduced Activation Ferritic Martensitic Steel (RAFMS) development and its qualification, high pressure and high temperature helium technology, hydrogen isotope extraction & removal technology, etc. FBD has following four sections involved in all major R&D activities related to blanket technologies.

Blanket Cooling Section (BCS): Design and engineering analysis of solid/liquid breeder type blanket configuration. R&D activities for high pressure (8.0 MPa) and high temperature (300 °C) helium technology development. An Experimental Helium Cooling Loop (EHCL) has been set up at IPR to test blanket modules and other components of fusion reactor using high pressure - high temperature (80 bar, 300 - 4000 C) helium gas. This system will be connected to the High Heat Flux Test facility (e-beam test facility).

Blanket Material Section (BMS): Development of blanket structural (RAFMS) and functional (Li ceramic) material and evaluation of their thermo-physical and mechanical properties.

Liquid Metal Technology Section (LMTS): Development of Pb-Li loop components as well as diagnostics and their testing in Pb-Li loop, Production of Pb-Li alloy and its characterization, Magneto Hydro Dynamic (MHD) studies associated with molten Pb-Li flow under strong magnetic field (~ 1.0 T) etc.

Fusion Fuel Cycle section (FFCS): R&D studies related to Hydrogen fuel-cycle including the coating technology and its application for the permeation studies.



(L) EHCL system at IPR (R) Thermo-mechanical test facility for pebble beds measurement



(L) MHD experimental loop at IPR (R) Indigenously developed Pb-Li production system (A) Li tank (B) Mixing vessel (C) Pb measuring vessel (D) Drain tank (E) Pb tank (F) Li nozzle



Mr. Hitesh Kumar Gulati, Mr. Nitin Bairagi and Mr. Mukesh Chandra Jha participated in the 6th DAE National yoga conference during 12-13 November, 2022 at the Nuclear Fuel Complex (NFC) Hyderabad. The theme of the conference was "Yoga for Absolute Fitness - Mind & Body" (तन और मन की पूर्ण स्वस्थता के लिये योग). The conference was specifically organized for DAE employees.



Mr. Deepak Aggarwal presented a paper titled "A Hands-on Approach for Scalable Parallel Applications Development: From Testbed to Petascale" in IEEE 29th International Conference on High Performance Computing, Data, and Analytics (HiPC 2022) held at Bangalore during 18-21 December, 2022.



Mr. Rajiv Sharma presented an Invited talk entitled "Experience with Cryogenics, High Pressure Safety, Problems & Solutions" in the "2nd DAE-BRNS Workshop on Cryogenic Facility Management" organized at TIFR, Mumbai, during 4-7 Jan 2023.

Ms. Renu Bahl, gave an invited talk on "*Plasma Thruster Activities at IPR*" at Plasma for Space and Aerospace Applications", IPR, Gandhinagar, 24-25 November 2022

Talks presented at 20th International Congress on Plasma Physics (ICPP-2022), Gyeongju, South Korea, 27 November - 2 December 2022

- **Mr. Bharat Singh Rawat** : "*Magnetic Confinement of primary electrons in a ring cusp ion source*"
- **Mr. Satadal Das** : "*Electrode Biasing Effect on Radial Characteristics of Magnetized Plasma in Linear Device*"

S. Sunil, gave a talk on "*Experimental Setup for contamination study inside a vacuum chamber using an optical cavity*" at DAE-BRNS National Laser Symposium (NLS-31), IIT Kharagpur, 3-6 December 2022

Talks given at International e-Symposium on Plasma for Energy (ISPE-2022) SRM Institute of Science and Technology (SRMIST), Tamil Nadu, 5-6 December 2022

- **Dr. S.K. Nema**, gave an invited talk on "*Energy Recovery from Organic Waste using Thermal Plasma Technology*"
- **Mr. Sagar Agrawal**, gave a talk on "*Plasma based (Magnetron sputtering) thin film deposition for solar cell applications*"

Talks delivered at the 37th National Symposium on Plasma Science and Technology (PLASMA-2022), IIT Jodhpur, on 12-14 December 2022 :

- **Dr. Sudip Sengupta**, gave an invited talk on "*Radiation reaction effects on charged particle dynamics in an intense electromagnetic wave*"
- **Dr. Pintu Bandyopadhyay**, gave an invited talk on "*Experiments on crystal dynamics in strongly coupled complex plasmas*"

Talks presented at IEEE MTT-S and IEEE AP-S Microwave, Antennas, and Propagation Conference (MAPCON-2022), TheLeela Bhartiya City, Bangalore, 12-15 December 2022

- **Mr. Umesh Nagora**, gave a talk on "*Design and Development of 100 GHz Quadrature Heterodyne Interferometer system at IPR*"
- **Dr. Rohit Mathur**, gave a talk on "*Intermediate Frequency Circuit Design for Ka-Band Superheterodyne FMCW Reflectometer*"
- **Ms. A Sarada Sree**, gave a talk on "*RF communication using salt water standing column*"
- **Dr. Mumtaz Ali Ansari**, gave a talk on "*Preliminary Experimental Studies of the Proposed High Power RF Antenna to Assist Glow Discharge Cleaning of SST-1 at Low Pressure*"
- **Mr. Kiran Patel**, gave a talk on "*Digital Signal Processing Simulation for Plasma Electron Density Measurement on FPGA*"
- **Ms. Priyanka Tiwari**, gave a talk on "*RCS reduction of Microstrip Patch Antenna using Ku-band Perfect Polarization Converter Metasurface*"
- **Mr. Janmejy U. Buch**, gave a talk on "*Signal estimation and measurement for the reflectometry diagnostic at IPR*"
- **Ms. Manisha Jha**, gave a talk on "*Reconfigurable Plasma Antenna Array for Beamsteering application at S-band*"

Talks presented at 19th International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2022), Devi Ahilya Vishwavidyalaya, Indore, 13-17 December 2022

- **Mr. Umesh Nagora**, gave a talk on "*Design and Development of 100 GHz Quadrature Heterodyne Interferometer system at IPR*"
- **Dr. Rohit Mathur**, gave a talk on "*Intermediate Frequency Circuit Design for Ka-Band Superheterodyne FMCW Reflectometer*"
- **Mr. Sooraj K P**, gave a talk on "*SERS based detection of food adulterants and pesticides using metal nanoparticle arrays*"

Mr. Sagar Agrawal, gave a talk on "*Effect of thermal conductivity of gas used for sulfurization process on grain growth of CZTS thin film for solar cell application: Ar Vs. N₂*" at International Symposium on Semiconductor Materials and Devices (ISSMD-2022) at Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, 16-18 December 2022

Dr. Rajashree Sahoo, gave a talk on "*Milling effect on photocatalytic dye degradation using ZnO as catalyst*" at International Conference on Emerging Smart Materials in Applied Chemistry (ESMAC-2022), KIIT, Bhubaneswar, 20-22 December 2022

Mr. Mayur Mehta, gave an invited talk on "*Neutron cross-section studies for Fusion-Fission reactor materials*" at International Indo-Czech Christmas Workshop in Applied Nuclear Physics, Education and Data Measurement (InCzechNuc2022), Brno University of Technology, Czech Republic, on 21 December 2022

Ms. Nidhi Rathee, gave a talk on "*Breaking of Large Amplitude Electrostatic Waves in Inhomogeneous Plasmas*" on 21st December 2022

Professor K. Avinash, Central University Sikkim, gave a talk on "*A New Acoustic Mode*" on 21st December 2022

Ms. Pawandeep Kaur, gave a talk on "*Molecular Dynamics study of Convection Cells in 2D Yukawa liquids*" on 22nd December 2022

Ms. Priyanka Tiwari, gave a talk on "*Analysis, Design and Characterization of Metasurfaces for RCS Reduction*" on 26th December 2022

Dr. Arun Pandey, Max Planck Institute of Plasma physics, Greifswald, Germany, gave a talk on "*Stable, small plasmas in Wendelstein 7-X*" on 27th December 2022

Talks presented at International Conference on Plasma Science and Applications (ICPSA2022), organized by Gauhati University (GU) and Asian African Association for Plasma Training (AAAPT), 28-30 December 2022

- **Dr. Rakesh Moulick**, gave an invited talk on "*Particle-In-Cell simulation of electrostatic waves in the ionosphere*"
- **Dr. Ngangom Aomoa**, gave an invited talk on "*Characterization of a DC atmospheric pressure air discharge and its application in waste water treatment*"

- ◆ International Conference on Advances in Renewable Energy (CARE-2023), Harish-Chandra Research Institute, Allahabad, 2-4 February 2023; <https://care2023.tifrh.res.in/>
- ◆ Conference on Nuclear Training and Education: A Biennial International Forum (CONTE 2023), United States, 6-9 February 2023; <https://www.ans.org/meetings/conte23/>
- ◆ IEEE Texas Power and Energy Conference, Texas A&M University, College Station, Texas, United States, 13-14 February 2023; <https://tpec.engr.tamu.edu/>
- ◆ 20th Meeting of the Working Party on Scientific Issues and Uncertainty Analysis of Reactor Systems (WPRS), Paris, France, 20-24 February 2023; https://oecd-nea.org/jcms/pl_67096/20th-meeting-of-the-working-party-on-scientific-issues-and-uncertainty-analysis-of-reactor-systems-wprs
- ◆ Conference for Advanced Reactor Deployment (CARD-2023), United States, 22-24 February 2023; <https://event.asme.org/CARD-2023>
- ◆ Waste Management Symposium (WM2023): Planning for the Future: Innovation, Transformation, Sustainability, United States, 26 February-02 March 2023; <https://www.wmsym.org/>

Congratulations!!

- ◆ **Dr. Pintu Bandyopadhyay**, gave a talk on "Experiments in Complex Plasmas" at 37th National Symposium on Plasma Science & Technology (Plasma-2022), Plasma Science Society of India (PSSI) and the Indian Institute of Technology, Jodhpur, 12-14 December 2022, and have received **Jaidutt Saraswati Sodha PSSI Plasma Award**
- ◆ **Mr. Dheeraj Kumar Sharma**, gave a talk on "Manufacturing Experience of Indigenously Developed Dished Head-Sub Assembly (DH-SA) for High Voltage Bushing (HVB) of Indian Test Facility (INTF)" at 37th National Symposium on Plasma Science & Technology (Plasma-2022), Plasma Science Society of India (PSSI) and the Indian Institute of Technology, Jodhpur, 12-14 December 2022, and have received **First prize of the "PSSI- Z.H. Sholapurwala Award for Fusion Research"**
- ◆ **Ms. Praveena kumari**, gave a talk on "Implementation of Drift Free Integrators for Tokamak" at 37th National Symposium on Plasma Science & Technology (Plasma-2022), Plasma Science Society of India (PSSI) and the Indian Institute of Technology, Jodhpur, 12-14 December 2022, and have received Second prize of the **"PSSI- Z.H. Sholapurwala Award For Fusion Research"**
- ◆ **Mr. Shishir Biswas**, gave a talk on "Effect of flow shear on the onset of dynamo" at 37th National Symposium on Plasma Science & Technology (Plasma-2022), Plasma Science Society of India (PSSI) and the Indian Institute of Technology, Jodhpur, 12-14 December 2022, and have received **PSSI Best Poster Award 2022**
- ◆ **Mr. Jaydeep Joshi** (ITER-India) has been adjudged as the Winner of the **Fronius India Best Welding Engineer Competition** for the year 2022. The award was presented at the Inaugural Session of the National Welding Seminar 2022 held on 19th of January, 2023 at the Chennai Trade Centre, Nandambakkam, Chennai.

38th DAE Safety & Occupational Health Professionals Meet-2022

The 38th DAE Safety & Occupational Health Professionals Meet-2022 was jointly held by Atomic Energy Regulatory Board (AERB) and Nuclear Power Corporation of India Limited (NPCIL) from 19 to 21 December 2022 at Kakrapar Site. The themes for this year's meet were **"Self-Realization for Safety Culture"** for Industrial Safety and **"Occupational Health Hazards, its monitoring & control"** for Occupational Health. This meet was inaugurated by Shri G. Nageswara Rao, Chairman-AERB. About 150 delegates from various DAE units and DAE aided institutes physically attended and around 40 delegates participated virtually. The meet was physically attended by Shri Devendra Modi (who also received the certificates) and virtually joined by Shri Mehul Chodvadiya and Shri Dipankar Dutta.

As part of this event, various competitions were held at IPR. Best entries in each competition had been forwarded to the organizer. IPR has won three prizes in various competitions.



Name of Competition	Winner	Prize	Slogan
Hindi Slogan Competition	Vikas Gaur	1st	संरक्षा संस्कृति को जीवन का अभिन्न अंग बनाना है। अविलम्ब आत्मबोध हो इसका, यही मूल मंत्र अपना है॥
Gujarati Slogan Competition	Rajnikant Bhatasana	1st	व्यवसायिक स्वास्थ्य અને સુરક્ષા માટેના પાયા ત્રણ, જોખમ પર સ્વ-અનુભૂતિ તથા દેખરેખ અને નિયંત્રણ.
Gujarati Slogan Competition	Tushar Patel	2nd	વ્યવસાયિક ખતરાની નથી હોતી કોઈ આકૃતિ, સુરક્ષા નિયમોની સ્વ-અનુભૂતિથી જ વધશે સુરક્ષા સંસ્કૃતિ.

Title	Page No
Atal Incubation Center (AIC) at IPR	01
Republic Day celebrations at IPR	02,03
Republic Day celebrations at CPP-IPR	03
हिंदी कार्यशाला	04
IPR @ 108th Indian Science Congress	05, 06,15
विश्व हिंदी दिवस समारोह	07
In-house Development of LN2... SST-1	08
Mechanical Performance of...Cryo Applications	08
IPR Academic Visits	09

Title	Page No
CPP-IPR @ Assam State Science Fair - 2022	10
Fusion Blanket Division	11
IPR @ Conferences	12
Past Events @ IPR	13-14
Upcoming Events	14
Congratulations!!	14
38th DAE Safety & Occupational Health Professionals Meet-2022	14
Know Your Colleague	15

Know Your Colleague



Dr. Nilam Ramaiya joined IPR in 2009 and is working in Spectroscopy Diagnostics Section. Her field of research is plasma spectroscopy on ADITYA-U and SST-1 tokamaks. She has mainly contributed in installation and operation of various spectrometers and photomultiplier tube-based diagnostics for vacuum-ultraviolet to visible wavelength range in ADITYA-U and SST-1 tokamaks. These systems enable to observe line emissions from hydrogen and various impurities. She worked on polarization spectroscopy of Lyman- α line in the Large Helical Device at National Institute for Fusion Science in Japan from 2016-2019 earning Ph.D. degree in 2019 from SOKENDAI, The Graduate University for Advanced Studies, Japan. Recently she has been engaged in development, installation, operation, and data analysis of Near-Infrared spectrometer in the range of 800-1700 nm to monitor emissions from edge and scrape-off layer regions of ADITYA-U plasma.

Plasma Exhibition at 108th Indian Science Congress (Nagpur)



(L) IPR Team (R) Volunteers of the IPR stall with Outreach team in front of the IPR stall at the 108th ISC

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