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The 4th State

Newsletter of the Institute for Plasma Research, Gandhinagar, Gujarat (India)



IPR Newsletter Team Wishes you all a very Happy Diwali and a Prosperous New Year!!

हिंदी पखवाड़ा समारोह 2024

संस्थान में दिनांक 17 सितंबर 2024 से 27 सितंबर 2024 के दौरान हिंदी पखवाड़ा समारोह का आयोजन किया गया।

रोचक प्रसंग प्रस्तुति: हिंदी पखवाड़ा समारोह के अंतर्गत, 24 सितंबर 2024 को संस्थान के सेमिनार हॉल में हिंदी प्रश्नोत्तरी प्रतियोगिता आयोजित की गई। इस प्रतियोगिता में उत्साहपूर्वक प्रतिभागियों ने भाग लिया। प्रतिभागियों ने अपने जीवन से जुड़ी विभिन्न घटनाओं को बड़े ही रोचक और प्रभावकारी ढंग से प्रस्तुत किया तथा घटना के बाद जीवन में हुए परिवर्तन की चर्चा की। सरल हिंदी भाषा में कही गई सभी घटनाओं ने श्रोताओं को मंत्रमुग्ध किया।

वीडियो प्रतियोगिता: पखवाड़े के दौरान संस्थान के कार्मिकों के परिवार के सदस्यों के लिए वीडियो प्रतियोगिता का आयोजन किया गया, जिसके तहत परिवार के सदस्यों को किसी भी सामाजिक विषय पर 2 से 3 मिनट का वीडियो बनाकर अपलोड करने हेतु सूचित किया गया। कर्मचारियों के परिवार के सदस्यों ने पूरे उत्साह के साथ विभिन्न सामाजिक विषय पर सरल हिंदी भाषा में वीडियो अपलोड किये।

स्वरचित कविता पाठ: हिन्दी पखवाड़ा समारोह 2024 के अंतर्गत दिनांक 26 सितंबर 2024 को सेमिनार हॉल में कविता पाठ का आयोजन हुआ। स्वरचित कविता पाठ के माध्यम से प्रतिभागियों की सृजनशीलता से श्रोतागण परिचित हुए। सभी प्रतिभागियों ने पूरे उत्साह के साथ अपनी मौलिक कविता का पठन किया। श्रोताओं ने विभिन्न विषयों पर भावपूर्ण, ओजस्वी एवं रचनात्मक कविताओं का आनंद उठाया।



स्वरचित कविता पाठ करते हुए प्रतिभागी

गीत गायन प्रतियोगिता: दिनांक 27 सितंबर 2024 को संस्थान के सेमिनार हॉल में हिंदी पखवाड़ा समापन समारोह के अवसर पर अंतिम प्रतियोगिता गीत गायन का आयोजन हुआ। पिछले वर्ष की भाँति इस वर्ष भी बड़ी संख्या में प्रतिभागियों ने इसमें हिस्सा लिया तथा अपने निराले अंदाज में हिंदी गीतों को गाया। यह प्रतियोगिता काफी मनोरंजन पूर्ण रही।



गीत गायन की झलकियां

संस्थान में दिनांक 27 सितंबर 2024 को हिन्दी पखवाड़ा समापन समारोह का आयोजित किया गया। इस समारोह में निदेशक महोदय डॉ. शशांक चतुर्वेदी द्वारा माननीय गृह मंत्री जी के संदेश का वाचन किया गया एवं श्री निरंजन वैष्णव, मुख्य प्रशासनिक अधिकारी द्वारा डॉ. अजित कुमार मोहान्ती, अध्यक्ष, पऊआ एवं सचिव, पऊवि के संदेश का वाचन किया गया। इस समारोह में केन्द्रीय हिंदी प्रशिक्षण संस्थान द्वारा आयोजित हिंदी परीक्षा के उत्तीर्ण कर्मचारियों को निदेशक महोदय के कर कमलों से प्रमाण पत्र प्रदान किये गये। इसके पश्चात् निदेशक महोदय एवं वरिष्ठ अधिकारियों द्वारा हिन्दी पखवाड़ा की विभिन्न प्रतियोगिताओं के विजेताओं को पुरस्कार वितरित किए गए।



संदेश वाचन करते हुए डॉ. शशांक चतुर्वेदी



संदेश वाचन करते हुए श्री निरंजन वैष्णव



विचार प्रस्तुत करते हुए डॉ. सुबरोतो मुखर्जी

राजभाषा कार्यान्वयन की दिशा में श्रेष्ठ प्रदर्शन करने हेतु वर्ष 2023-24 के लिए संस्थान की अंतर अनुभागीय राजभाषा शील्ड वैज्ञानिक सूचना संसाधन केंद्र – SIRC (पुस्तकालय अनुभाग) को प्रदान की गई एवं राजभाषा कार्यान्वयन में उत्कृष्ट योगदान देने के लिए श्री गट्टू रमेश, वैज्ञानिक अधिकारी – एफ को वर्ष 2023-2024 के लिए राजभाषा सम्मान दिया गया।



अंतर अनुभागीय राजभाषा शील्ड प्राप्त करते हुए पुस्तकालय अनुभाग के सदस्य



श्री गट्टू रमेश राजभाषा सम्मान प्राप्त करते हुए

हिंदी प्रतियोगिताओं का मूल्यांकन करने में इन निर्णायकों का योगदान शामिल हैं – श्री राज सिंह, श्री निरंजन वैष्णव, डॉ. सूर्यकान्त गुप्ता, डॉ. विपुल तन्ना, श्री कुमार अजय, श्री हर्षद चामुण्डे, श्री अनुज हार्वे, सुश्री फाल्गुनी शाह, श्री हरीश खण्डूरी, श्री मुकेश रंजन, श्री सूर्यकुमार पाठक, श्री लक्ष्मीकांत बंसल, श्री चन्दन दानानी, श्री वाय.एस.एस श्रीनिवास, श्री हितेश गुलाटी, श्री मुकेश झा, श्री सुधीर सिंह वाला, श्री बी.के. शुक्ला, श्री चन्द्रमौली रोटी, श्री अनिलकुमार भारद्वाज, श्री सरोज दास, श्री आनंद मिश्रा, डॉ. अनिल त्यागी, श्री अतुल गर्ग, श्री गट्टू रमेश, श्री रमेश जोशी, सुश्री प्रतिभा गुप्ता, श्रीमती प्रमिला, श्रीमती शिल्पा खंडकर, श्री श्रवण कुमार, श्री सुनील मिसाल, श्री नितिन बैरागी, डॉ. हिरल जोशी, श्री कनुभाई परमार, डॉ. संध्या दवे, श्री मुकेश सोलंकी एवं श्री फैज़ल खान।

हिंदी प्रतियोगिता समिति के अध्यक्ष श्री निरंजन वैष्णव एवं सदस्य - श्री हरीश चन्द्र खण्डूरी, श्री गट्टू रमेश, श्री आनंद मिश्रा, सुश्री फाल्गुनी शाह, डॉ. नितिन बैरागी, श्री अतुल गर्ग, श्री प्रशांत कुमार, श्री आनंद विसानी, श्री रमेश जोशी, श्रीमती प्रमिला, श्रीमती शिल्पा खंडकर, डॉ. हिरल जोशी एवं श्री मुकेश सोलंकी द्वारा हिंदी पखवाड़ा समारोह की सभी प्रतियोगिताएँ सुचारू रूप से आयोजित की गईं।



डॉ. संध्या दवे धन्यवाद ज्ञापन देते हुए



हिंदी पखवाड़ा समापन समारोह में उपस्थित श्रोतागण

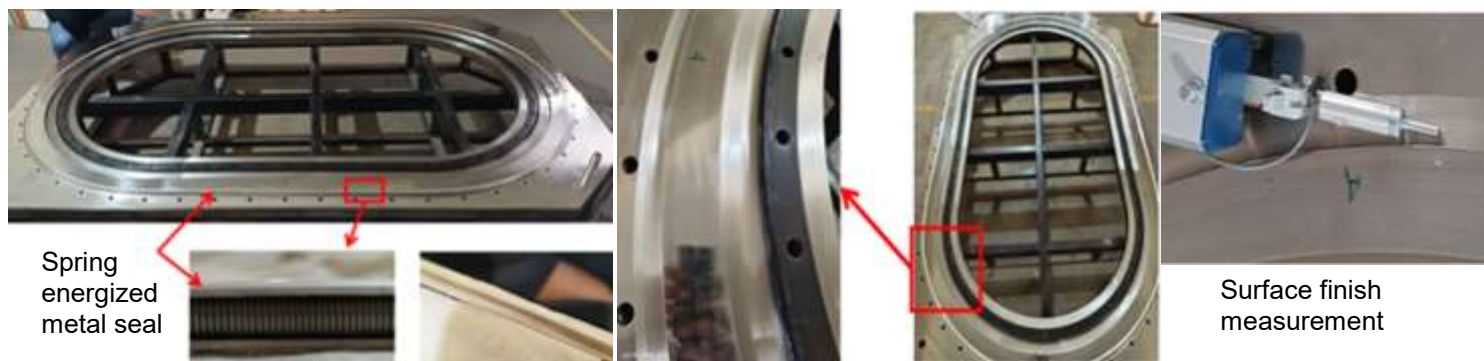


Development of Large Size-Noncircular Shape Spring Energized Metallic Seal

4

Spring Energized Metal Seals (Helicoflex type) provide Ultra High Vacuum class sealing under nuclear environment of fusion systems and accelerators. The manufacturing challenges include maintaining the flatness, achieving the desired surface finish, shaped forming of the thin foil, uniformity of spring stiffness and application of a Silver outer layer. There are just a few known suppliers worldwide. In India, the capability so far only extended to sizes up to ~300 mm diameter and that too for circular shapes.

In a recent development, IPR, working with an Indian company, has developed a Spring Energized Metal Seal, of large size, and having an oval shape (~2.4m x 1.4m). The seal has been tested for a leak rate of the order of 10^{-10} mbar-litre/s. **This is a major contribution to Aatmanirbhar Bharat.** The capabilities of manufacturing of large size metal seals within the country have been established, and hence it will be an import substitute for nuclear devices and accelerator systems.



Spring energized seal on test flange and close-up views of seal

Stringent control on surface finish of sealing flanges

Development of Copper Electrodeposition over full size accelerator grid segment



Electrodeposited Grid segment (as deposited condition)

Institute is developing a 100 keV/ 60 A Negative Hydrogen Ion based Neutral Beam System for fusion systems.

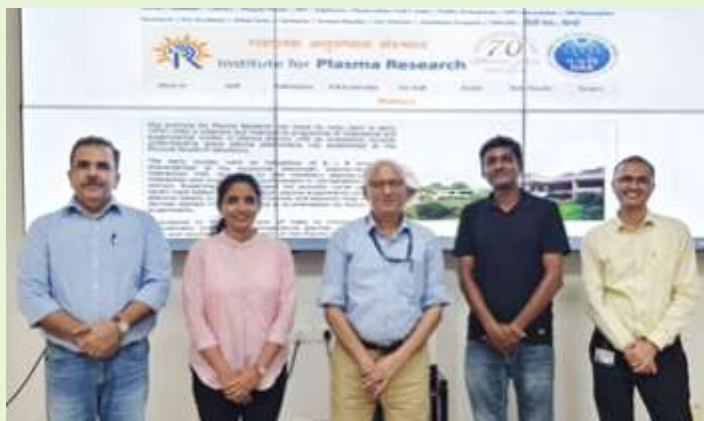
Water cooling channels must be embedded in the accelerator grids to remove the high heat load (2 MW/m^2) using water flowing at 20-25 bar with a maximum temperature up to 150°C . To embed the channels, copper is deposited on channels machined on the base plate.

Electro-chemical process based deposition technology is the best way of closing the machined channels in the accelerator grids.

The challenges include achieving the adhesion of thick copper layer deposit (~3 mm) without distortion over a large area ($0.5\text{m} \times 1.5\text{m}$) and maintaining flatness over the large deposit area. Globally, for electrodeposition, only one established source exists in Germany and another two are coming up in Italy and Japan.

This Electro-deposition Technology, developed by RRCAT Indore, has been applied in the manufacturing of accelerator grid in a collaborative work between IPR and RRCAT. This Indigenous Development is significant in terms of meeting all the qualification parameters at par with the global standard. The developed technology will find application in Accelerators, RF waveguides and High power RF antennas in Fusion devices.

IPR has established a Section-8 company, AIC-IPR Plasmatech Innovation Foundation (AIC-Plasmatech). The first Annual General Meeting (AGM) of the Board was held on 25th September 2024. Following the AGM, incubation agreements were signed with two start-ups: Exxcarbon Private Limited and Ecoplaswa Technology Private Limited. Exxcarbon focuses on waste-to-energy applications and is incubated for the commercialization of IPR's RAUDRA Plasma Pyrolysis technology. Ecoplaswa aims to develop products based on IPR's patented Plasma Activated Water technology for disinfecting and cleaning of containers used in the dairy industry, as well as for agricultural applications such as bio-nutrition and bio-fertilizers for crops. In addition to these, AIC-Plasmatech had earlier signed an incubation agreement with LBIS Research Private Limited for developing glass-like coatings on biodegradable fibres using plasma processing. By doing so, the aim is to have sustainable food packaging solution which will solve the problem of contamination of food due to leaching out of the coating material from packaging containers. A total of three start-ups are now incubated at IPR's incubation centre, all focused on commercializing plasma-based technologies for various applications. Incubation applications from 6 other Start-ups are presently at an advanced stage of processing.



Representatives of the three start-ups with Director and Head AIC-Plasmatech, IPR



Team from IPR, AIC-Plasmatech Board members with Dr. Puneet Seth, Founder of Exxcarbon Private Limited



Team from IPR, AIC-Plasmatech Board members with Ms Sowmya R S, Founder of Ecoplaswa Technology Private Limited



Team from IPR, AIC-Plasmatech Board members with Mr Rajesh Nair, Founder of LBIS Research Private Limited

IPR celebrated 'Swachhata Hi Seva' campaign from **17th September to 1st October 2024**. As per the guidelines of DAE, the Institute organized various programs in all the campuses- IPR, FCIPT, ITER-India and CPP-IPR which included Pledge taking, walkathon, Health awareness lecture for sanitation workers, tree plantation, awareness talks etc.



Tree Plantation “Ek Ped Ma ke Naam”



Meet and Greet with safai karmis



Arrangement of Breakfast for the safai karmis



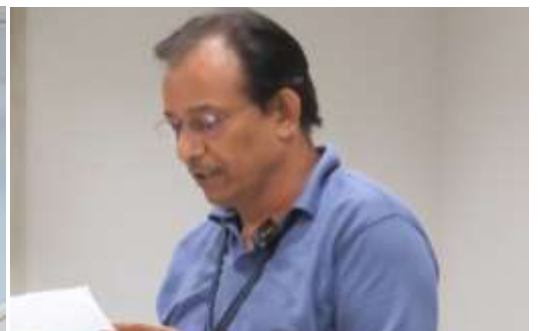
Health Awareness Talk for the safai karmis



A talk by Mr Alok B. Nachiketa



A talk by Mr Nayankumar D. Shukla



Vote of Thanks by Mr Dilip C Raval

500 kV/100 mA DC Ultra High Voltage Power Supply (UHVPS) at IPR

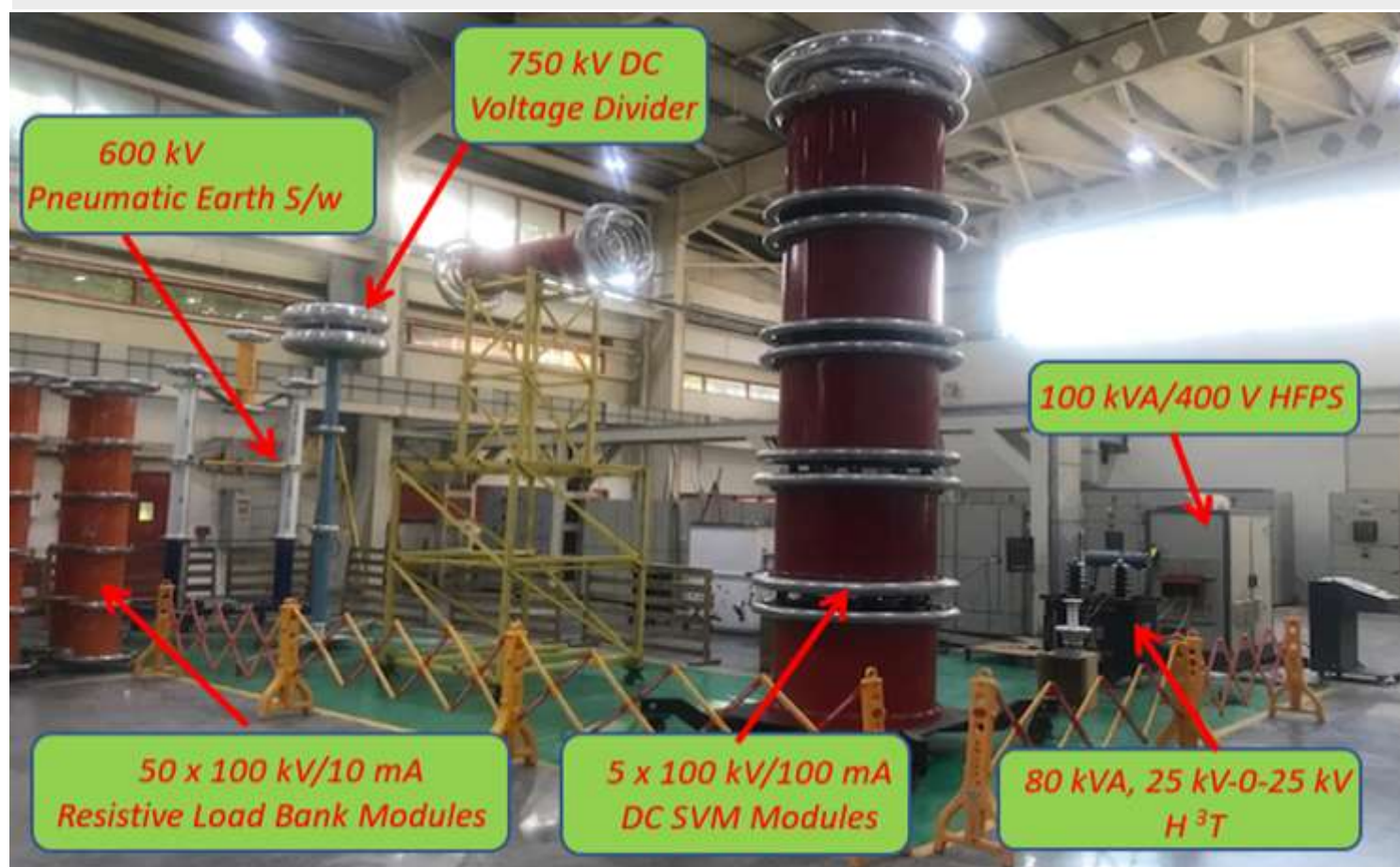
A Ultra High Voltage Power Supply (UHVPS) of 500 kV/100 mA DC is serving dual purpose of High Energy Particle Acceleration and Test Facility for High Voltage Systems at the Institute.

This power supply has been designed and developed indigenously and is operational since 2021. The power supply is based on Symmetrical Cockcroft-Walton Voltage Multiplier (SVM) topology, featuring ease of construction, operation, maintenance and up-gradation.

All the components of this power supply viz. High Frequency (20 kHz) Power Source (HFPS); High power, High voltage, and High frequency Transformer (H^3T); 100 kV DC SVM modules; DC Voltage & Current measurement sensors, Pneumatic Earth Switch, and Load Banks are built by SME's of India.

The integrated testing and commissioning of this power supply with 14 MeV Neutron Generators facility has demonstrated 20 mA Deuterium Ion Beam Acceleration. This UHVPS is regularly used as Test Facility for High Voltage Systems, Equipment and Components viz. Transformers, Switches, Capacitors, Diodes, Resistors, Cables, Insulators, Bushings etc.

The UHVPS has also been designed with provisions for up-gradation up to 1000 kV/ 100 mA rating, when it is necessary.



Actual Picture of UHVPS System at IPR

Talk on Cyber Security Awareness

A talk on Cyber Security Awareness was organized at IPR on 18 October 2024. The talk was delivered by **Mr Vivek Joshi**, School of Information Technology, Artificial Intelligence and Cyber Security, Rashtriya Raksha University, Ahmedabad. The speaker discussed various aspects of cyber security with case studies on phishing. He also highlighted the measures to tackle cyber threats.



Ms. Kirti Mahajan, Chief Information Security Officer, IPR, introducing the Speaker



Mr Vivek Joshi delivering the talk

As part of **DAE Platinum Jubilee Celebrations** the following talks were organized at Institute for Plasma Research

Title: **Shell stabilized spherical tokamak**

Speaker: **Prof. Avinash Khare, Indian National Science Academy, New Delhi**

Date: **03rd October 2024**

Abstract: A novel spherical tokamak design with a hot diamagnetic core and a cold paramagnetic shell is proposed. The plasma in the shell is assumed to be in a force-free relaxed state. The toroidal field in the core is generated by the dynamo action of the shell current. This design obviates the need for a single-turn toroidal field coil or the center post in spherical tokamaks. As this design has no central hole, a spherical tokamak with superconducting coils can be designed. The whole configuration may be sustained by coaxial helicity injection. Equilibria with diamagnetic core and paramagnetic shell are constructed analytically and numerically by solving the relevant Grad-Shafranov equation. It is indicated that the paramagnetic shell provides robust stability (ballooning modes, interchange modes) to the entire configuration. The advantage of the scheme for fusion reactor due to reduced ohmic dissipation is pointed out.



Prof Avinash Khare delivering the Talk



Audience at the Colloquium Talk

NIOH में हिंदी व्याख्यान

राष्ट्रीय व्यावसायिक स्वास्थ्य संस्थान (NIOH), भारतीय चिकित्सा अनुसंधान परिषद (ICMR) के तत्वावधान में एक प्रमुख संस्थान है। NIOH में दिनांक 27 सितंबर 2024 को हिंदी पखवाड़ा समारोह 2024 का समापन सत्र आयोजित किया गया। इस अवसर पर श्री राज सिंह, वैज्ञानिक अधिकारी-एच ने "नेट जीरो एमिशन और इसमें परमाणु ऊर्जा का योगदान" विषय पर हिंदी में व्याख्यान दिया। श्री राज सिंह ने परमाणु ऊर्जा के बढ़ते कदम और भविष्य में पर्यावरण के अनुकूल इसके संभावित उपयोग एवं समाज में इसके योगदान पर चर्चा की। उन्होंने इस तकनीकी विषय को बहुत ही सरल हिंदी भाषा में विस्तार के साथ बताया। व्याख्यान के अंत में उत्सुक श्रोताओं के प्रश्नों के भी उत्तर दिये। इस कार्यक्रम के पश्चात् उन्होंने NIOH में हिंदी पखवाड़ा समारोह के दौरान आयोजित प्रतियोगिताओं के विजेताओं को पुरस्कृत किया।



श्री राज सिंह व्याख्यान देते हुए

Date	Institution	Visitors
15-Oct-2024	Vishwakarma Government Engineering College,	60 Students (Power Electronics) and 02 Faculty
16-Oct-2024	GEMS Genesis International School, Ahmedabad	55 Students (9-12 Std) and 03 Teachers



Students from Vishwakarma Government Engineering College, Chandkheda during visit to IPR



Students from GEMS Genesis International School, Ahmedabad during visit to IPR



Plasma Exhibition @ Sir Pratap School, Idar, Gujarat

IPR Gandhinagar, in association with Sir Pratap School, Idar, Gujarat organized an exhibition on Plasma, "The Fourth State of Matter" during 25-27 Sept, 2024. This program is part of IPR's scientific outreach activity in various states of India under the auspices of "70 years of DAE" celebrations.

The programme consisted of an exhibition on plasma, its applications as well as introductory talks on plasma for visiting students. Fifty students from the host school were trained by IPR staff to explain the various exhibits to visiting public. Over 2000 students and teachers from over 22 schools in and around Idar visited the exhibition.



Plasma Exhibition @ Sir Pratap School, Idar, Gujarat



Photos of the Plasma Exhibition at Sir Pratap School, Idar, Gujarat

Plasma Exhibition @ Noble University, Junagadh, Gujarat

IPR Gandhinagar, in association with Noble University, Junagadh, Gujarat organized an exhibition on Plasma, "The Fourth State of Matter" during 8-10 Oct, 2024. This program is part of IPR's scientific outreach activity in various states of India under the auspices of "70 years of DAE" celebrations.

The programme consisted of an exhibition on plasma, its applications as well as introductory talks on plasma for visiting students. Fifty students from the host school were trained by IPR staff to explain the various exhibits to visiting public.

Over 4300 students and 151 teachers from over 31 schools in and around Junagadh visited the exhibition.



Photos of the Plasma Exhibition at Nobel University, Junagadh, Gujarat

Date	Institution	Visitors
27-Sep-2024	Department of Physics, Guwahati University	06 Students of MSc.



Dr. Rakesh Moulick delivering a lecture



Dr. N. Aomoa explaining the concepts of plasma production



Students from Guwahati University with the Outreach Cell members at CPP-IPR

Workshop on Basic Plasma Physics at CPP-IPR

A Workshop on Basic Plasma Physics was organized at CPP-IPR on 27th September 2024. 38 Students and 3 Faculty members from five Institutions of the Don Bosco University, Assam participated in the workshop. During the workshop, the students visited the CPP-IPR Outreach Exhibition Hall and the Basic Plasma Physics Lab.



Participants of the Workshop on Basic Plasma Physics held at CPP-IPR, Guwahati

Popular Talk

Dr. Daniel Raju, Scientific Officer-H, IPR delivered a popular talk on the title “Under performance or failure of a BIG project - who should be responsible?” The speaker discussed and cited case studies of many scientific projects from across the world. The interactive session was attended by around 100 participants.



Dr. D. Raju delivering the talk



Interactions during the session



Audience attending the talk

Hindi Pakhawada – 2024 @ CPP-IPR

CPP-IPR observed Hindi Pakhawada - 2024 between September 26 and October 1, 2024. Several competitions among staff members were held, including Hindi Poem Recitation, Self-composed Hindi Poem Writing, Storytelling Telling in Hindi, and Dictation. Mr. Devendra Modi, Scientific Officer-F, IPR delivered an invited talk on 26th September, 2024 on general safety guidelines. Dr. Sharmila Taye, Assistant Director (Language), Department of Official Language, Maligaon, Guwahati delivered an invited talk on the importance of Hindi as an official language during the closing ceremony on October 1, 2024.



Glimpses of the Hindi Pakhwada 2024 at CPP-IPR, Guwahati

- ◆ **Talks presented at 21st International Congress on Plasma Physics (ICPP 2024), Ghent, Belgium, 08-13 September 2024**
 - **Mr. Anoop Singh**, gave a talk on "One-Dimensional Model for Plasma-Flow from the Accretion Disk towards the Neutron-Star Poles"
 - **Ms. Arzoo Malwal**, gave a talk on "Plasma boundary simulations of limiter ramp-up phase of ITER"
 - **Dr. T. K. Borthakur**, gave a talk on "Pulsed Hydrogen Plasma Stream Interaction on Tungsten Substrate"
- ◆ **Talks presented at DAE-BRNS 1st National Conference on Pulse Power Science, Technology and Applications (PPSTA-2024), BARCF, Vishakhapatnam, 12-14 September 2024**
 - **Dr. Shantanu Karkari**, gave an invited talk on "Coaxial Plasma Accelerator: Applications in Fusion Technology"
 - **Mr. Sunil M. Belsare**, gave a talk on "Enhancing High Heat Flux Test Facility Performance: The Potential of Indigenous Electron Beam Systems"
- ◆ **Dr. Sudhirsinh J. Vala**, gave a talk on "Characterization of D⁺ Species in the 2.45 GHz ECRIS for 14-MeV Neutron Production" at 26th International Workshop on ECR Ion Sources (ECRIS-2024), Darmstadt, Germany, 15-19 September 2024
- ◆ **Dr. Mukesh Ranjan**, gave an invited talk on "Semiconductor processing using plasma and ion beams" at International Conference on Semiconductor Technologies - Materials to Chips (ICST-2024), Amity Institute for Advanced Research and Studies (Materials & Devices), Noida, 18-20 September 2024
- ◆ **Dr. Snehanshu Maiti**, gave a talk on "Transport in turbulent fluids" on 26th September 2024
- ◆ **Dr. Navin Sharma**, Devi Ahilya University, Indore, gave a talk on "Investigation of Dielectric barrier discharge based Cold Plasma Sources for the generation of Reactive oxygen and Nitrogen Species and Vacuum Ultraviolet (VUV)/ Ultraviolet(UV) Radiation" on 27th September 2024
- ◆ **Mr. Chirag Sedani**, gave a talk on "Use of Artificial Neural Networks for the Study of Thermo-Hydraulic Properties of Lithium Ceramic Pebble Bed" on 30th September 2024
- ◆ **Prof. Santanu Bhattacharyya**, National Institute of Technology, Rourkela, gave a talk on "Ceramic Technology: Art, Science, Technology, or Innovation?" on 30th September 2024
- ◆ **Prof. Avinash Khare**, Indian National Science Academy, New Delhi, gave a talk on "Shell stabilized spherical tokamak" on 03rd October 2024 (**Colloquium #338**)
- ◆ **Dr. R K Sharma**, Bhabha Atomic Research Centre (BARC), Mumbai, gave a talk on "High Voltage Energy Storage Capacitors" on 16th October 2024
- ◆ **Dr. Mukesh Jewariya**, Council of Scientific and Industrial Research (CSIR), New Delhi, gave a talk on "Terahertz Computed Tomography and its Prospectus" on 17th October 2024
- ◆ **Dr. Thiagarajan Maadhu**, Vellore Institute of Technology, Tamil Nadu, gave a talk on "Synthesis, growth and physic- chemical investigations on Morpholinium based crystals for non-linear application" 18th October 2024
- ◆ **Dr. Radhe Shyam**, gave a talk on "Investigation of ion-assisted pattern formation scenario on the soda-lime glass substrate and erosion testing of BN-based composites" on 22nd October 2024

Upcoming Events

- ◆ 8th Asia-Pacific Conference on Plasma Physics (AAPPS-DPP2024), Malacca, Malaysia, 3-8 November 2024; <https://www.aappsdp.org/DPP2024/index.html>
- ◆ National Conference on Frontiers of Ion Beam Science (FIBS-2024), Institute of Physics, Bhubaneswar, 4-7 November 2024; <https://iopb.res.in/fibs2024/>
- ◆ 4th Conference on Plasma Simulation (CPS-2024), Indian Institute of Geomagnetism (IIG), Mumbai, 11-13 November 2024; <https://www.ipr.res.in/CPS/cps2024/index.html>

Upcoming Events

- ◆ ANS Winter Conference and Expo, Orlando, United States, 17-21 November 2024; <https://www.ans.org/meetings/wc2024/>
- ◆ Indian Nuclear Society's Annual Conference (INSAC-2024): Regulatory Framework for Nuclear Renaissance, DAE Convention Centre, Anushaktinagar, Mumbai, 19-21 November 2024; <https://www.insac2024.org/>
- ◆ 29th National Conference on Cryogenics and Superconductivity (NCCS-29), Inter-University Accelerator Centre (IUAC), New Delhi, 26-29 November 2024; <https://nccs29delhi.com/>
- ◆ Experimental Physics and Industrial Control System (EPICS) India Collaboration Meeting, Tata Institute of Fundamental Research, Hyderabad, 28-29 November 2024; <https://epic-innovation.org/happenings/events/epics-india-collaboration-meeting-2024/>

Conference Presentations

Dr. Sudhirsinh J. Vala, gave a talk on "**Characterization of D⁺ Species in the 2.45 GHz ECRIS for 14-MeV Neutron Production**" at 26th International Workshop on ECR Ion Sources (ECRIS-2024), Darmstadt, Germany held during 15-19 September 2024



Dr. Sudhirsinh J. Vala giving talk

Dr. Mukesh Ranjan, gave an invited talk on "**Sequential growth over patterns a way to minimise optical anisotropy**" at Third International Conference on Functional Materials and Applied Physics (FMAP-2024) held during 18-19 October 2024. The conference was organized by Department of Physics, SVNIT Surat.



Dr. Mukesh Ranjan giving talk

IPR SIRC conducted Information Literacy session

IPR SIRC (Library) conducted an Information literacy session on INSPEC on the Engineering Village platform. The presentation gave an overview of the tool with an emphasis on the pattern of publishing and academic collaborations of IPR. The session was attended by more than 40 participants including staff and research scholars.



Mr. Saroj Das introducing the speaker



Audience attending the session

IPR Staff Club organized Table Tennis Men's Doubles tournament. A total of 8 teams (16 players) participated in the indoor event and 14 matches were played in the league round. The final match was played on 27th Sep, 2024 at IPR Table Tennis hall. The results and participants of final match are given in Table below.

Tournament	Result
Men's Table Tennis Doubles	Winner: Shri Vrushank Mehta and Shri Saurabh Dwivedi Runner-up: Shri Arvind Kumar Shri Madeena Valli



Dr. Subroto Mukherjee, Dean (Admin) giving Winners prize



Shri Niranjn Vaishnav, CAO giving the runner-up prize



(L-R): Shri Sandeep Gupta (Sports Secretary), Finalists (Madeena Valli and Arvind Kumar), Dr. Paritosh Chaudhuri, Shri Niranjn Vaishnav, Dr. Subroto Mukherjee, Finalists (Vrushank Mehta and Saurabh Dwivedi), Shri Vijay Vasava, Shri Deepak Mandge (Joint Sports Secretary)

Title	Page No	Title	Page No
हिंदी पखवाड़ा समारोह 2024	01-03	NIOH में हिंदी व्याख्यान	09
Development of Large Size-noncircular shape Spring Energized Metallic Seal	04	Academic Visits to IPR	10
Development of Copper Electrodeposition over full size accelerator grid segment	04	Plasma Exhibition	10-12
IPR AIC-Plasmatech Foundation AGM and Incubation Agreements	05	Academic Visits to CPP-IPR	13
Swachhata Pakhwada 2024	06-07	Workshop on Basic Plasma Physics at CPP-IPR	13
500 kV/100 mA DC Ultra High Voltage Power Supply (UHVPS) at IPR	08	Popular Talk	14
Talk on Cyber Security Awareness	08	Hindi Pakhawada – 2024 @ CPP-IPR	14
DAE Platinum Jubilee Talk - Colloquium # 338	09	Past Events/ Upcoming Events	15-16
		Conference Presentations	16
		Staff Club Indoor Games	17
		Know Your Colleague	18

Know Your Colleague

Mr. Omkar Rajendra Chandratre completed his diploma in mechanical engineering from the Government Polytechnic Nashik (Maharashtra) in the year 2013. He joined IPR in 2016 as Technical Assistant-B in the Large Cryogenic Plant & Cryo System Division (LCPC Division). After joining IPR, Omkar assisted in the development of indigenous cryogenic plant. He was actively involved in the design, fabrication, installation, and safe operation of indigenously developed Helium plant. He has experience with the installation of cryogenic turbines and their safe operation, which is a critical component of liquid helium plant. He is also actively involved in many subsystems of the liquid helium plant, like the vacuum system, instrumentation and control system, and testing of plant components. He did his graduation in mechanical engineering (B.E.) from K.K. Wagh Institute of Engineering Education and Research Nashik (Maharashtra) in the year 2017. Currently Mr. Chandratre is working as a Scientific Assistant-D. He likes to play the musical instrument harmonium.



Mr. Omkar R Chandratre

Brainstorming the Group Insurance at IPR



A discussion session lead by Dr. Paritosh Chaudhuri (L) on the Group Insurance for IPR held on 18 Oct 2024

Quote of the Month

"Great things are done by a series of small things brought together."

--Vincent Van Gogh

The IPR Newsletter Team

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