

Issue 134
September 2024

The 4th State

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



78th Independence Day Celebration at IPR

The 78th Independence Day was celebrated at IPR on 15th August 2024 with a lot of enthusiasm. On this occasion, Director IPR unfurled the National Flag followed by the National Anthem. He addressed the gathering of IPR staff and family members. During his speech, he highlighted the scientific accomplishments of IPR over the last year, and he also appreciated the contributions of the staff members for the various achievements and progress made during the year.

This event was followed by various cultural and sports activities for the staff as well as their family members, especially for the children with lots of fun and games.

The programme concluded with prize distribution and lunch.



Director IPR unfurling the National Flag and addressing the staff and guests



(L) Security Staff during the National Anthem (R) Director taking the Guard of Honour from the Security Staff



Images from the Independence Day celebrations at IPR

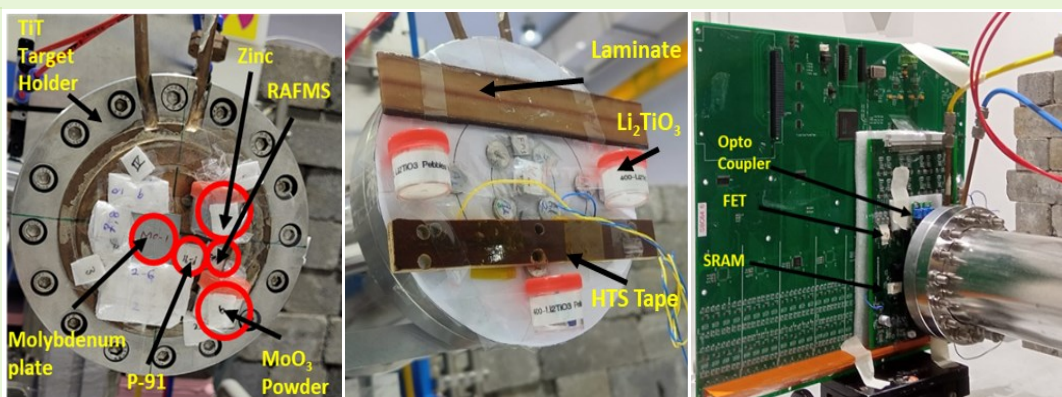
Lab-Scale Experiment of 14 MeV Neutron Irradiation for component damage studies at IPR

IPR has been operating and is operating an accelerator-based 14 MeV neutron facility, which can have a maximum output of 5×10^{12} n/sec. The facility has been used for the first time for two kinds of neutron irradiation studies:

- Mo-99 is an important medical radioisotope. It decays into Mo-99m which is used for diagnostics of diseases. The use of 14 MeV neutron generators for producing medical radioisotopes has been demonstrated abroad. A feasibility study is also part of IPR's plans. Accordingly, Molybdenum metal plate and Molybdenum Trioxide (MoO_3) powder were irradiated with neutrons. Radioisotope Mo-99 of specific activity 14.54 kBq/gm in Mo plate and Mo-99 of specific activity 0.95 kBq/gm in MoO_3 powder were generated. For generation of radioisotopes Cu-64 and Cu-67, Zinc metal powder was irradiated and 30.33 kBq/gm of Cu-64 and 0.28 kBq/gm of Cu-67 were generated.
- The intense 14 MeV neutron flux from fusion reactors would pose problems for near-reactor components. It is necessary to determine the lifetime of electronic components in such an environment. Accordingly, electronics components such as FET, Optocoupler, SRAM, ADC and INA were irradiated with 14 MeV neutrons to study radiation induced damage.

These components were irradiated up to different neutrons fluence in a series of steps, with performance testing after each step. For example, the Optocoupler was found to be partially damaged at a neutron fluence of 5.31×10^{11} n/cm² and fully damaged at 1.77×10^{12} n/cm².

**High Impact Work submitted to DAE*



Irradiation of various samples and electronic components

Improvements in ion confinement mechanism in a triple-gridded IECF device

Improvements in the ion confinement mechanism in an inertial electrostatic confinement (IECF) device have been explored using kinetic simulations. Previously, a neutron generation rate of 10^6 neutrons per second in a single-gridded IECF device was achieved, but higher neutron rates and improved plasma confinement are necessary for broader applications of the device. Hence, investigation on the feasibility of employing a triple-grid arrangement instead of a single grid was explored for its advantages over the other in terms of ion confinement time. Our computational models, using the 2D-3V XOOPIC code, indicated that the triple-grid device, with its optimized potentials, can significantly enhance ion confinement. The formation of multiple potential wells within the central cathode grid establishes a crucial confinement mechanism, making the IECF device an efficient neutron generator. 3D potential profiles demonstrate the reduction of potential well depth and the formation of hill-like structures [Fig. 1(b)] outside the central cathode compared to the single-grid case [Fig. 1(a)].

Application of a positive potential to the external grid leads to the creation of potential hills, which are responsible for forming thick ion beam channels. The models show that the triple-grid design directs ion beams to the center more effectively [Fig. 2 (b)], in contrast to the scattered ion distribution in the single-grid design [Fig. 2(a)]. This results in longer ion lifetimes in the triple-grid system due to its modified electrostatic fields. In single-grid IECF device, the primary causes of ion loss are chaotic ion trajectories and interactions with residual gases.

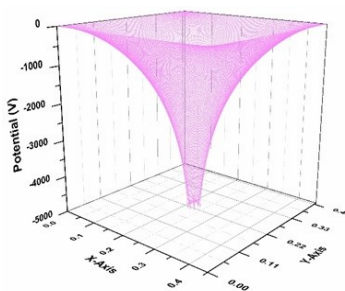


Fig 1 (a)

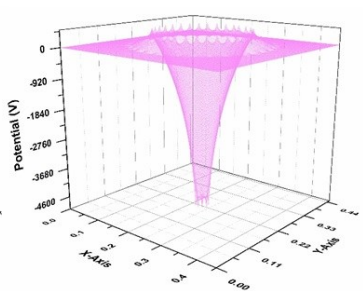


Fig 1 (b)

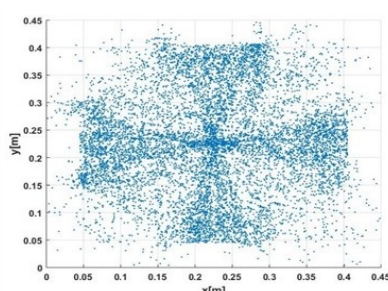


Fig 2 (a)

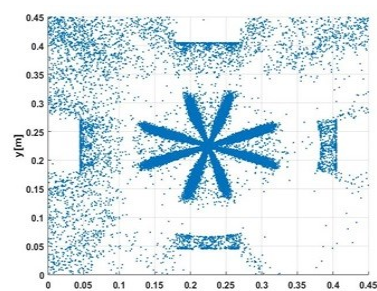


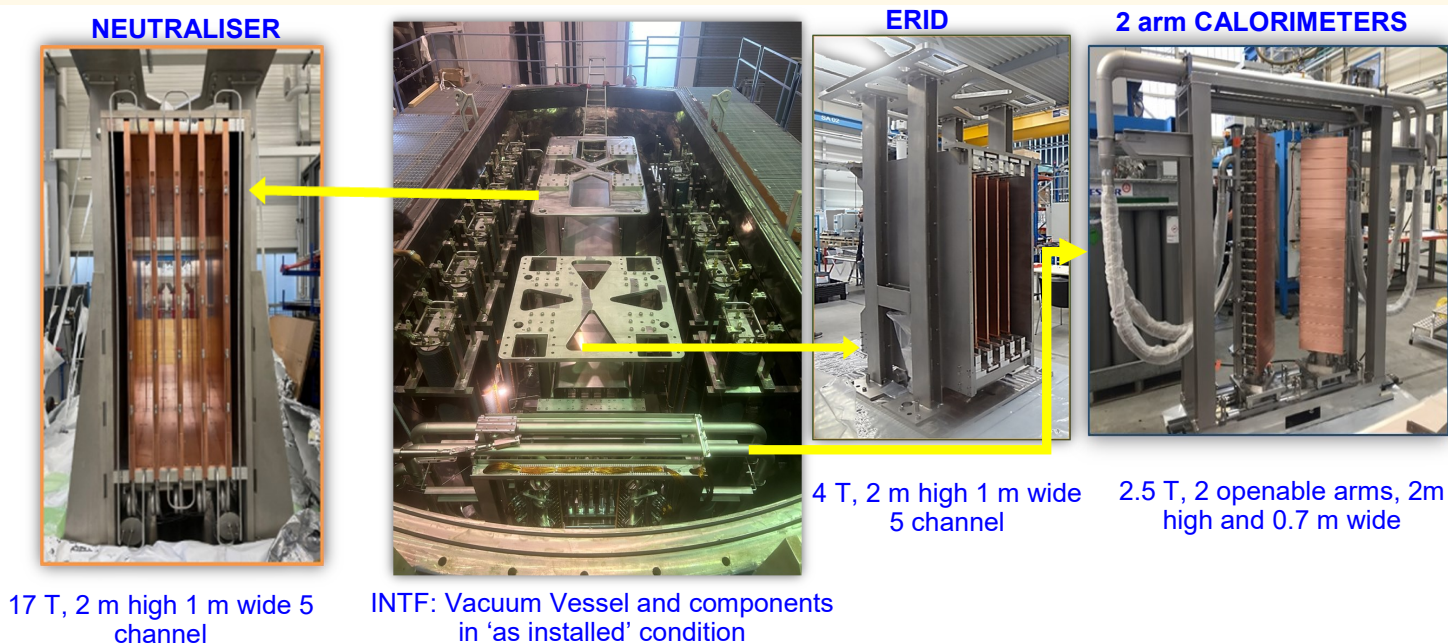
Fig 2 (b)

Realization of Beam Line Components for ITER DNB

Beam Line Components (BLC) for ITER/ INTF Diagnostic Neutral Beam (DNB) system have been successfully manufactured, installed and accepted at site after testing at INTF, ITER India Lab, IPR. The BLC's include a 5 channel multi-panel Neutralizer, Electrostatic Residual Ion Dump (ERID) and a 2-arm openable calorimeter. The gas in the neutralizer results in partial neutralization of the accelerated beam from the source. The ionic component of the partially neutralized beam is separated by an electric field between the ERID panels followed by neutral beam diagnosis and characterization at the calorimeter.

The manufacturing highlights include the use of ITER grade CuCrZr for the ERID panels produced by NFTDC Hyderabad (the material which was developed under collaboration between ITER India and NFTDC) and establishing several non-conventional manufacturing technologies in the areas of precision machining, deep drilling, high energy beam welding of dissimilar material, electrodeposition etc. and development of procedures to qualify the component for He leak tightness at elevated temperatures up to 120°C.

After integration of the components in the INTF vessel the qualification tests included pressure test up to 25 bars, Integral leak test (at 25 bar of He with leak tightness of 10^{-9} mbar l/s), HV test for ERID and the movement mechanism for the calorimeter actuator in vacuum.

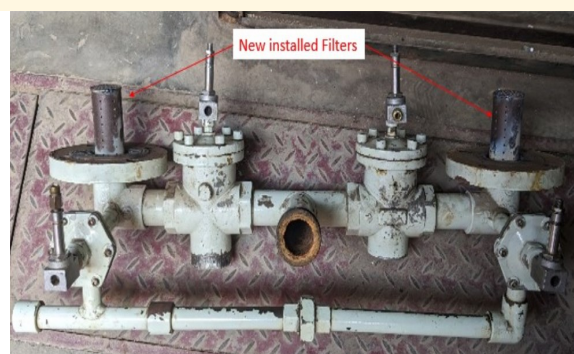
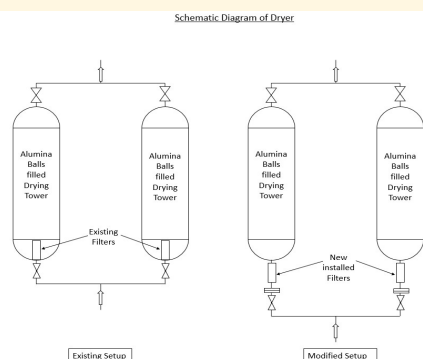


In-house Development of Alumina-Air filter for Air Dryer of Pneumatic system

The pneumatic system within the SST-1 Cryogenic division is tasked with providing pressurized air at a pressure of 9.5 bar (g) to operate various electro-pneumatic devices. This system comprises an Air screw compressor and a Heatless desiccant Air dryer with a capacity of 200 CFM. Prior to being supplied to different divisions of SST-1, the air undergoes compression and drying. The drying process involves the use of Alumina balls, each measuring 4-6 mm in diameter, to achieve a dew point of -30°C.

During recent maintenance, it was observed that the dew point of the dried air was not reaching the required level. Upon investigation, it was discovered that the alumina stored in the pressurized tower of the dryer was leaking through the main air discharge line due to a damaged in-built filter, resulting from corrosion. Replacement of the filter was deemed necessary, but due to structural constraints, traditional installation methods would have required cutting the entire drying tower.

To address this issue, a new filter was designed and developed in-house. This filter was engineered to be installed without the need for cutting the drying tower, ensuring a seamless flow of air while preventing alumina drainage. Following the installation of these filters, the dew point of the air reached the required level, and the system resumed normal operation without disruption.



(L) Schematic of the Dryer (R) Newly Installed Dryer Filters

प्लाज्मा अनुसंधान संस्थान द्वारा 8 एवं 9 अगस्त 2024 को "विकसित भारत 2047 - आपके संस्थान/संगठन का योगदान" विषय पर स्थानीय हिंदी संगोष्ठी का आयोजन किया गया। इस संगोष्ठी में नराकास - गांधीनगर, नराकास-अहमदाबाद(कार्यालय) एवं नराकास-अहमदाबाद(बैंक) के सदस्य कार्यालयों के प्रतिनिधियों ने भाग लिया। संगोष्ठी का उद्घाटन 8 अगस्त 2024 को सुबह 10 बजे आईपीआर के सेमिनार हॉल में किया गया। उद्घाटन सत्र में मुख्य अतिथि के रूप में श्री यशवंत यू चव्हाण, प्रधान मुख्य आयकर आयुक्त गुजरात एवं अध्यक्ष नराकास, अहमदाबाद, सम्मानीय अतिथि के रूप में श्री अश्विनी कुमार, महाप्रबंधक एवं अंचल प्रमुख, अहमदाबाद अंचल, बैंक ऑफ बड़ौदा तथा अध्यक्ष नराकास, अहमदाबाद (बैंक) तथा डॉ. अनिल भारद्वाज, प्रतिष्ठित वैज्ञानिक एवं निदेशक, भौतिक अनुसंधान प्रयोगशाला, अहमदाबाद एवं विशिष्ट अतिथि के रूप में श्री सुनील सिन्हा, प्रमुख-बड़ौदा एपेक्स अकादमी एवं अध्यक्ष नराकास, गांधीनगर उपस्थित थे। सभी गणमान्य अतिथियों द्वारा दीप प्रज्वलन किया गया। कार्यक्रम के प्रारंभ में श्री राजसिंह ने सेमिनार में भाग लेने वाले सभी अतिथियों और प्रतिभागियों का स्वागत किया तथा सेमिनार के मुख्य उद्देश्य को स्पष्ट रूप से समझाया, जिसमें 2047 तक विकसित भारत के विजन में योगदान देने में सभी कार्यालयों की भूमिका पर उन्होंने जोर दिया। संस्थान के निदेशक डॉ. शशांक चतुर्वेदी ने मंचासीन अतिथियों का स्वागत किया और इस संगोष्ठी को गांधीनगर नराकास, अहमदाबाद कार्यालय नराकास तथा अहमदाबाद बैंक नराकास के पूर्ण सहयोग के लिए आभार व्यक्त किया और सभी प्रतिभागियों को संगोष्ठी के विषय पर अपने संगठन की सार्थक भूमिका को सरल हिंदी भाषा में साझा करने पर विशेष बल दिया। इस अवसर पर श्री सुनील सिन्हा ने श्रोताओं को संबोधित करते हुए भारत की वर्तमान युवा शक्ति को जागरूक रहने एवं उपलब्ध संसाधनों का समुचित उपयोग करने की सलाह दी। उन्होंने भविष्य में देश के विकसित होने की संभावनाओं पर चर्चा की तथा भारतीय बैंकों द्वारा विकसित भारत में योगदान देने में निभाई जाने वाली महत्वपूर्ण भूमिका पर प्रकाश डाला। श्री अश्विनी कुमार जी ने सभा को संबोधित करते हुए कहा कि भारतीय बैंक अपने समृद्ध इतिहास और हमारे देश के आर्थिक विकास के प्रति अटूट प्रतिबद्धता के साथ, विभिन्न महत्वपूर्ण क्षेत्रों का समर्थन करने में अग्रणीय रहा है। उन्होंने बताया कि भविष्य में आर्थिक विकास और आत्मनिर्भरता के लिए भारत की आकांक्षाओं का समर्थन करने में बैंक की भूमिका और भी महत्वपूर्ण होगी।

श्री अनिल भारद्वाज जी ने अपने संबोधन में बताया कि परमाणु ऊर्जा विभाग, भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) और अन्य केंद्रीय सरकारी कार्यालय 2047 तक विकसित भारत के विजन की दिशा में मिलकर काम कर रहे हैं। उन्होंने अनुसंधान संस्थानों के बीच प्रभावी संचार और समन्वय सुनिश्चित करने में हिंदी की महत्वपूर्ण भूमिका को इंगित किया।

मुख्य अतिथि के रूप में आमंत्रित श्री यशवंत यू चव्हाण जी ने प्लाज्मा अनुसंधान संस्थान की राजभाषा कार्यान्वयन समिति को इस हिन्दी संगोष्ठी के आयोजन के लिए बधाई दी और इस यात्रा में अहमदाबाद और गांधीनगर के न.रा.का.स कार्यालयों की भूमिका पर ध्यान केंद्रित किया। उन्होंने बताया कि इस प्रकार के कार्यक्रमों का आयोजन राजभाषा के प्रचार-प्रसार को नई दिशा देता है। साथ ही उन्होंने जटिल भाषा के प्रयोग से बचने और प्रचलित अंग्रेजी शब्दों के प्रयोग की भी सलाह दी और कहा कि यह संगोष्ठी एक ऐसा मंच है जो केन्द्र सरकार के अंतर्गत विभिन्न संस्थाओं द्वारा किये जा रहे कार्यालयीन कार्यों को जानने का सुअवसर देगा।

इसके पश्चात् मंचासीन महानुभागों द्वारा संगोष्ठी की सारांश पुस्तिका का विमोचन किया गया, जिसमें सभी प्रतिभागियों द्वारा दी जाने वाली प्रस्तुतियों के सारांश सम्मिलित थे। इस अवसर पर श्री अनिल भारद्वाज ने "भारतीय सौर मंडल अन्वेषण कार्यक्रम" विषय पर एक विशिष्ट व्याख्यान दिया और प्रथम सत्र में श्रीमती कविता ठाकुर, अंचल प्रमुख, अहमदाबाद अंचल, सेंट्रल बैंक ऑफ इंडिया ने "विकसित भारत में बैंकिंग का योगदान" विषय पर विशिष्ट व्याख्यान दिया।

"विकसित भारत में अपने संगठन/संस्थान का योगदान" विषय पर व्याख्यान देने के लिए इस दो-दिवसीय संगोष्ठी में विभिन्न केन्द्रीय सरकारी कार्यालय, जैसे भौतिक अनुसंधान प्रयोगशाला, आयकर विभाग अहमदाबाद, अंतरिक्ष उपयोग केन्द्र, भारतीय प्रौद्योगिकी संस्थान-गांधीनगर, भारतीय प्रबंधन संस्थान, अहमदाबाद, सेंट्रल बैंक ऑफ इंडिया, इंडियन ऑयल कॉर्पोरेशन, गुजरात केन्द्रीय विश्वविद्यालय, जनगणना कार्य निदेशालय, भारतीय मानक ब्यूरो, सीएजी, आयुर्वेद अनुसंधान संस्थान, राष्ट्रीय न्यायालयिक विज्ञान विश्वविद्यालय, राष्ट्रीय उत्पादकता परिषद, केंद्रीय सरकार स्वास्थ्य सेवा, वस्तु एवं सेवा कर एवं प्लाज्मा अनुसंधान संस्थान के प्रतिनिधियों ने भाग लिया। इस दो दिवसीय संगोष्ठी के दौरान कुल 41 प्रस्तुतिकरण दिये गये, जिसमें 2 विशिष्ट व्याख्यान, 8 आमंत्रित व्याख्यान, 12 मौखिक व्याख्यान एवं 19 पोस्टर शामिल थे। दो दिन 3 श्रेष्ठ पोस्टर प्रस्तुतियों को सम्मानित किया गया।



सारांश पुस्तिका का विमोचन करते हुए माननीय अतिथिगण



उद्घाटन समारोह में दीप प्रज्वलन करते हुए माननीय अतिथिगण



श्री यशवंत चव्हान, प्रधान मुख्य आयकार आयुक्त



डॉ. अनिल भारद्वाज



श्री सुनील सिन्हा



श्रीमती कविता ठाकुर



श्री अश्विनी कुमार



डॉ. शशांक चतुर्वेदी



श्री राजसिंह



माननीय अतिथियों का स्वागत करते हुए संस्थान के निदेशक (ब), डीन (आर एंड डी) (म) डीन (प्रशासन) (द)



संगोष्ठी के दौरान उपस्थित प्रतिभागियों का समूह फोटो

ITSO-2024 Induction

7

Six newly selected IPR Trainee Officers (ITSO) of the 2024 batch joined IPR on 26th July 2024 for 1 year training programme. During the induction programme, Director IPR welcomed and interacted with them, gave a brief presentation about IPR and its activities. The ITSOs then visited the different laboratories at IPR. These ITSOs are presently taking 8 months training in BARC Training school, Mumbai and the remaining training period will be completed in IPR.



Director, Dr. Shashank Chaturvedi briefing the activities of IPR to the ITSOs



Interactions during the Welcome Lunch



Group Photo of the ITSOs with IPR Officials

Date	Institution	Visitors
23-July-2024	LDRP-Institute of Technology and Research, Gandhinagar	35 Students of B.E.(EC) and 3 faculty members
23-July-2024	Sardar Vallabhbhai Global University, UCP Institute of Technology, Ahmedabad	27 students of B.E.(IT) and 2 faculty members
24-July-2024	Shree Swaminarayan Institute of Technology, Bhat, Gandhinagar	75 students of B.E. (CS) and 2 faculty members
25-July-2024	Shree Swaminarayan Institute of Technology, Bhat, Gandhinagar	75 students of B.E. (IT) and 2 faculty members
26-July-2024	Shree Swaminarayan Institute of Technology, Bhat, Gandhinagar	77 students of B.E. and 2 faculty members
01-Aug-2024	Divya Jyot School, Shela, Ahmedabad	92 students of std. 9 & 10 and 5 teachers
05-Aug-2024	Silver Oak University, Ahmedabad	39 students of B.E. (Chemical) and 2 faculty members
07-Aug-2024	Silver Oak University, Ahmedabad	38 students of B.E. (Electrical) and 2 faculty members
12-Aug-2024	The Millennium School, Surat	8 students of std. 11 & 12 and 2 teachers



Students and teachers of LDRP-Institute of Technology and Research, Gandhinagar during their visit to IPR



Students and teachers of Sardar Vallabhbhai Global University, UCP Institute of Technology, Ahmedabad



Students and teachers of SSIT, Bhat, Gandhinagar during their visit to IPR



Students and teachers of SSIT, Bhat, Gandhinagar during their visit to IPR



Students and teachers of SSIT, Bhat, Gandhinagar during their visit to IPR



Students and teachers of Divya Jyot School, Shela, Ahmedabad during their visit to IPR



Students and teachers of Silver Oak University, Ahmedabad during their visit to IPR



Students and teachers of Silver Oak University, Ahmedabad during their visit to IPR

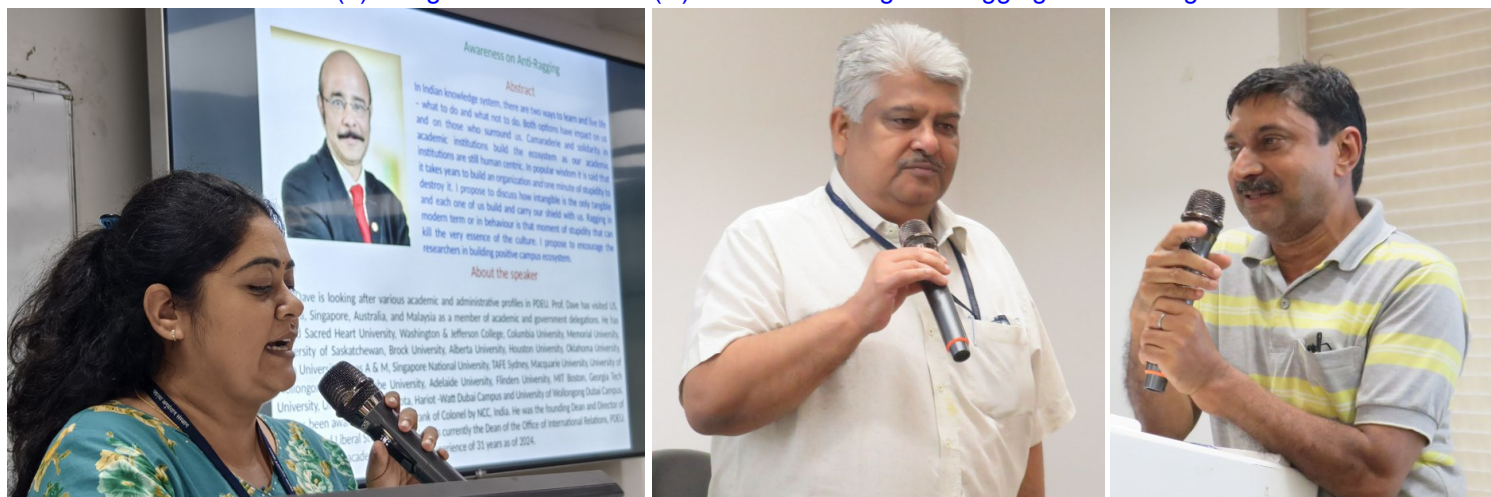


Students and teachers of The Millennium School, Surat during their visit to IPR

To bring the awareness on prevention of ragging among the students, faculty and staff, IPR had observed Anti Ragging Day/ week during 12-18 August 2024. The Dean Academics, Dean Admin, Dean R & D along with the Anti-Ragging Committee and Hostel Committee of IPR had administered the oath against ragging practice on the Anti-ragging day. During the week different competitions were conducted, such as Slogan writing, Logo and Poster making. The Anti-Ragging Day/Week was concluded with an awareness talk by Prof. Dave followed by prize distributions for the winners and runners of the competitions.



Students (L) along with the faculties (R) took the Oath against ragging on 12th August 2024



(L) Dr. Hiral Joshi introduced the speaker Prof. Dave from PDEU (C) Prof. Mukherjee and (R) Dr. P Chaudhuri addressing the audience on Anti-Ragging awareness during the concluding session



(L) Prof. Dave delivering a talk on the awareness of anti-ragging (C) Prof. Chattopadhyay presented a token of appreciation to the speaker (R) Prof. Bandyopadhyay concluded with vote of thanks



Competition	Name of the Winner	Competition
Slogan	Jignesh P Chauhan	Winner
Slogan	Naveen Rastogi	Runner-up
Logo	Sabyasachi Paul	Winner
Logo	Pooja	Runner-up
Poster	Monalisha Sahu	Winner
Poster	Rahul Vishwakarma	Runner-up



Prizes distributed to the winners by IPR Deans



The prize winners with all the Deans, Anti-ragging Committee and the Guest speaker



Winning Logo



Runner-up Logo

Dr. Amreen Ara Hussain, gave a talk on ***“Enhanced Optoelectronic Devices Engineered with Lead (Pb) or Lead-Free Halide Perovskites Tailored for Environmental Stability”*** at **International Conference on Energy and Environmental Materials (E2M-2024)**, Indian Institute of Technology, Indore, 11-13 July 2024.

She has received **Best Presenter Award** presented by Wiley Publisher.

Congratulations!



Dr. Amreen Hussain giving her talk (L) Receiving the award (R)

Ms. Komal, gave a talk on ***“Investigating the effect of impurity seeding on the magnetic and electrostatic edge fluctuations in ADITYA-U tokamak”*** at **10th Plasma Science Society of India-Plasma Scholar's Colloquium (PSSI-PSC2024)**, Indian Institute of Technology, Delhi, 4-6 July 2024, and have received **Best Poster Award**.

Congratulations!



Ms. Komal presenting her poster (L) Receiving the Award (R)

Mr Rajiv Sharma delivered following contributed oral talks at the **29th International Cryogenic Engineering Conference and International Cryogenic Materials 2024 Conference (ICEC/ICMC)**, at CERN, Geneva, Switzerland held during 22-26 July 2024.

He presented the following oral talks:

[1] ***“Development of Glass Fiber Composite Axial Insulating Cryogenic Vacuum Barrier for Superconducting Feeders of SST-1 Tokamak”***

[2] ***“Implementation and Enhancement of Safety Measures in SST-1 Cryogenic System at 77 K and 4.2 K”***



Mr Rajiv Sharma giving his talk

Induction of New Research Scholars

The new batch of total fourteen (14) PhD Research Scholars and one (01) internal candidate joined the PhD program which started on August 1, 2024. The final number consists of 9 female and 6 male students. The program commenced with online enrolment of the students for the PhD in the Homi Bhabha National Institute (HBNI). The enrolment process followed the joining formalities with the help of the IPR administration and opening of their Library accounts with the help of SIRC team.

The candidates also registered for the Academic Bank Credit system and filed an online Anti Ragging Undertaking along with Compliance Submission under the UGC's initiative towards reduction of compliance burden of its stakeholders by completely online submission of the undertakings.

The new academic session for the newly joined batch of the PhD students also started with a class schedule for their first Trimester based on the newly approved syllabus of the PhD course work where a number of elective courses are introduced which are being offered by many expert faculties of IPR.

The first two weeks of the class schedule accordingly provided a complete orientation of the major research activities of IPR to the newly joined students in order for them to make an informed choice of the elective subjects.

On August 5, 2024, the students also had a special address delivered to them by the IPR Director which was followed by a warm reception and special lunch to welcome them to the IPR community. The IPR community wishes a very productive, fruitful and exciting PhD tenure to all newly joined Research Scholars of the batch 2024.



Group Photo of the new Research Scholars at IPR

Adieu

Dr Lalit Mohan Awasthi and Mr. Vishnubhai Prajapati superannuated from services on 31st July 2024 after serving the institute for more than 37 years. A farewell function was organised by the IPR Staff Club on 30th July 2024. IPR newsletter wishes them a Happy and Healthy retired life.



IPR Director felicitating Dr. Awasthi (L) and Mr. Prajapati (R)



Former Prof Y C Saxena conveying his best wishes



Mr. Prajapati and Dr. Awasthi with their colleagues and IPR staff club committee

- ◆ **Mr. H. L. Swami**, gave a talk on "Multipurpose Neutron Irradiation Facility for Nuclear and Space Application" at National Conference on Recent Trends in Materials Science and Technology (NCMST-2024), Institute of Space Science and Technology, Thiruvananthapuram, Kerala, 25-27 June 2024
- ◆ **Talks presented at 10th Plasma Science Society of India-Plasma Scholar's Colloquium (PSSI-PSC2024), Indian Institute of Technology, Delhi, 4-6 July 2024**
 - **Mr. Ajaz Mir**, gave a talk on "Excitation of Precursor Solitons due to Charged Space Debris based on the forced Kadomtsev–Petviashvili model"
 - **Ms. Arzoo Malwal**, gave a talk on "3D plasma start-up studies with structured first-wall panels of ITER"
 - **Mr. Ankit Dhaka**, gave a talk on "Spontaneous Convective Patterns in a Dusty Plasma"
 - **Mr. Anoop Singh**, gave a talk on "Structure of Current Flow in the Magnetosphere of the Accreting Neutron Star"
 - **Mr. Tulchhi Ram**, gave a talk on "Direct O-X-B mode conversion in STARMA device"
 - **Dr. Zubin Shaikh**, gave a talk on "Study of Two-Electron Temperature Plasmas and Their Influence on Ion Acoustic Soliton in A Multi-Pole Line Cusp Magnetic Field Plasma Device (MPD)"
- ◆ **Mr. Meddi Tharun**, gave a talk on "Simulation Study of 4 kV, 5A Modular Multilevel Converter as a Rectifier" at 10th IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT 2024), J.N. Tata Auditorium, IISc, Bangalore, 12-14 July 2024
- ◆ **Talks presented at 29th International Cryogenic Engineering Conference, International Cryogenic Materials Conference 2024 (ICEC/ICMC 2024), Geneva, Switzerland, 22-26 July 2024**
 - **Mr. Vishal Gupta**, gave a talk on "Development, Testing and Application of the Indigenously Built 80 K Sorption Cryopump"
 - **Mr. Uday Kumar**, gave a talk on "Investigation of the thermal emittance properties of multilayer insulation used in cryogenic applications"
 - **Mr. Rajiv Sharma**, gave a talk on "Development of Glass Fiber Composite Axial Insulating Cryogenic Vacuum Barrier for Superconducting Feeders of SST-1 Tokamak"
- ◆ **Dr. P. V. Subhash**, gave a talk on "ITER neutronic status and road map 2024-2028" on 24th July 2024
- ◆ **Mr. Sagar Agrawal**, gave a talk on "Study of process parameters affecting secondary phase formation and grain size in $\text{Cu}_2\text{ZnSnS}_4$ thin film for solar cell application" on 25th July 2024 (Thursday)
- ◆ **Dr. Santanu Banerjee**, Princeton Plasma Physics Laboratory, USA, gave a talk on "The role of edge neutrals in exciting tearing mode activity and achieving flat temperature profiles in LTX- β " on 30th July 2024
- ◆ **Mr. Shishir Biswas**, gave a talk on "Turbulent dynamo action in a 3-dimensional magnetohydrodynamic plasma" on 31st July 2024
- ◆ **Mr. Rakesh L. Tanna**, gave a talk on "Experimental Studies of Confinement Improvement, Disruption Mitigations and Runaway Electrons (REs) Mitigations in ADITYA and ADITYA-U tokamak" on 02nd August 2024
- ◆ **Dr. Varun Vijay Savadi**, gave a talk on "Estimation of tritium losses generated in D-T reaction through 14 MeV Neutron Generator using SDTrimSP Simulations and applicability in other fusion technology areas" on 05th August 2024
- ◆ **Mrs. Purvi Dave**, gave a talk on "Surface Modification of Silicone Catheters to Mitigate Bacterial Adhesion and Biofilm Formation" on 09th August 2024
- ◆ **Mr. Piyush Prajapati**, gave a talk on "An Engineering Study of Concepts for Heat Extraction and Power Conversion from Moderate Sized Tokamak Fusion Reactors" on 09th August 2024
- ◆ **Ms. Kalyani Swain**, gave a talk on "Laser-cluster interaction in strong external magnetic field" on 12th August 2024
- ◆ **Dr. Roshin Raj Sheeba**, gave a talk on "Zeeman Spectroscopy in ADITYA-U Tokamak" on 12th August 2024
- ◆ **Dr. Vivek Patel**, gave a talk on "Modelling, Simulation & Design of Modular Multilevel Converter" on 14th August 2024

- ◆ **Dr. Nimitha K Vijay**, Mahatma Gandhi University, Kottayam, Kerala, gave a talk on "On the Growth and Structure of Nano-structured Zinc Oxide Thin Films in Sol-gel Spin Coating" on 14th August 2024
- ◆ **Prof. Nigam Dave**, Pandit Deendayal Energy University, Gandhinagar, gave a talk on the theme "Anti-Ragging" on 16th August 2024
- ◆ **Dr. Konuru S Lakshmi Kanth**, gave talk on "Investigation of radiation impact on Cu alloys for its application in Beamline components of DNB" on 20th August 2024
- ◆ **Dr. Dinesh Rathod**, gave talk on "Estimation of charge on small objects in plasma environment" on 20th August 2024
- ◆ **Mr. Janmejaya Umeshbhai Buch**, gave a talk on "Study of edge plasma dynamics in tokamak Aditya-U" on 22nd August 2024

Upcoming Events

- ◆ Applied Superconductivity Conference (ASC 2024), Salt Lake City, Utah, USA, 1 - 6 September 2024; <https://www.appliedsuperconductivity.org/asc2024/>
- ◆ 19th International Conference on Plasma Surface Engineering (PSE 2024), Erfurt, Germany, 2 - 5 September 2024; <https://pse-conferences.net/>
- ◆ 21st International Conference on the Physics of Highly-Charged Ions Conference (HCI), Netherlands, 2 - 6 September 2024; <https://arcnl.nl/hci2024/>
- ◆ Joint Varenna-Lausanne International Workshop on the Theory of Fusion Plasmas, Varenna, Italy, 2 - 6 September 2024; <https://varenna-lausanne.epfl.ch/>
- ◆ 3rd Technical Meeting on Plasma Disruptions and their Mitigation, ITER Headquarters, Saint-Paul-lez-Durance, France, 3 - 6 September 2024; <https://conferences.iaea.org/event/380/>
- ◆ 21st International Congress on Plasma Physics (ICPP 2024), Ghent, Belgium, 8 - 13 September 2024; <https://icpp2024.ugent.be/>
- ◆ 10th International Conference on Plasma Medicine & 9th International Workshop on Plasma for Cancer Treatment (ICPM10 & IWPCT9), Portoroz, Slovenia, 8 - 13 September 2024; <https://f6-ge.ijs.si/icpm10/>
- ◆ 24th International Stellarator Heliotron Workshop, Hiroshima, Japan, 9 - 13 September 2024; <https://ishw2024.github.io/>
- ◆ High-Energy Plasma Phenomena in Astrophysics, Garching, Germany, 9 - 20 September 2024; <https://www.munich-iabpp.de/he-plasma-phenomena>
- ◆ IPP Summer University for Plasma Physics and Fusion Research, Greifswald, Germany, 16 - 20 September 2024; <https://www.ipp.mpg.de/summeruni>
- ◆ 13th International Conference on Atomic and Molecular Data and their Applications, Lanzhou, China, 22 - 26 September 2024; <https://icamdata.nwnu.edu.cn/#/>
- ◆ 33rd Symposium on Fusion Technology (SOFT 2024), Dublin City University, Ireland, 22-27 September 2024; <https://soft2024.eu/>
- ◆ Dry Processing Workshop: Plasma & Atomic Scale Process Techniques, University of Stuttgart, Germany, 24-25 September 2024; <https://www.oxinst.com/events/dry-processing-workshop-2024>
- ◆ 19th International Workshop on H-mode Physics and Transport Barriers (H-Mode Workshop 2024), Mito, Japan, 24-27 September 2024; <https://www.qst.go.jp/site/jt60-english/h-mode2024.html>
- ◆ DAE-BRNS Symposium on Current Trends in Theoretical Chemistry (CTTC-2024), DAE Convention Center, Anushakti Nagar, Mumbai, 26-28 September 2024; <https://www.cttcmbai.org.in/>

Green Audit Certificate for IPR

IPR has received the **Green Audit Certificate** for complying with the **Environmental Management System (ISO 14001:2015)** and **Energy Management System (ISO 5001:2018)**.

HBNI appreciated IPR for the Green Audit compliance certificate and also mentioned that IPR is acting as a role model for all HBNI's CIs and OCCs.



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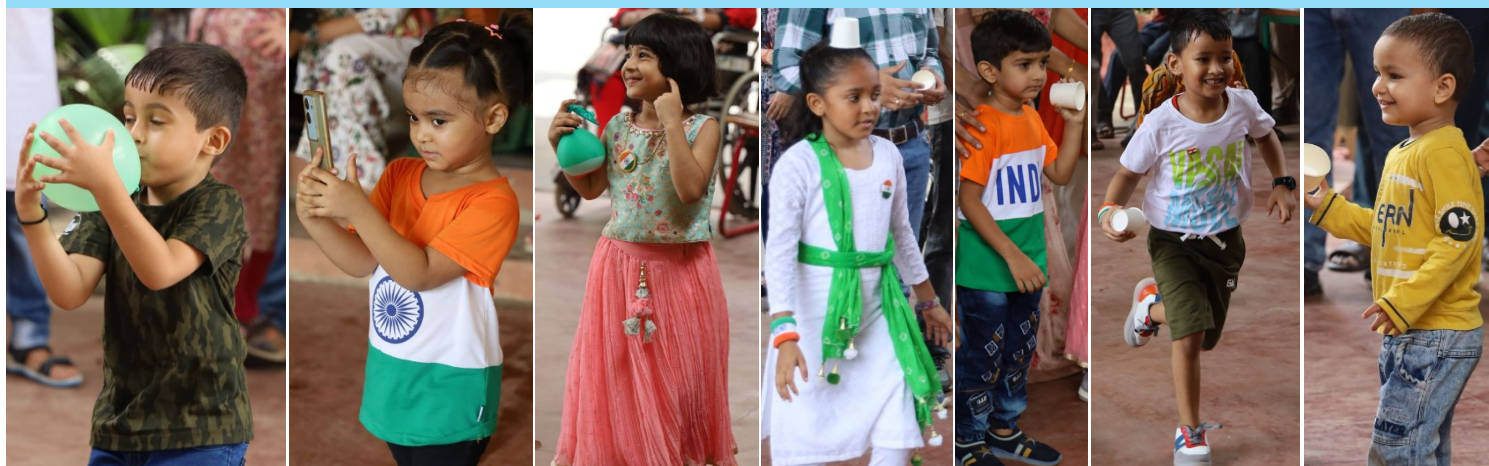
Know Your Colleague



Mr. Chandrasinh D Chauhan

Mr. Chandrasinh Dhirubhai Chauhan currently Scientific Assistant-D, completed his Diploma in Civil Engineering (DCE) from Government Polytechnic, Amreli, Gujarat, in 2007. He joined IPR in 2009 in the Campus Infrastructure Project Division (CIPD) as TA-B. He assisted in new projects related to civil construction works of FCIPT Campus buildings, ITER-IN Lab, Sub-Station Buildings, Additional offices building, Married Students Hostel (MSH) building, Main gate and Security cabins, New R and D laboratory, Auxiliary building and New Pump House Building, Sewage Treatment Plant (STP) and storm water drainage work at IPR campus, and shed building work at FCIPT Campus. Additionally as an Engineer-In-Charge (EIC) he has also supervised civil construction works of – Electromagnetic Launching (EML) shed platform and pathway, civil work for signage board and laying of bilingual signage board at main gate, all Porta cabins/containers, Reinforced Cement Concrete (RCC) platform work, parking work from main to second gate at IPR, RCC platform work and rainwater disposal system work at FCIPT. He enjoys playing cricket and participates in IPR cricket tournaments.

The Spirit of Freedom



Quote of the Month

"The miracle is not that we do this work, but that we are happy to do it."

--Mother Teresa

The IPR Newsletter Team

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