

Issue 141  
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# The 4<sup>th</sup> State

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



## 54th National Safety Week – 2025 at IPR

The 54th National Safety Week was celebrated at IPR from 4-10 March 2025. This year's theme was “**Safety and Well-being Crucial for Viksit Bharat.**” During the week, Institute organized various events and competitions to create safety awareness among its employees at IPR, FCIPT & ITER-India. Competitions such as Slogan, Quiz and Essay Writing were conducted in Gujarati, Hindi & English languages, based on the decided theme. Good response was received from the employees for various competitions.

During the week, demonstration of firefighting equipment was conducted at IPR and FCIPT for employees as well as security personnel. A Safety Awareness Talk by Shri Devendra Modi, Safety Officer, was also organised.



Essay Writing Competition at IPR (above). (Below) Demonstration of Firefighting equipment at IPR (L&M) and FCIPT (R)



The Concluding Session was conducted on 10th March 2025, included a talk on “Safety Measures in High Pressure High temperature Experimental Helium Cooling Loop at IPR” delivered by Shri Ankit Gandhi.

Dr. Subroto Mukherjee, Dean (Admin) shared his thoughts on safety. He emphasized that safety should be an integral part of the working culture. He also informed that appropriate safety measures are to be taken care, if any system does not operate for quite long time. He congratulated the winners of various competitions and safety committee for organizing this event.

Safety Pledge was administered by Dr. Rajesh Kumar, Co-Chairperson of the Safety Committee. This was followed by prize distribution to the winners of various competitions. Shri Sudhirsinh Vala, Member, Safety Committee gave the vote of thanks.



Mr Devendra Modi (L) giving welcome address, Mr Ankit Gandhi (C) giving his talk and Dr. Subroto Mukherjee (R) sharing his thoughts



Safety Pledge being administered by Dr. Rajesh Kumar



Mr. Yuvakiran Paravastu receiving prize from Dr. S. Mukherjee



Mr. Chirag Bhavsar (L), Dr. Hiral Joshi (C) receiving prize from Mr. Sunil Kumar and Ms. Unnati Patel (L) receiving prize from Dr. S. Mukherjee

**LIST OF THE WINNERS OF VARIOUS COMPETITION**

Competition	Winners (First)	Winners (Second)	Winners (Third)
Gujarati Slogan	Rajnikant Bhatasana	Prakash Parmar	Ronakkumar Joshi
Hindi Slogan	Vinit Kumar Shukla	Kuldeep Kumar	Pratibha Gupta
English Slogan	Dheeraj Kumar	Hiral Joshi	Naveen Rastogi
Gujarati Essay Writing	Chirag Bhavsar	Unnati Patel	Dikens Christian
Hindi Essay Writing	Kuldeep Kumar	Pratibha Gupta	Gaurav Purwar
English Essay Writing	Yuvakiran Paravastu	Saifali Sharma	Dilshad Sulaiman
Quiz	Satyaprasad A.	Gheesa Lal Vyas	Ravish Choksi

## Indigenous manufacturing of H-T-E (Heat Transfer Element) based Second Calorimeter <sup>3</sup>

Second Calorimeter, of overall Size: 2190 mm x 1250 mm x 965 mm, has successfully been manufactured and qualified within Indian Industry (M/s NFTDC, Hyderabad) for the **first time using indigenous developed** material CuCrZr and novel welding technique (Electron Beam (EB) welding) to join the dissimilar and high thermal conducting materials.

This Calorimeter consists of 44 no. of Heat Transfer Elements (H-T-Es), each with the length of 700mm. It is to be installed at end of INTF duct where each H-T-E can handle peak power density  $10 \text{ MW/m}^2$  and the calorimeter as a whole can withstand the total neutral beam power up to 2.8 MW. Each of the H-T-E is equipped 5 no. of thermocouples, which measures the temperature on dumping panels for beam diagnostics.

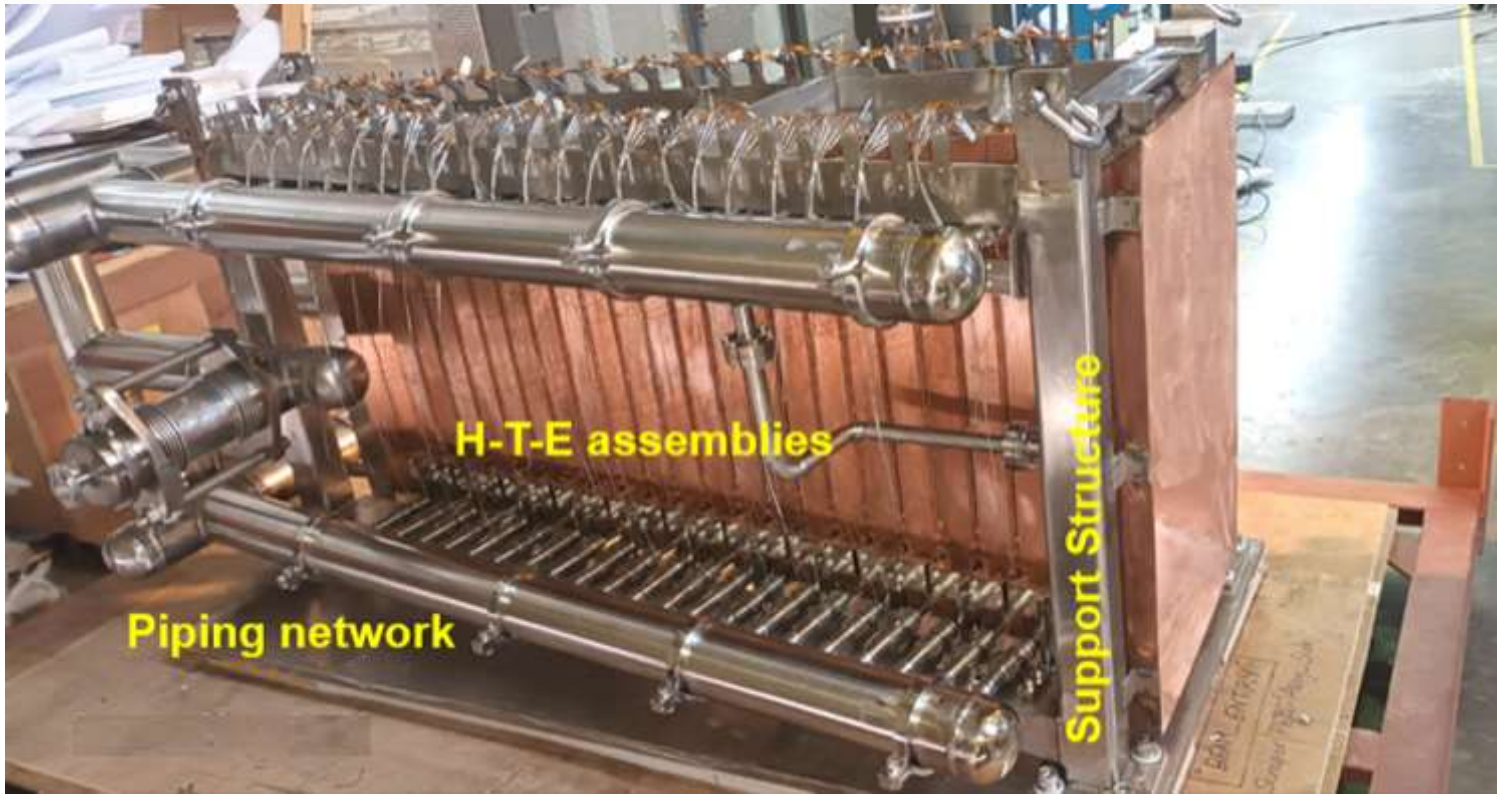
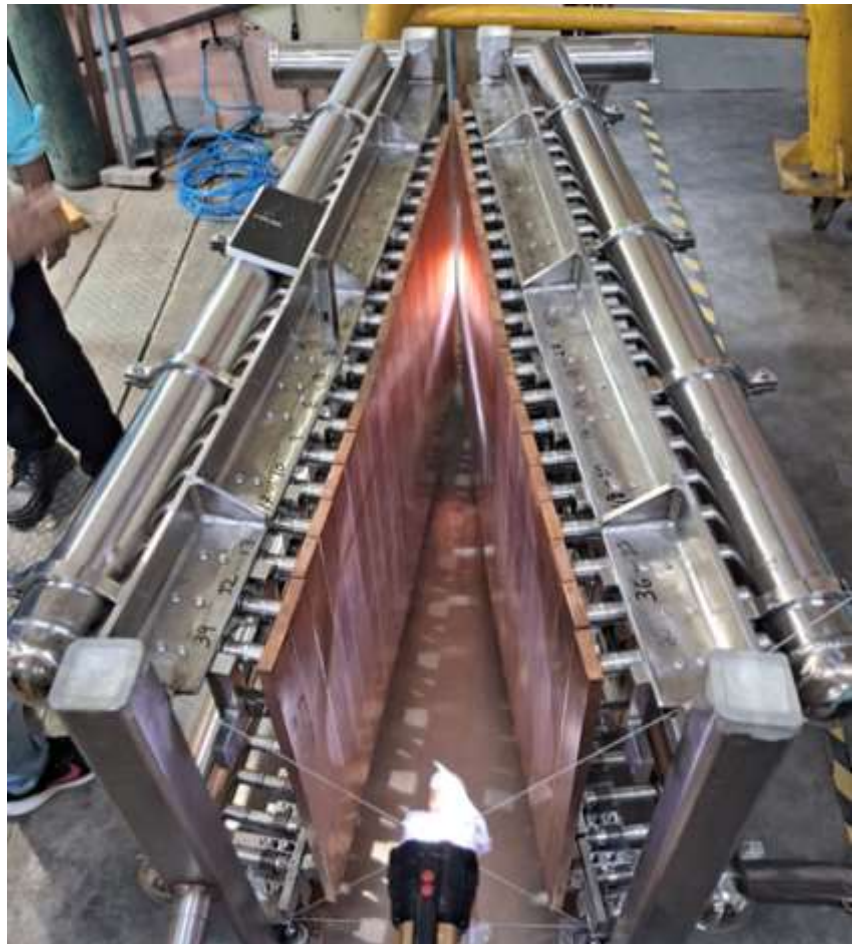


Figure: Significant parts of the Calorimeter, including the Piping Network, H-T-E assemblies and the Support Structure

The manufacturing challenges were in the form of material CuCrZr development with desired material properties (according to ITER specification), maintaining the flatness of individual Heat Transfer Elements (H-T-E), achieving the desired manufacturing tolerance for the opacity and electron beam welding of CuCrZr to Ni, Ni to SS and CuCrZr to CuCrZr with the He leak tightness of the order of  $10^{-9}$  mbarl/s.

**Significance:** The realization of second calorimeter has established the capabilities of Indian industries for manufacturing of MW class large size beam dump which is an excellent achievement of DNB group members of ITER India.

Figure: Testing to ensure the absence of beam "shine-through" at the intersections of Right and Left arm of calorimeter



The National Science Day, conducted under the aegis of the Platinum Jubilee Celebrations of the Department of Atomic Energy (DAE) was conducted as an offline event at IPR main campus during 15-16 February 2025. Over 350 students and 60 teachers from 57 schools participated in this 2-day event. The program was inaugurated by Dr. Subroto Mukherjee, Dean Admin, IPR. Seven competitive events were conducted in which 21 prizes were awarded. Apart from the competitive events, the NSD also had open house visits to various labs of IPR as well as a solar observation event using the high resolution solar telescope of IPR outreach. Around 45 students and 7 teachers participated in the science model competition. St Xavier's High School, Gandhinagar was awarded the IPR NSD 2025 Rolling trophy for scoring the maximum points in the competitive events. Over 2000 people visited IPR during the two-day scientific extravaganza.



Inauguration Ceremony of NSD-2025



Glimpses of the NSD-2025



Glimpses of the NSD-2025



Glimpses of the NSD-2025

सुर संध्या कार्यक्रम – 3 मार्च 2025

जनगणना कार्य निदेशालय एवं नराकास, गांधीनगर के संयुक्त तत्वावधान में बड़ौदा एपेक्स अकादमी, गांधीनगर के सभागार में दिनांक 24 फरवरी 2025 को सुर संध्या 2.0 कार्यक्रम के प्रथम चरण का आयोजन किया गया। नराकास, गांधीनगर के सदस्य कार्यालयों के 33 प्रतिभागियों ने इस कार्यक्रम में भाग लिया। प्रथम चरण में आयोजित सुर संध्या में कुल 33 गायकों में से 13 गायकों का चयन किया गया। इन चयनीत गायकों में संस्थान के श्री पिनाकिन देवलुक एवं श्री कुलदीप कुमार भी शामिल थे। सुर संध्या का दूसरा चरण दिनांक 3 मार्च 2025 को आयोजित हुआ, जिसमें 13 चयनित गायकों ने अपनी प्रस्तुति दी। सुर संध्या के निर्णायक मंडल में राज्यपाल एवं राष्ट्रपति सम्मान प्राप्त शिक्षक डॉ. वर्षा पारेख एवं संत जेवियर चर्च, गांधीनगर की लीड क्वारर सुश्री सिनी जोजों को आमंत्रित किया गया था।

इस कार्यक्रम में मुख्य अतिथि के रूप में श्रीमती आर्द्रा अग्रवाल, भा.प्र.से.(IAS), गुजरात सरकार को आमंत्रित किया गया था। साथ ही नराकास, गांधीनगर के सदस्य कार्यालयों के कार्यालय प्रमुखों ने भी इस कार्यक्रम में भाग लिया एवं सभी मधुर प्रस्तुतियों का आनंद उठाया।

सुर संध्या 2.0 गीत गायन प्रतियोगिता के दूसरे चरण में प्लाज़्मा अनुसंधान संस्थान के श्री कुलदीप कुमार ने पांचवां स्थान प्राप्त किया।



(L) श्री पिनाकिन देवलुक, लेखा अधिकारी और (R) श्री कुलदीप कुमार, वैज्ञानिक सहायक-बी गीत प्रस्तुत करते हुए

सुर संध्या कार्यक्रम में उपस्थित श्रोतागण



कार्यक्रम में उपस्थित प्रतिभागियों की तस्वीर

Superannuation



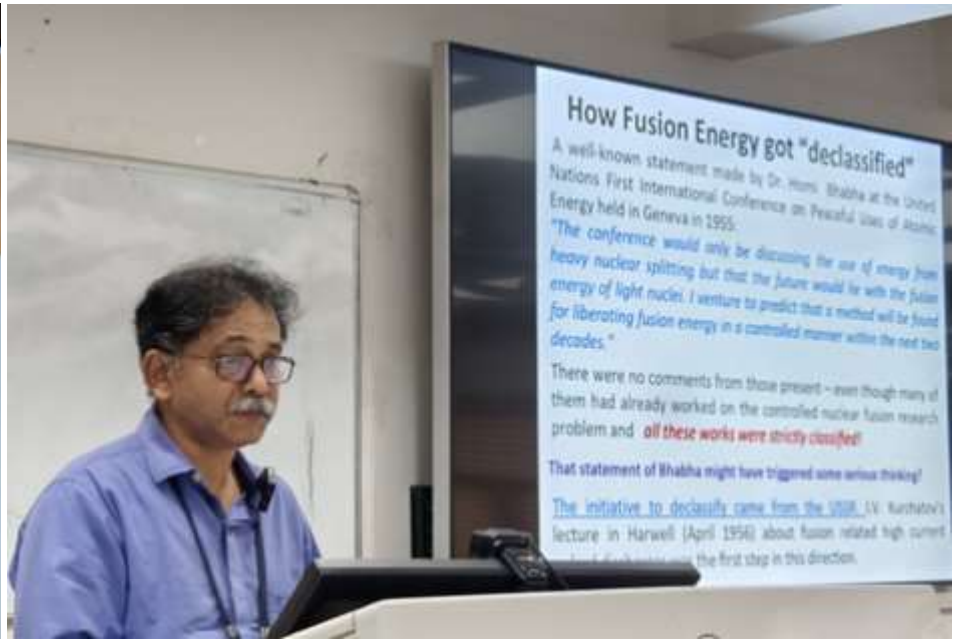
**Shri. Sunil Kumar** superannuated from services on 31st March 2025. He has served the Institute for more than 35 years in various capacities.

IPR newsletter team wishes him a Happy and Healthy retired life.

A Presentation Series on “Fusion Science & Technology” has been initiated at IPR. Primarily to spread useful information and knowledge-base on the Fusion Science & Technology related topics through various Popular Talks, Seminars and Colloquiums. The presentations will cover various aspects of Fusion Science & Technology, including the Past History, Present status and Future vision.

The first presentation in this series was on “**Russian Contribution to the Nuclear Fusion Research**” was delivered by Dr Daniel Raju on 06 Mar 2025.

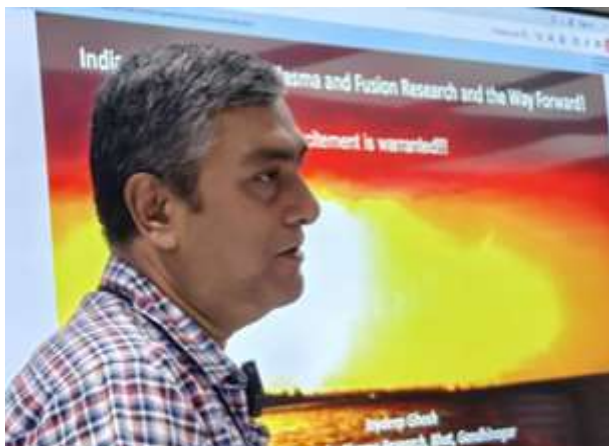
Following presentation in the series was delivered by Dr Joydeep Ghosh on “**Indian Contribution to Plasma and Fusion Research and the Way Ahead!**” on 07 Mar 2025.



Dr. Daniel Raju giving his presentation



IPR Staff members attending the talk



Dr. Joydeep Ghosh giving his presentation

IPR Staff members attending the talk



# LSPR anisotropy minimization by sequential growth of Ag nanoparticles on nanoripple patterned Si surface for SERS Application

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Surface Enhanced Raman Spectroscopy (SERS) is a highly effective method for detecting trace amounts of various molecules, with applications in diagnostics, food safety, forensics, and plasmonics. In this study, we present an innovative sequential deposition technique for fabricating uniform arrays of Ag nanoparticles (Ag-NPs).

This approach notably reduces anisotropy and significantly enhances the SERS signal. It also produces low-aspect ratio Ag-NPs without the need for substrate annealing, leading to increased interparticle spacing along ripples and a wider size distribution governed by Ostwald ripening. FDTD simulations confirmed that spherical nanoparticles create consistent electric fields in both directions along the ripples.

Additionally, reflection spectra revealed a wavelength shift from 209 nm to 54 nm with sequential deposition, effectively minimizing variations in localized surface plasmon resonance (LSPR) and SERS intensity. This reduction in anisotropy is highly beneficial for plasmonic applications, especially in SERS-based sensing.

Authored by Tarundeep Kaur Lamba, Sebin Augustine, Mahesh Saini, K.P. Sooraj, Mukesh Ranjan, the work is published in [Surfaces and Interfaces, 52, 104852, July, 2024](#)

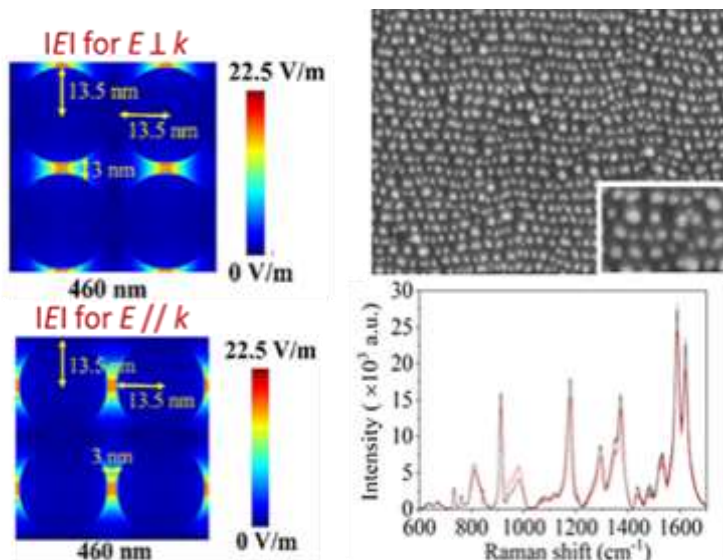


Fig. (a)

Fig. (b)

Fig. (a) Electric field distribution for a particular frequency around the NPs obtained using FDTD simulation performed with fixed value of  $d=3$  nm,  $b=13.5$  nm for  $E \perp k$  and  $E // k$ . (b) The SEM image and SERS spectra of sequential deposition.

## Expert Talk on "Can a Researcher be a Good Entrepreneur?"

As part of ongoing efforts to promote innovation and entrepreneurship within the academic community, AIC-IPR Plasmatech Innovation Foundation in association with HBNI Institute Innovation Council have organized an insightful talk on the topic "Can a Researcher be a Good Entrepreneur? – A Technology Translation & Design Perspective" on 13th March, 2025. The session aimed to spread awareness about the importance of technology translation and the journey from lab-based innovations to market-ready products.

The session was delivered by Dr. Suresh Nair, Managing Director, Amara Raja Design Alpha Pvt. Ltd., an accomplished domain expert and entrepreneur, who shared his extensive experience in the fields of technology development and commercialization. During his address, Dr. Suresh elaborated on the crucial role that researchers play in bridging the gap between laboratory research and market needs. He provided a detailed overview of the product development process, highlighting essential components such as technology readiness, market assessment, design strategies, and the pathways to successful commercialization.

The talk witnessed active and enthusiastic participation from students, faculty members, and staff, who engaged in meaningful discussions and gained valuable insights on how research-driven ideas can be transformed into impactful entrepreneurial ventures. The session served as a valuable platform to encourage researchers to consider entrepreneurial avenues for the practical application of their innovations.



Dr Nirav Jamnapara (L), Director AIC-IPR introducing the speaker, Dr. Suresh Nair (C) giving his talk and audience (R) attending the talk

Swachhata Pakhwada was observed in the Institute from 16th February to 28th February 2025. Various events were organized under this program including competitions, plog-a-thon, and tree plantation. On 27th February, tea and snacks were arranged for all the sanitation workers and gardening workers to thank them for their continuous efforts and to encourage them. A signature campaign and a cleanliness drive were organized in CPP-IPR Guwahati campus in which staff members participated actively. A painting competition was also organized for the children of staff members. The concluding session of Swachhata pakhwada was held on 28th February. Mr. Utsav Modi, Program Officer, CEE (Centre for Environment Education) Ahmedabad, was invited, who delivered a special lecture on "**Sustainable Waste Management, RRR (Reduce, Reuse, Recycle) and Circular Economy**". During this program, prizes were awarded to the winners of the competitions. Swachhata Committee Chairman Shri Dilip Rawal proposed Vote of Thanks. Dean-Administration in his concluding speech stressed on the importance of cleanliness and praised everyone for successfully organising the Swachhata Pakhwada. He also motivated everyone to continue working for cleanliness.



Housekeeping staff having Tea and Snacks at IPR Canteen



Signature campaign and a cleanliness drive at CPP-IPR Guwahati



Shri Utsav Modi delivering his insightful talk (L). Being felicitated by Dean Administration Dr. Subroto Mukherjee (R)



Drawings by the kids of CPP-IPR staff centered around the concept of cleanliness



The winners of various contests receiving their prizes at the concluding ceremony held at CPP-IPR



Photo Point, Vertical Plantation at Gate#2



Winners of various competitions being felicitated by Dean Administration (Top row) and the Guest Speaker (Bottom row)



The Guest Speaker (4th from Left) and Dean Administration (3rd from Right) with the members of Swachhata Committee 2025

International Women's Day (IWD) is celebrated annually on March 8th to honor the social, economic, cultural, and political achievements of women, while also advocating for gender equality. In alignment with the Government of India's guidelines, the Institute for Plasma Research (IPR) commemorated "International Women's Day 2025" with vibrant and global enthusiasm on March 12, 2025.

The 2025 IWD theme, "Accelerate Action," underscored the critical importance of empowering women for societal advancement. Reflecting this theme, IPR organized a series of activities aimed at fostering awareness, strength, and women's empowerment. To ensure comprehensive participation from all members of IPR, FCIPT, ITER-India, and CPP-IPR, these activities were conducted in both offline and online modes, engaging over 150 participants. Notably, male colleagues actively participated as audience members and speakers, sharing their perspectives on IWD and reinforcing the collective commitment to gender equality.



Dr. Sandhya Dave (L) anchoring the event. Lamp-lighting ceremony, graced by esteemed guests including Prof. Neerja Gupta (third from left), Honorable VC, Gujarat University



Dr. Subroto Mukherjee, Acting Director & Dean Administration (L), Smt. Supriya Nair, Acting CAO (C), and Dr. Ranjana Gangradey, Chairperson, Women's Cell felicitating the Guest, Dr. Neerja Gupta

During the inauguration ceremony, an enchanting musical performance with mellifluous flute performance by Dr. Devendra Sharma and the soulful Veena Vadan (recital) by Dr. Anitha V.P. This event had a harmonious blend of two classical Indian instruments, offering cultural richness and musical excellence.



Dr. Devendra Sharma (L) playing flute and Veena Vadan by Dr. Anitha V.P. (R)

Audience attending the inaugural ceremony



Dr. Subroto Mukherjee (L) sharing his thoughts, Dr. Ranjana Gangradey (C) introducing the guest speaker. Prof. Neerja Gupta (R) delivering talk on "The Sacred Geography of India"



Prof. Shalini S. (L), School of Management Studies, NFSU, Gandhinagar, gave a talk on "Women Empowerment and Healthcare". She is being felicitated by Dr. Ranjana Gangradey, Dr. Anitha V.P and Ms. Manika Sharma



Women staff enjoying fun activities during the lunch hour at the IPR Guest House



Group Photo of the Women Staff Members at IPR

Date	Institution	Visitors
17-January-2025	Nirma University, Ahmedabad	74 students of EE and 3 faculty
20-January-2025	Nirma University, Ahmedabad	80 students of EE and 2 faculty
21-January-2025	Lalan College, Bhuj, Kutch	35 students of BSc. (Phys) and 3 faculty
22-January-2025	Sakar English School, Chandkheda, Ahmedabad	60 students of Class 7th and 2 Teachers
03-February-2025	Pandit Deendayal Energy University, Gandhinagar	145 students of CSE and 4 faculty (2 batch)
4-February-2025	Pandit Deendayal Energy University, Gandhinagar	149 students of CSE and 4 faculty (2 batch)
05-February-2025	Pandit Deendayal Energy University, Gandhinagar	79 students of CSE and 2 faculty
17-February-2025	U.V. Patel College of Engineering, Ganpat University	87 students of ME/MC/AE and 3 faculty
18-February-2025	U.V. Patel College of Engineering, Ganpat University	71 students of EE and 2 faculty



Group Photos of the Students and Faculties from Nirma University, Ahmedabad



Group Photos of the Students and Faculty from Lalan College, Bhuj



Group Photos of the Students and Teachers from Sakar English School, Ahmedabad



Group Photos of the Students, Faculty and IPR Outreach Members with the students from PDEU, Gandhinagar



Group Photos of the Students and Faculty from PDEU, Gandhinagar



Photo of the Students from Ganpat University visiting a lab at IPR



Group Photos of the Students, Faculty and IPR Outreach Members with the students from Ganpat University



IPR, Gandhinagar (Gujarat), in association with The Charutar Vidya Mandal (CVM) University, Vallabh Vidyanagar, Anand, Gujarat organized an exhibition on Plasma, "The Fourth State of Matter" during 31 January-01 February, 2025. 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 application and fusion technology for visiting students and general public. Forty eight students from the host college were trained by IPR staff to explain the various exhibits to visiting public and students. Over 12000 students, teachers and general public in and around Vallabh Vidyanagar, Anand, Gujarat visited the exhibition.



Photos of the Plasma Exhibition held at CVM University, Anand, Gujarat

Dr. D. K. Aswal, Director IPR, paid a visit to CPP-IPR on 11th March, 2025. He was accompanied by the Dr. Paritosh Chaudhuri, Dean R&D and Dr. Shantanu Karkari. On behalf of CPP-IPR, he was felicitated by Dr. B. K. Saikia, the Centre Director of CPP-IPR. Director, IPR addressed the gathering in the seminar hall of CPP-IPR and emphasized on the importance of fusion energy for the growth of the nation and urged that everyone should thrive for an active participation in the India's Nuclear Fusion program. Following this, the scientists of CPP-IPR from various laboratories presented their ongoing scientific activities and discussed about the projected plans. Followed by this session, there was a laboratory visit, in which, the Director, Dean R&D and Dr. Karkari visited all the laboratories of CPP-IPR and took an understanding of the current activities.

Furthermore, on 10th March, 2025, Dean R&D and Dr. Karkari discussed on the upcoming DPR with the scientists at CPP-IPR. On 12th March 2025, Dean R&D and Dr. Karkari had another round of meeting with the scientists of CPP-IPR and had a discussion over various matters.



Dr. Bipul Saikia, Centre Director CPP-IPR giving traditional welcome to Dr Aswal



Dr. Saikia giving introduction



Dr. D K Aswal addressing the CPP-IPR Colleagues



Group Photo of the CPP-IPR staff with Director IPR

National Startup Day 2025 was celebrated at Entrepreneurship Development Institute of India (EDII) on 16th January 2025 with a resounding focus on fostering entrepreneurial spirit, technology commercialization, and connecting industry with innovation. The event brought together esteemed dignitaries, entrepreneurial leaders, researchers, and startup founders to create a vibrant platform for knowledge exchange, networking, and showcasing cutting-edge technologies.

Esteemed Guest Speakers included Shri Hitesh S Makwana, IAS, Surveyor General of India; Shri R D Barhatt, Jt. Commissioner of Industries – Govt. of Gujarat; Dr. Arvind C. Ranade, Director – National Innovation Foundation (NIF), Dr. Nirav Jamnapara, Head – AIC-IPR and Dr. Suresh Kumar Mojjada, Chief Technical Officer – Mariculture, ICAR-CMFRI.

Dr. Nirav Jamnapara gave an introduction about the technologies developed at the Institute for Plasma Research and the incubation support being offered to startups through Atal Incubation Centre of IPR (AIC-IPR).

Event witnessed participation from over 100 attendees, including aspiring entrepreneurs, researchers, and industry leaders. It served as a powerful platform for cross-sectoral knowledge exchange, offering participants actionable insights and potential collaborations.



Dr Nirav Jamnapara giving his talk



Group photo of the speakers and the participants

## Expert Talk on Gyrotron

Dr Yuri Belov from M/s Gycom Russia delivered a talk on “Gyrotron manufacturing process and technological development in Gyrotron” on 12 March 2025. He also discussed about the manufacturing techniques and facilities for the development of various types of Gyrotrons at Gycom.



Dr Yuri Belov delivering his talk (L). IPR staff attending the talk (R)



Dr Yuri Belov with the members of IPR ECRH Group along with the Dean Administration

## Plasma Exhibition at Jagiroad College, Assam

CPP-IPR's Outreach Cell participated at the Science Exhibition programme conducted at and by Jagiroad College, Jagiroad, Assam to celebrate the National Science Day on 28th February, 2025. Various plasma devices exhibiting different production mechanisms and plasma applications were shown. The stall was visited by around 200 students and teachers from various schools and colleges.



CPP-IPR's Outreach team at the National Science Day celebration at Jagiroad College, Assam

### Conference Presentation

**Ms. Tarundeep Kaur Lamba**, Research Scholar, gave an oral presentation at the **13th International Conference on Photonics, Optics and Laser Technology**, held in Portugal during 22-24 Feb 2025.

Title of her presentation: "**Sequential deposition of Ag NPs on rippled Si pattern for SERS application**"

Ms. Tarundeep Kaur presenting her talk at the conference



### Congratulations!



**Dr. W. Joychandra Singh**, gave a talk on "**Plasma Assisted synthesis of CuO Particles for Photocatalytic Application towards Dye Degradation**" at International Workshop on Cold Plasma Technology and Applications (CPTA-2025), BIT Mesra, Jaipur Campus, 6-8 February 2025.

He has received the "**Best Research Paper Award**" on Societal Plasma Applications.

**Congratulations to the authors!**

- ◆ **Dr. Pratik Ghosh**, gave a talk on "Deep Learning-Assisted Microwave-Plasma Interaction for Plasma Density Estimation: efficient and adequate data generation for real experimental scenario" on 05th March 2025
- ◆ **Dr. S. Sunil**, gave an invited talk on "LIGO-India: Vacuum Equipment Layout" at the Meeting with LIGO-India nodal institutes and LIGO-US personnel visiting IUCAA, IUCAA, Pune, on 6th March 2025
- ◆ **Mr. Harsh Patel**, gave a talk on "Experimental and simulation studies of effective thermal conductivity of compressed and uncompressed pebble beds for fusion blankets" on 07th March 2025
- ◆ **Dr. Ipsita Das**, Indian Institute of Technology, Kharagpur, gave a talk on "Design aspects of High-Temperature Superconducting power cable" on 07th March 2025
- ◆ **Mr. Ramesh Joshi**, gave a talk on "Development of Machine Learning Based Technique for Disruption Control and Prediction in ADITYA-U" on 13th March 2025
- ◆ **Dr. John Paul**, National Institute of Technology Tiruchirappalli, Tamil Nadu, gave a talk on "Graphene Oxide Incorporated, Post-Transition Metal Doped Zinc Oxide Thin Films and Nanorods for Efficient Dye Degradation" on 21st March 2025

## Upcoming Events

- ◆ 2025 Sherwood Fusion Theory Conference, New York, USA, 7-9 April 2025; <https://www.sherwoodtheory.org/sw2025/index.php>
- ◆ 6th European Conference on Plasma Diagnostics (ECPD 2025), Prague, Czech Republic, 7-10 April 2025; <https://indico.ipp.cas.cz/event/30/page/87-program>
- ◆ Fusion Neutronics Meeting 2025: ITER and beyond, Madrid, Spain, 7-10 April 2025; <http://tecfir.uned.es/NeutronicsMeeting.html>
- ◆ Inertial Fusion Energy Science and Technology Accelerated Research Conference (IFE-STAR 2025), Colorado, USA, 7-11 April 2025; <https://ifestar.org/events/ife-star-conference-2025>
- ◆ 26th International Vacuum Electronics Conference (IVEC 2025), Rotterdam, Netherlands, 14-17 April 2025; <https://atpi.eventsair.com/ivec-2025/>
- ◆ ITER Business forum 2025, Marseille, France, 23-25 April 2025; <https://www.iterbusinessforum.com/SaveTheDate.aspx>
- ◆ Plasma Processing and Technology International Conference (PLASMA TECH 2025), Albufeira, Portugal, 23-25 April 2025; <https://setcor.org/conferences/plasma-tech-2025>
- ◆ 14th International Conference on Recent Challenges In Engineering and Technology (ICRCET-2025), Bangalore, 26-27 April 2025; <https://www.icrcet.org/>
- ◆ International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C 2025), Denver, United States, 27-30 April 2025; <https://www.ans.org/meetings/mc2025/>

## तकनीक के साथ, विज्ञान की बात

संस्थान में दिनांक 19 मार्च 2025 को 'तकनीक के साथ विज्ञान की बात' व्याख्यान शृंखला के अंतर्गत उच्च तापमान प्रौद्योगिकी प्रभाग (HTTD) के वैज्ञानिक अधिकारी-एफ श्री विनय मेनन ने 'टोकामक संचालन के मूलभूत सिद्धांत एवं संलयन में इसका अनुप्रयोग' विषय पर हिन्दी में व्याख्यान दिया। उन्होंने सरल हिन्दी भाषा में प्लाज्मा भौतिकी की अवधारणाओं को समझाया और बताया कि टोकामक (Tokamak) एक उन्नत वैज्ञानिक उपकरण है, जो प्लाज्मा को नियंत्रित करने और उसमें दीर्घकालिक संलयन प्रतिक्रिया बनाए रखने के लिए मजबूत चुम्बकीय क्षेत्रों का उपयोग करता है। उन्होंने दुनिया की प्रमुख टोकामक परियोजनाओं, जैसे कि SST-1 (भारत में विकसित), ITER (अंतरराष्ट्रीय सहयोग परियोजना) आदि की जानकारी देते हुए नवीनतम ऊर्जा स्रोतों के विकास में इनके योगदान पर भी चर्चा की।



व्याख्यान देते हुए श्री विनय मेनन



व्याख्यान के दौरान उपस्थित श्रोतागण

Title	Page No	Title	Page No
54th National Safety Week – 2025 at IPR	01-02	Swachhata Pakhwada 2025	10-11
Indigenous manufacturing of H-T-E (Heat Transfer Element) based Second Calorimeter	03	International Women's Day 2025 at IPR	12-13
National Science Day 2025	04-06	Academic Visits to IPR	14-16
नगर राजभाषा कार्यान्वयन समिति (नराकास) गांधीनगर सुर संध्या कार्यक्रम	07	Plasma Exhibition @ CVM University, Anand	17
Superannuation	07	IPR Director's visit to CPP-IPR, Guwahati	18
Presentation Series on Fusion Sci. & Tech.	08	National Startup Day 2025	19
LSPR anisotropy minimization by sequential growth of Ag nanoparticles on nanoripple patterned Si surface for SERS Application	09	Expert Talk on Gyrotron	19
Expert Talk on "Can a Researcher be a Good Entrepreneur?"	09	Plasma Exhibition at Jagiroad College, Assam	20
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### Know Your Colleague



Mr Hiteshkumar Kavadi is currently working as Scientific Officer-D. He did his B.Tech from M.S University Baroda in the year 2014 and M.Tech in Thermal System Design from Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat in the year 2018. He joined IPR in December 2016. From 2016 onwards, he has been working in Large Cryo Plant and Cryo-system division (LCPC). He was involved in the testing of cryogenics component like heat exchanger, filter, adsorber bed, control valve and turbine, etc. at cryogenics temperature 80K and at room temperature. All these components are assembled and developed for helium refrigeration cum liquefaction plant (200W at 4.2K) in LCPC division. He also operates the gas chromatography system like Total Hydro Carbon analyser (THC) and Hydrogen Oxygen Nitrogen (HON) analyser to measure impurity in process helium gas while plant is being operated. He is also involved in the design, development and commissioning of the peripheral system required for Helium Refrigerator -cum- Liquefier (HRL) plant. He was also involved in staff club committee during the year 2022-2023.

### Holi Celebration



### Quote of the Month

*"We are what we repeatedly do. Excellence, then, is not an act, but a habit."*

--Aristotle

### The IPR Newsletter Team

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