The 4th State

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

Issue 153, April 2026

55th National Safety Month Campaign

This year the National Safety Council of India (NSCI) celebrates its Diamond Jubilee marking 60 years of dedicated service to the nation in advancing workplace safety, occupational health and environmental protection.

The theme for the 55th National Safety Month Campaign is "**Engage, Educate & Empower people to Enhance Safety**".

IPR is celebrating the 55th National Safety Month Campaign starting from 4th March 2026. As part of this campaign, and to promote safety awareness while fostering a strong safety culture, various competitions and safety awareness programs and expert talks are being organized during the month.

Dear (R&D), Dr. Paritosh Chaudhuri (L) and ACAO, Ms. Supriya Nair (C) administering the safety pledge

Staff members taking the Safety pledge

Celebration of International Women's Day 2026

The organization celebrated International Women's Day with great enthusiasm and pride, marking the occasion with an inspiring gathering inaugurated by the Director, IPR and Chief Guest Ms. Minal Rohit from SAC, ISRO Ahmedabad, Ms. Supriya Nair, ACAO, IPR and Dr. Ranjana Gangradey, Ms. Manika Sharma and Ms. Suman Danani, members of the IPR Women's Committee.

Ms. Minal Rohit, a distinguished ISRO scientist who played a key role in India's Mars Orbiter Mission (Mangalyaan), delivered an insightful lecture on "Mangalyaan Mission: Highlighting India's Achievements in Space Exploration," sharing her experiences and emphasizing the spirit of innovation, perseverance, and team-work that led to India becoming the first nation to reach Mars orbit in its maiden attempt. The session served as a powerful source of motivation for all the listeners and audience, especially for young professionals. Her words, filled with passion and real-life insights, left the audience motivated and proud, making the celebration not just an event, but a reminder of the strength, capability, and growing impact of women in science and beyond. Ms. Ranjana Gangradey presented memento to the speaker and expresses deep gratitude for honouring and inspiring IPR members with her presence and the invited talk. Musical performances by Dr. Devendra Sharma, Ms. Shilpa Khandekar, and Ms. Suvitha Kartha added charm and vibrancy to the event.

Celebration of International Women's Day 2026

Glimpses of the International Women's Day 2026 celebration at IPR

Quasi-longitudinal whistler mode activity in magnetized plasma by Gayatri Barsagade

Whistler waves is an electromagnetic wave that propagate along magnetic field lines in magnetized plasmas, plays a crucial role in space and laboratory plasma dynamics. The thesis presents a detailed investigation of nonlinear steepening in quasi-longitudinal (QL) whistlers in strongly magnetized plasmas where both electrons and ions participate in nonlinear wave interactions. The study focuses on understanding how whistler waves propagating obliquely to magnetic fields develop strong electrostatic characteristics that enable more efficient Landau damping processes, a phenomenon of significant importance in contemporary space plasma physics research.

1D electromagnetic fluid code was developed to simulate QL whistler wave propagation, specifically extending the analysis to the range of laboratory experimental regimes. The research successfully addresses recent experimental observations of highly oblique whistlers excited by energetic electrons, particularly those reported in Large Volume Plasma Device (LVPD) experiments at IPR. The simulations revealed that the origin of highly QL propagation and associated steep density structures lies in the nonlinearity of the whistler mode, which manifests exclusively during oblique propagation. Importantly, the study demonstrates nonlinear excitation of electrostatic mode waves as an intrinsic property of oblique whistlers, with these electrostatic characteristics being essential for the waves to operate in turbulent steady states [1]. The extended work involves an advanced computational study of QL whistler propagation in the presence of finite ion response, requiring simulations that cover multiple fast and slow time scales. The study shows that during propagation along the resonance cone at high densities, ion fluctuations approach lower hybrid resonance without density steepening, and when excited at equal wave numbers, they complement the longitudinal electrostatic field of the QL whistlers.

Gayatri Barsagade

A significant finding is that whistler waves in the presence of ion response couple with lower-hybrid modes through comparable electric field strengths but highly unequal density perturbations as shown in Fig. 1, creating ambiguity in the Fourier spectra of electric field and plasma density fluctuations. This ambiguity has been resolved analytically, providing the correct interpretation for these two spectra from coherently propagating QL whistlers. At higher densities, the simulations reveal recurrent steep electron density fluctuations that exist in equilibrium with coherent lower-hybrid ion density structures [2].

This work bridges the gap between space plasma observations, laboratory experiments, and computational simulations, providing critical insights into whistler turbulence mechanisms relevant to understanding magnetosphere and solar-wind plasma dynamics.

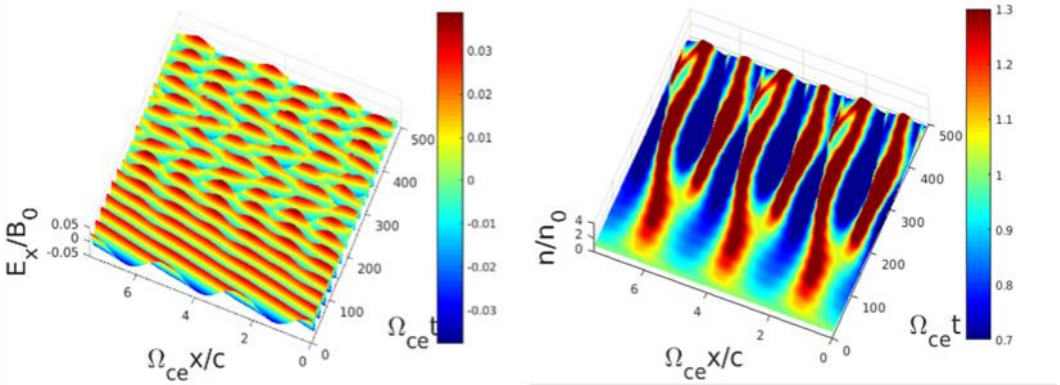


Fig. Spatiotemporal evolution of E_x and density for QL whistler

Publications:

1] Gayatri Barsagade and D. Sharma, “Quasi-longitudinal propagation of nonlinear whistlers with steep electrostatic fluctuations”, Phys. Plasmas 29, 112104 (2022).

2] Gayatri Barsagade and D. Sharma, “Quasi-longitudinal whistler propagation in presence of finite ion response”, Phys. Plasmas 31, 122101 (2024).

Flag off ceremony of AGASTYA® -1250 Cryopump to SAC ISRO

IPR has developed liquid nitrogen-cooled sorption cryopumps to pump nitrogen and water vapour gas load and finds application in Fusion and Space research. Following an initial MoU signed in September 2017, IPR has successfully delivered three 400 mm aperture cryopumps to the Space Applications Centre (SAC-ISRO), Ahmedabad, during 2021-22. These units were installed in SAC's thermo-vacuum chambers and have operated satisfactorily ever since. Being advantageous and compatible to application, was mutually agreed to develop an indigenous Liquid Nitrogen (LN2) cooled Sorption Cryopump of ~1250 mm diameter for the large sized Thermo-vacuum chambers and in this connection an MoU was signed to develop the AGASTYA-1250 cryopump.

IPR has now completed development, with test results meeting specifications given by SAC-ISRO, including pumping speeds of ~45,000 l/s for Nitrogen , ~200,000 l/s for water vapour ,and 40000 mbar lit capacity until pressure reaches $1x10^{-5}$ mbar. To mark this milestone, on 16th March 2026, a flag-off ceremony was held at the IPR, where SAC-ISRO Director Shri Nilesh M. Desai and IPR Director Dr. Tapas Ganguli exchanged the technical acceptance report.

Director IPR, Dr. Tapas Ganguli giving introduction speech (L). Director SAC, Shri Nilesh Desai addressing the audience (C). Directors of IPR and SAC exchanging the technology acceptance report



Dr. Ranjana Gangradey (L) presenting background of the MoU. Director SAC visiting the Cryopump lab (R)

Members of IPR Cryopump Division with SAC team

Design and CFD analysis of the primary chamber of plasma pyrolysis plant

Plasma pyrolysis is a promising alternative process to conventional waste incineration, where biomedical waste is disintegrated at temperatures of 800–1200 °C in an oxygen-starved environment, producing combustible gases and inert slag while meeting emission standards set by the Central Pollution Control Board (CPCB) and the Ministry of Environment, Forest and Climate Change (MoEFCC). In this study, the primary chamber, one of the key components of the pyrolysis plant, is analyzed using Computational Fluid Dynamics (CFD) simulations incorporating the complex and dominant radiative heat transfer associated with high-temperature plasma arcs. Following experimental validation on a 50 kg/h system, a 200 kg/h primary chamber is designed to achieve uniform and faster ramp-up to a preheating temperature of ~1000 °C, enabling efficient waste destruction. The attached gate valve for waste feeding is also analyzed.

The published work titled "**Design and CFD driven preheating thermal performance analysis of the primary chamber of plasma pyrolysis plant for biomedical waste disposal: From experimental validation to 200 kg/h scale-up**" is authored by Deepak Sharma, Atikkumar Mistry, Adam Sanghariyat, Paritosh Chaudhuri, S.K. Nema, published in High Impact journal Energy Conversion and Management, Volume 356, 121310

Article URL: https://www.sciencedirect.com/science/article/pii/S0196890426002797

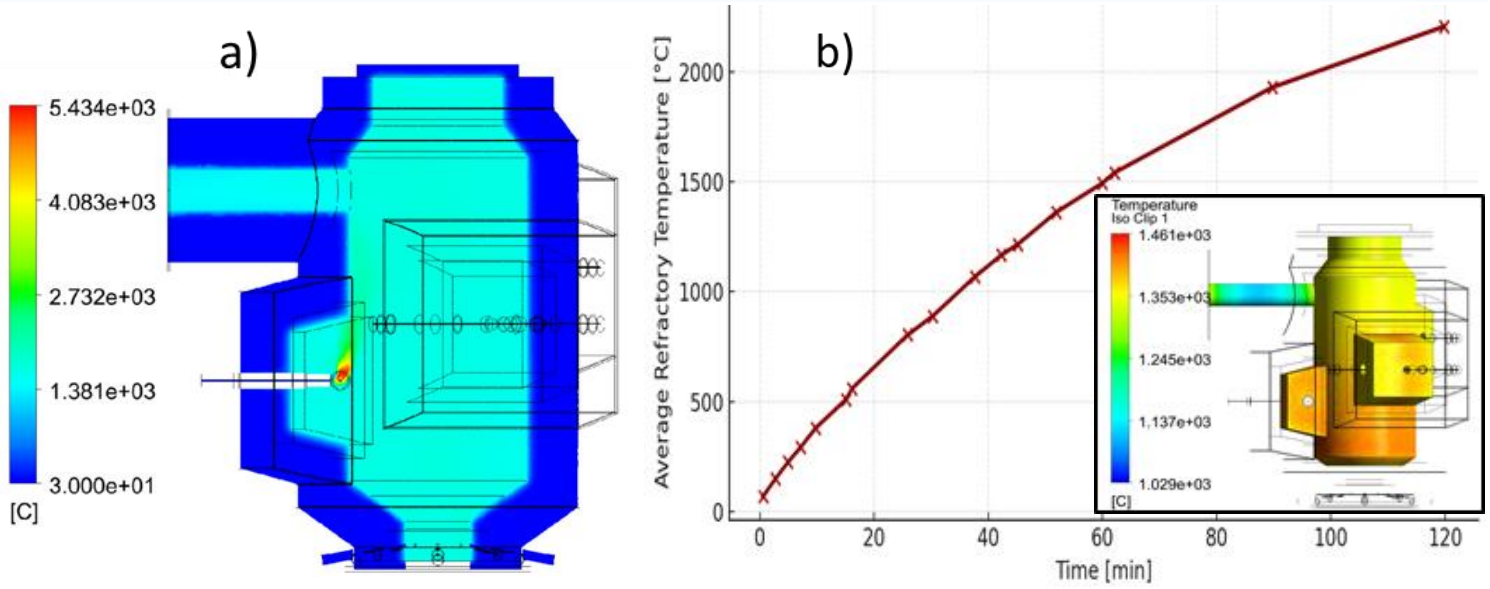


Figure : a) Temperature distribution including plasma arc in 200 kg/h primary chamber b) Average Temperature on refractory surface receiving heat from arcs: reaches ~ 1000 °C at 38 minutes of preheating. Bottom right of this figure shows temperature on refractory surface at 45 minutes

In-house development and integration of an LN2 phase separator for the 80K distribution system of SST-1

In SST-1, sub-cooled LN_2 is used in various subsystems of the 80 K distribution network for cooling in order to reduce the overall heat load. The returning LN_2 is routed through the existing phase separators of 15 litre and 25 litre capacity, which are connected to the 300 litre sub-cooler vessel. After phase separation, the LN_2 gas is vented to the atmosphere. During SST-1 campaign operation, LN_2 was occasionally observed exiting from the vent line in liquid form. This may result from the long distance between the phase separator and the sub-cooler vessel, saturation conditions in the 80 K distribution network, and the need for installing an additional LN_2 phase separator in the line. To address this issue, a gravity type phase separator was developed in-house and installed inline in the 3″ NB 80 K vent line. The phase separator assembly consists of a thermally insulated 15 litre SS304 vessel with inlet, outlet piping, diverter etc. The LN_2 outlet is connected through a 1″ NB vacuum-jacketed (VJ) cryogenic flexible transfer line to the main DN15 VJ return line of the sub-cooler vessel. After installation of the in-house phase separator, LN_2 loss has been significantly reduced by recovering a larger amount of liquid nitrogen back into the sub-cooler vessel. Further improvements and modifications to the phase separator and LN_2 distribution network are being in progress. The tasks were challenging to execute due to the installation work had to be carried out at a height of 12 metres.

Phase separator assembly in 80 K vent line

LN_2 phase separator

LN_2 outlet at Sub-cooler vessel

IPR's DeepCXR at AI Impact Summit 2026

IPR's **DeepCXR** Technology features in the Government of India - Press Information Bureau (PIB) release dated 13 FEB 2026 on the AI Impact Summit India 2026 on the theme "**Transforming Healthcare Delivery Through Artificial Intelligence**", focused on how contribution of Artificial Intelligence in strengthening India's healthcare ecosystem. The focus was on how AI is supporting Government of India in bridging systemic gaps, enhancing the quality of healthcare services, and promoting early detection and preventive screening across the country Emphasizing how AI enabled Tools in the National TB Elimination Program have resulted in decline of TB outcomes in India.

AI-enabled initiatives by the Government of India (2022-2025) to improve public health delivery are:

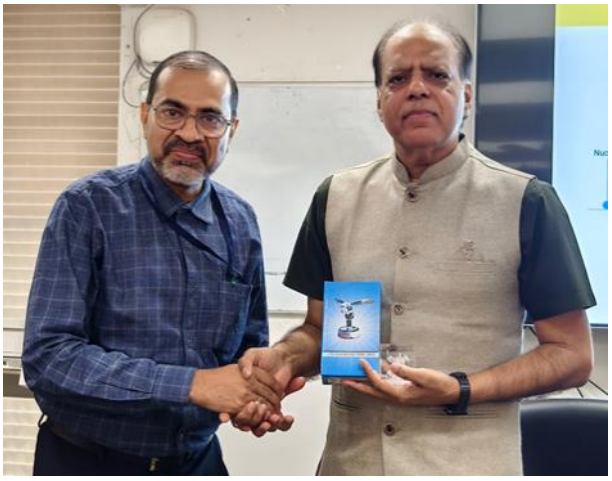
Health Focus	AI Solution / Initiative	Process, Technology "Treatment" Experience	Clinical / Operational Impact
TB Management	Adverse Outcome Prediction	Predictive Analytics: AI flags patients at high risk of treatment failure now treatment is initiated.	Reported 27% decline in adverse outcomes after nationwide deployment.[6]
TB Triage	DeepCXR (Chest X-ray)	Radiology AI: Automated reading of digital X-rays to identify nodules/cavities for presumptive TB cases.	Deployed in 8 State/UTs; available free of cost to the Govt to bypass specialist shortages.[7]

At the AI Impact Summit India 2026 held at Bharat Mandapam, New Delhi from 16–20 February 2026, the Indian Council of Medical Research (ICMR), in collaboration with Central Drugs Standard Control Organization (CDSCO) organized a session titled "**Regulatory Pathway for AI-based Medical Devices: Bridging Training, Validation, and Clinical Evaluation**". The session focused on AI-SiMD (Software in Medical Devices) and AI as SaMD (Software as a Medical Device) and discussed on data quality, AI model validation, and regulatory guidance from CDSCO. DeepCXR which is developed by IPR in collaboration with ICMR was showcased as DeepCXR -SaMD in the session, it's training & validation data sets was presented during the session along with it's reach out to larger population. The session was attended in person from IPR by Mrs. Manika Sharma.

Mrs. Manika Sharma (front row 1st from right) attending the AI Impact Summit India 2026

Colloquium at IPR

Colloquium #350 was organized on 13 Mar 2026 at IPR. The colloquium talk was delivered by Prof. A K Tyagi, Dean, HBNI. The title of the talk was "**Sustainable Development: Role of nuclear science and technology**" Read the abstract: https://www.ipr.res.in/documents/colloquium350.html



Prof A K Tyagi delivering his talk (L). Director IPR, Dr. Tapas Ganguli felicitating the guest speaker (R)

Audience attending the colloquium talk

SAC, ISRO team visits LIGO-India Lab

Director SAC, ISRO, Shri Nilesh Desai along with his team visited LIGO-India Lab at IPR on 16 Mar 2026

Former Director, Dr. D. K. Aswal visits IPR

Dr. D. K. Aswal, Member, National Disaster Management Authority (NDMA) and former Director of the Institute for Plasma Research (IPR), visited Gandhinagar, Gujarat, during the first week of March on an official tour. During the visit, he called on the Director, IPR, and held detailed discussions with senior scientists and officials of the institute. Dr. Aswal briefed the IPR team on NDMA's ongoing initiatives in disaster risk reduction, with a particular focus on preparedness and response to radiological and nuclear emergencies. He emphasized the importance of integrating advanced scientific expertise into disaster management frameworks, especially in addressing emerging technological risks and strengthening national and state-level capacities.

The Director, IPR, in turn, apprised Dr. Aswal of the institute's recent developments in plasma science, fusion research, and associated high-end technologies. The discussions also covered potential areas of collaboration between NDMA and IPR, including capacity building, technical consultations, and development of simulation-based emergency response mechanisms. The interaction highlighted the need for closer synergy between scientific research institutions and disaster management authorities to enhance India's preparedness for complex and technology-driven disaster scenarios.

Dr. Aswal being received by Director IPR, Dean (Admin) and Dean (R&D)

A Talk on Mental Health and Wellbeing

To build a robust Mental Health Ecosystem in Higher Educational Institutes (HEIs), aligned with the National Education Policy (NEP) 2020 and the Vision of Viksit Bharat 2047, an expert lecture on the topic "**Mental Health and Wellbeing of Students and staff members**" by Mr. Samrendra Srivastava, CEO, Wizzokraft Solutions was collaboratively organized by Mental Health & Well-being Monitoring Committee (MHWBMC) on 9 Mar 2026 at IPR. The talk provided a comprehensive overview of psychological disorders, focusing on early detection and symptom recognition. The presentation was well appreciated and offered profound insights into the field of mental health. The interactive session also allowed Q&A, enabling attendees to understand their mental health.

Dean (R&D), Dr. Paritosh Chaudhuri introducing the speaker (L). Dr. Vipul Tanna welcoming the speaker (C).
Mr. Samarendra Srivastava taking the session (R)

Academic Visits to IPR

Date	Institution	Visitors
18 Feb 2026	Charutar Univ. Changa, EC, Dn. A	54 Students, B. E. ECE, Sem 4
19 Feb 2026	Charutar Univ. Changa, EC, Dn. B	54 Students, B. E. ECE, Sem 4
20 Feb 2026	Atmiya University, Rajkot	52 Students, BCA
24 Feb 2026	Modasa Engineering College, Modasa	32 Students, B. E. Electrical
09 Mar 2026	Sahajanand School, Koteswar, Ahmedabad	37 Students, Class 9 & 11
10 Mar 2026	Gujarat Vidyapith, Ahmedabad	54 Students, BSc. Sem 2
13 Mar 2026	Vishwakarma Govt. Engineering College, Chandkheda, Ahmedabad	102 Students, B. E. Mech, Sem 4
16 Mar 2026	IndoScience, Pune	36 Students, Class 7 & 9
17 Mar 2026	Sigma University, Vadodara	107 Students, B. E. Chem. Sem 2 – 8

Plasma Exhibitions

The Institute for Plasma Research (IPR), Gandhinagar, Gujarat, in association with Charutar Vidya Mandal University, Vallabh Vidyanagar, Anand, organized a five-day exhibition titled “Plasma: The Fourth State of Matter” from 4–8 February 2026. The event was conducted as part of IPR’s nationwide scientific outreach initiatives under the DAE Platinum Jubilee celebrations.

The exhibition showcased interactive displays on plasma science, its diverse applications, and fusion technology, aimed at engaging students, teachers, and the general public. As part of the programme, 63 students from the host institution were trained by IPR staff to demonstrate and explain the exhibits to visitors. The exhibition witnessed an enthusiastic response, attracting over 8,000 visitors, including students, teachers, and members of the public from Vallabh Vidyanagar, Anand, and surrounding regions.

Visitors at the Plasma Exhibition Charutar Vidya Mandal University, Vallabh Vidyanagar, Anand

Plasma Exhibitions

IPR ORD team with the team from Charutar Vidya Mandal University, Vallabh Vidyanagar, Anand

Continuing the outreach activities under the DAE Platinum Jubilee, a training programme with live demonstrations of plasma exhibits was conducted at the Community Science Center Vadodara during 10–12 February 2026. The programme included hands-on demonstrations and interactive sessions designed to enhance understanding of plasma science among students and educators.

During this programme, 12 students from the host institute were trained by IPR staff to demonstrate the exhibits to visitors. In addition, a Teachers' Training Programme was organized for 38 teachers from various schools, enabling them to incorporate fundamental concepts of plasma science into classroom learning. The programme attracted over 1,000 students, teachers, and members of the public from Vadodara and nearby areas.

Glimpses of the Plasma Exhibition at Community Science Center Vadodara

प्रेरक संवाद - प्रेरणा से प्रयोगशाला तक : एक वैज्ञानिक की यात्रा

श्री उज्ज्वल बरुआ, उत्कृष्ट वैज्ञानिक के साथ संवादात्मक सत्र

दिनांक 25 फरवरी 2025 को प्लाज़्मा अनुसंधान संस्थान में राजभाषा कार्यान्वयन समिति द्वारा उत्कृष्ट वैज्ञानिक श्री उज्ज्वल बरुआ की सेवानिवृत्ति के अवसर पर एक प्रेरक संवादात्मक सत्र का आयोजन किया गया। श्री बरुआ ने 26 दिसंबर 1995 को संस्थान में कार्यभार ग्रहण किया था और लगभग 30 वर्षों की गौरवपूर्ण वैज्ञानिक सेवा के उपरांत वे फरवरी 2026 में सेवानिवृत्त हुए।

कार्यक्रम के आरंभ में संस्थान के निदेशक डॉ. तापस गांगुली ने श्री उज्ज्वल बरुआ को पुष्प गुच्छ भेंट कर उनका स्वागत किया। राभाकास के सह-अध्यक्ष डॉ. सूर्यकान्त गुप्ता ने इस संवादात्मक सत्र का संचालन किया। इस संवादात्मक सत्र के दौरान उनके प्रारंभिक जीवन, शैक्षिक पृष्ठभूमि, वैज्ञानिक बनने की प्रेरणा तथा संस्थान में आरंभिक संघर्षों पर विस्तृत चर्चा हुई। उन्होंने अपने करियर की प्रमुख उपलब्धियों, विशेषकर ईटर-भारत के परियोजना निदेशक के रूप में योगदान दिया तथा ईटर-फ्रांस में अंतर्राष्ट्रीय स्तर पर कार्य करने के अनुभव साझा किए। उन्होंने भारतीय अनुसंधान संस्थानों और अंतर्राष्ट्रीय कार्य-संस्कृति के बीच अंतर पर भी प्रकाश डाला तथा बड़ी वैज्ञानिक परियोजनाओं में टीम-वर्क, नेतृत्व और समयबद्ध क्रियान्वयन के महत्व को रेखांकित किया।

श्रोताओं ने उनके व्यापक अनुभव, आईपीआर के भावी रोडमैप तथा अनुसंधान को और अधिक प्रभावी बनाने के उपायों के संबंध में प्रश्न किए, जिनका उन्होंने अत्यंत स्पष्टता, सहजता और आत्मीयता के साथ उत्तर दिया।

अपने प्रेरक संबोधन में उन्होंने कहा, "विज्ञान एक ऐसा आकाश है जिसकी कोई सीमा नहीं — अपना श्रेष्ठ देने का प्रयास करें ताकि श्रेष्ठतम परिणाम प्राप्त हो सके।"

कार्यक्रम के समापन पर संस्थान के डीन प्रशासन डॉ. ई. राजेन्द्र कुमार ने श्री उज्ज्वल बरुआ को एक स्मृति चिन्ह प्रदान किया तथा सत्र का समापन उनके प्रति हार्दिक शुभकामनाओं के साथ हुआ। यह संवाद सत्र सभी उपस्थितजनों के लिए प्रेरणादायक एवं मार्गदर्शक सिद्ध हुआ।

निदेशक डॉ. तापस गांगुली,
श्री उज्ज्वल बरुआ को पुष्प गुच्छ भेंट करते हुए

संवादात्मक सत्र के दौरान श्री उज्ज्वल बरुआ

श्री उज्ज्वल बरुआ को एक स्मृति चिन्ह प्रदान करते हुए संस्थान के डीन प्रशासन डॉ. ईराजेन्द्र कुमार

सत्र के दौरान उपस्थित श्रोतागण

प्रेरक संवाद - प्रेरणा से प्रयोगशाला तक : एक वैज्ञानिक की यात्रा

डॉ. प्रबल कुमार चट्टोपाध्याय, वरिष्ठ प्रोफेसर-एच के साथ संवादात्मक सत्र

दिनांक 18.03.2026 को प्लाज़्मा अनुसंधान संस्थान में राजभाषा कार्यान्वयन समिति द्वारा "आईपीआर में मेरी वैज्ञानिक यात्रा" विषय पर एक संवादात्मक सत्र आयोजित किया गया। यह सत्र डॉ. प्रबल कुमार चट्टोपाध्याय, वरिष्ठ प्रोफेसर-एच के सेवानिवृत्ति अवसर पर उनके कार्यकाल एवं अनुभवों को साझा करने के उद्देश्य से आयोजित किया गया। सत्र का संचालन डॉ. परितोष चौधरी, डीन (अनुसंधान एवं विकास) द्वारा किया गया।

सत्र के प्रारंभ में डॉ. प्रबल ने अपने बचपन की स्मृतियों को साझा करते हुए वैज्ञानिक बनने की अपनी संघर्षपूर्ण यात्रा का वर्णन किया। उन्होंने प्लाज़्मा अनुसंधान संस्थान सहित विभिन्न राष्ट्रीय एवं अंतर्राष्ट्रीय संगठनों में किए गए अपने कार्यों और अनुभवों का विस्तृत विवरण प्रस्तुत किया। साथ ही, उन्होंने युवाओं एवं छात्रों को विज्ञान के क्षेत्र में समर्पण और निष्ठा के साथ आगे बढ़ने के लिए प्रेरित किया।

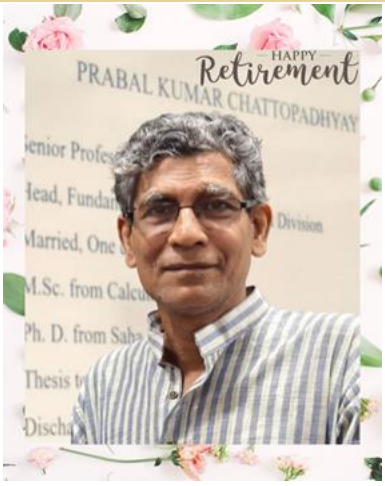
यह सत्र अत्यंत ज्ञानवर्धक एवं रोचक रहा, जिसमें श्रोताओं को डॉ. प्रबल के जीवन की अनेक प्रेरणादायक और दिलचस्प घटनाओं को जानने का अवसर मिला। कार्यक्रम के अंत में उपस्थित अधिकारियों एवं कर्मचारियों ने उनके कार्यानुभव से संबंधित कई प्रश्न पूछे, जिनका डॉ. चट्टोपाध्याय ने स्पष्ट उत्तर दिया। उन्होंने समस्याओं से भागने की बजाए, उनका धैर्यपूर्वक सामना करने की सलाह दी।

संवादात्मक सत्र के दौरान डॉ. प्रबल कुमार चट्टोपाध्याय एवं डीन (अनुसंधान एवं विकास), डॉ. परितोष चौधरी

संस्थान के निदेशक डॉ. प्रबल कुमार को स्मृति चिन्ह भेंट करते हुए

सत्र के दौरान उपस्थित श्रोतागण

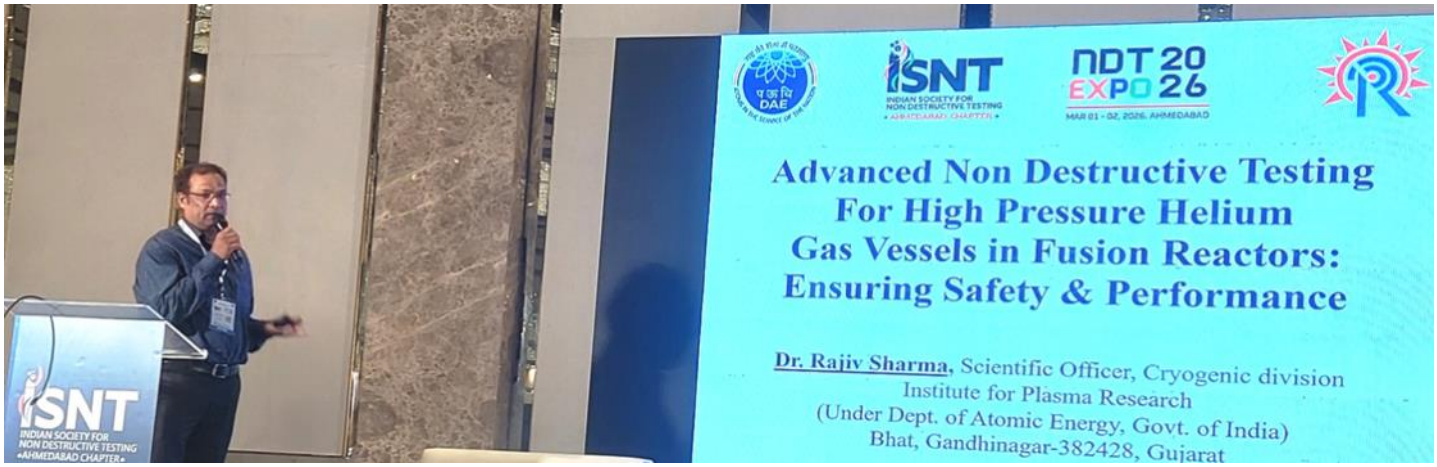
Superannuation



Dr. Prabal Kumar Chattopadhyay, Senior Scientific Officer—H got superannuated from IPR on 31 March 2026 after more than 28 years of service.

IPR wishes him a very Happy and Healthy retired life.

Dr. Rajiv Sharma, gave a Keynote address on the topic "**Advanced Non Destructive Testing for High Pressure Helium Gas Vessels in Fusion Reactors: Ensuring Safety and Performance**" under NDT for the Nuclear Applications session, at the 1st Annual Conference & Exhibition on Non-Destructive Testing and Supporting Technologies (NDT Expo 2026), at CAPITOL, The Form Celebration & Conventions, Shela, Ahmedabad, Gujarat, organized by the Indian Society for Non-Destructive Testing (ISNT), Ahmedabad, 1-2 March 2026.



Dr. Rajiv Sharma delivering his keynote talk

Dr. Mukesh Ranjan gave a keynote lecture about "**Plasmonic metal nanoparticles arrays for SERS application**" in the International Conference on Hybrid Materials: Foundation to Frontiers (ICHM 2026) organized by Graphic Era University, Dehradun in collaboration with National Physical Laboratory (NPL), CSIR, New Delhi.

Dr. Mukesh Ranjan giving the keynote lecture and receiving the appreciation

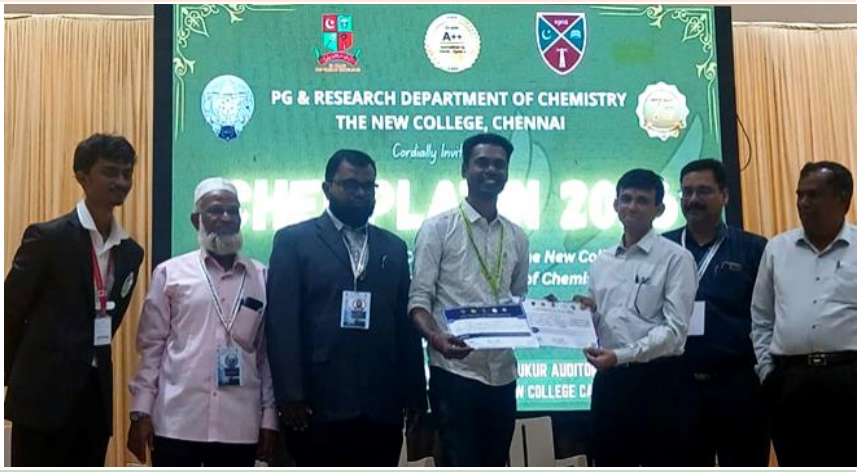
Mr. Devilal Kumawat, gave an overview talk on "**Role of Fast Visible Imaging Diagnostic in Nuclear Fusion program**" at International conference on 'Frontiers and Innovations in Physical Science and New Age Technologies', organized at KRG College, Gwalior, on 9–10 February 2026, and received a **Memento of Appreciation.**

Mr. Devilal Kumavat giving his talk (L) and Receiving the Memento of Appreciation

Conference Presentation Award

Dr. Kamalakkannan. K, gave a talk on "**Positron Annihilation and Raman Studies on N+ Implanted n-type 4H- SiC**" at National Conference on Advanced Materials for Energy, Environment and Health (NC-AMEEH 2026), The New College Campus, Chennai, 7th January 2026, and received **Best Oral Paper Presentation Award (and cash prize of Rs. 5000.00)**

Congratulations!!



Past Events @ IPR

- ***Dr. Rakhi,*** gave a talk on "Effect of Intermittent Low Energy Ion Beam Sputtering on Triangular Structure at Elevated Temperature" on 27th February 2026
- ***Mr. Ronak V Shah,*** gave a talk on "Development, Installation and Validation of Control System for operations of 1MW, 170GHz, 1000s Gyrotron System at ITERINDIA Gyrotron Test Facility" on 02nd March 2026
- ***Ms. Tarundeep Kaur Lamba,*** gave a talk on "Sequential Growth of Ag Nanoparticle on Ion-Induced Rippled Surfaces for Enhanced SERS Applications" on 05th March 2026
- ***Dr. Gayatri Barsagade,*** gave a talk on "Quasi-longitudinal whistler mode activity in magnetized plasma" on 06th March 2026
- ***Mr. Samrendra Srivastava,*** CEO, Wizzokraft Solutions, gave a talk on "Mental Health and Wellbeing of Students and staff members" on 09th March 2026
- ***Dr. Vikas Rathod,*** Walailak University, Thailand, gave a talk on "Non- thermal Plasma Technology for Environmental Sustainability" on 11th March 2026
- ***Prof. A. K. Tyagi,*** Dean, Homi Bhabha National Institute, Mumbai, gave a talk on "Sustainable Development: Role of nuclear science and technology" on 13th March 2026 (Colloquium #350)
- ***Talks presented at International Conference-cum-Round Table on Translational Research and Innovation in Beam Technologies (ICTRIBT-2026), Central University of Himachal Pradesh, 13-15 February 2026***
  - ***Mr. Deepak Rajpurohit ,*** gave a talk on "Pulse Forming Network - A Novel Excitation System to Study Whistler Dynamics and Magnetic Reconnection Phenomenon in LVPD-U"
  - ***Ms. Savita Pannu,*** gave a talk on "Magnetic Field–Assisted Thermal Arc Plasma Synthesis of Core/Shell Fe-based Nanoparticles and Their Magnetic Properties"
  - ***Mr. Akshaya Kumar Shaw,*** gave a talk on "A Time-Dependent Study of Radio-Frequency Plasma Sheaths Using the Flux- Corrected Transport (FCT) Algorithm"
- ***Mr. Sagar Choudhary,*** gave a talk on "Gyrokinetic Investigation of Transport in Weak Temperature Gradient Tokamak Plasmas" on 16th March 2026
- ***Dr. Pratik Ghosh,*** gave a talk on "Modelling of induced vessel currents in SST-1 tokamak" on 17th March 2026
- ***Dr. Amit Bhojani,*** gave a talk on "Experimental Study of Millimeter-Scale Solid Hydrogen Pellet Formation, Launching, and System Validation for Integration with Tokamak" on 18th March 2026
- ***Dr. Shantanu Kumar Karkari,*** gave a talk on "Bridging Fusion Initiatives Using Linear Plasma Device" on 19th March 2026

Upcoming Events

- 52nd IOP Annual Plasma Physics Conference, University of Aberdeen, United Kingdom, 7-10 April 2026; https://iop.eventsair.com/plasma2026/
- 7th Technical Workshop on Fuel Cycle Simulation (TWOFCS 2026), Tokyo, Japan, 15-17 April 2026; https://twofcs2026.peatix.com/view
- International Conference on the Physics of Reactors (PHYSOR 2026), Turin, Italy, 19-23 April 2026; https://www.physor2026.org/
- 25th International Stellarator and Heliotron Workshop (ISHW-2026), Cordoba, Spain, 20-24 April 2026; https://ishw2026.com/
- 2026 Sherwood Fusion Theory Conference, New Mexico, USA, 27-29 April 2026; https://www.sherwoodtheory.org/sw2026/index.php
- Nuclear and Emerging Technologies for Space (NETS-2026), Dayton, United States, 27-30 April 2026; https://www.ans.org/meetings/nets2026/
- 3rd ITER Public-Private Fusion Workshop, Saint-Paul-Lez-Durance, France, 28-29 April 2026; https://indico.iter.org/event/907/

प्लाज़्मा भौतिकी केंद्र-प्लाज़्मा अनुसंधान संस्थान (सीपीपी-आईपीआर) में हिंदी कार्यशाला

प्लाज़्मा भौतिकी केंद्र-प्लाज़्मा अनुसंधान संस्थान (सीपीपी-आईपीआर) सोनापुर, असम के सम्मेलन कक्ष में दिनांक 05/03/2026 को दोपहर 3 बजे "**कार्यालयीन पत्राचार एवं अनुवाद**" विषय पर एक हिंदी कार्यशाला का आयोजन किया गया।

कार्यशाला के प्रारंभ में डॉ. मयूर काकती, एसोसिएट प्रोफेसर-एफ द्वारा सबका स्वागत किया गया एवं कार्यशाला की विषय वस्तु की उपयोगिता के बारे में बताया गया। इसके पश्चात् प्रोफेसर एस. आर. मोहन्ती द्वारा कार्यक्रम की मुख्य अतिथि डॉ. शर्मिला ताये, हिंदी प्राध्यापक, हिंदी शिक्षण योजना, गुवाहाटी का "फूलम गामोछा" से स्वागत किया गया।

डॉ. शर्मीला ताये को इस कार्यक्रम में वक्ता के रूप में आमंत्रित किया गया था। हिंदी कार्यशाला के सत्र की शुरुआत राजभाषा से संबंधित विषयों पर एक प्रश्नोत्तरी से की गई। उन्होंने दैनिक कार्यालयीन कार्यों में राजभाषा के प्रयोग से जुड़े महत्वपूर्ण पहलुओं पर प्रकाश डाला, विशेषकर पत्र लेखन, नोटिंग तथा ड्राफ्टिंग के संदर्भ में। उन्होंने पत्र लिखते समय राजभाषा के प्रयोग के कुछ प्रमुख बिंदुओं पर बल दिया, जैसे— विषय को सरल और स्पष्ट रखना, संक्षिप्तता बनाए रखना, एकरूपता का पालन करना तथा उपयुक्त एवं स्पष्ट शब्दों का प्रयोग करना आदि।

अपने वक्तव्य के पश्चात् डॉ ताये ने अंग्रेजी और हिंदी के बीच उचित तथा प्रसंगानुकूल अनुवाद के महत्व पर विशेष रूप से बल दिया। इस कार्यशाला में नियमित और अस्थाई कर्मचारियों को मिलाकर कुल 50 कर्मचारियों ने भाग लिया।

हिंदी के प्रयोग को बढ़ावा देने हेतु यह कार्यशाला बहुत महत्वपूर्ण रही। अंत में जलपान और धन्यवाद ज्ञापन के साथ कार्यक्रम का समापन हुआ।

डॉ. शर्मिला ताये जी का स्वागत करते हुए
प्रोफेसर एस. आर. मोहन्ती

व्याख्यान के दौरान उपस्थित श्रोतागण

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Know Your Colleague

Ms Samridhi Garg holds a Bachelor's degree in Physics (Hons.) from St. Stephen's College, University of Delhi, and a Master's degree in Physics from the Indian Institute of Technology (IIT) Roorkee. She joined IPR in December 2021 as ITSO - IPR Training Scientific Officer and after completing the one-year Orientation Course for Engineers and Scientists (OCES) as part of the 65th batch at the Bhabha Atomic Research Centre (BARC) she joined the Institute for Plasma Research (IPR), Gandhinagar, in the year 2022 as a Scientific Officer–C. Currently she is serving as a Scientific Officer–D in the Plasma Diagnostic Division, Imaging and X-ray Section. Her work focuses on the development of Soft X-ray Tomography diagnostic system that enable plasma image reconstruction, an essential tool for diagnosing and analyzing plasma behaviour in fusion research. During her training, Samridhi did a project that examined the physics behind equipment shielding requirements for Hard X-ray diagnostics, contributing to the enhancement of diagnostic safety and reliability.

Outside of work, Samridhi actively participates in extracurricular activities. She enjoys playing table tennis and badminton, and regularly takes part in various events organized by the IPR Staff Club with enthusiasm.

Ms. Samridhi Garg

The IPR Newsletter Team

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