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# The Fourth State

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



## हिंदी पखवाड़ा समारोह 2023

संस्थान में इस वर्ष 18 सितंबर 2023 से 04 अक्टूबर 2023 तक हिंदी पखवाड़ा समारोह का आयोजन किया गया, जिसमें विभिन्न प्रतियोगिताएँ एवं एक हिंदी व्याख्यान का आयोजन किया गया। हिंदी पखवाड़ा समारोह के दौरान तकनीकी/गैर-तकनीकी आलेख लेखन, नारा लेखन, टिप्पण, पत्र लेखन एवं अनुवाद, वर्ग पहेली, हिंदी प्रश्नोत्तरी, हिंदी कंप्यूटर टाइपिंग, रोचक प्रसंग लेखन/प्रस्तुति, स्वरचित हास्य कविता पाठ एवं हिन्दी गीत गायन प्रतियोगिताओं का आयोजन किया गया।

दिनांक 22 सितंबर 2023 को आईपीआर के सेमिनार हॉल में “आईपीआर प्रकाशन: ब्रॉडकास्टिंग प्रक्रिया और उससे जुड़े तथ्य” विषय पर हिंदी में एक व्याख्यान का आयोजन किया गया, जिसमें वक्ता के रूप में पुस्तकालय अनुभाग से श्रीमती शिल्पा खंडकर, तकनीकी अधिकारी-डी ने बहुत ही सरल भाषा में प्रभावशाली ढंग से इस विषय पर प्रकाश डाला एवं श्रोताओं के संदेहों को दूर किया। दिनांक 26 सितंबर 2022 को आयोजित प्रश्नोत्तरी के अंतिम दौर का संचालन श्री गट्टू रमेश, वैज्ञानिक अधिकारी-एफ ने बहुत ही रोचकता से किया। प्रश्नोत्तरी में विज्ञान, सामान्य ज्ञान, हिंदी भाषा, संस्थान की गतिविधियों पर आधारित प्रश्नों को शामिल किया गया।

दिनांक 04 अक्टूबर 2023 को हिन्दी पखवाड़ा समापन समारोह आयोजित हुआ, जिसके अंतर्गत हिन्दी भाषा के प्रचार एवं प्रसार हेतु आयोजित की गई इन सभी प्रतियोगिताओं में संस्थान के कर्मियों ने उत्साहपूर्वक भाग लिया।

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

राजभाषा कार्यान्वयन की दिशा में श्रेष्ठ प्रदर्शन करने हेतु वर्ष 2022-23 के लिए संस्थान की अंतर अनुभागीय राजभाषा शील्ड – 2022 - 2023 लेखा अनुभाग को प्रदान की गई एवं राजभाषा कार्यान्वयन में उत्कृष्ट योगदान देने के लिए श्रीमती छाया चावडा, वैज्ञानिक अधिकारी – एच को वर्ष 2022-2023 के लिए राजभाषा सम्मान दिया गया।



(L) हिंदी पखवाड़ा समारोह के समापन समारोह में निदेशक महोदय द्वारा माननीय गृह मंत्री जी के संदेश वाचन (R) हिन्दी पखवाड़ा समापन समारोह के अवसर पर सम्मेलन कक्ष में उपस्थित स्टाफ सदस्य



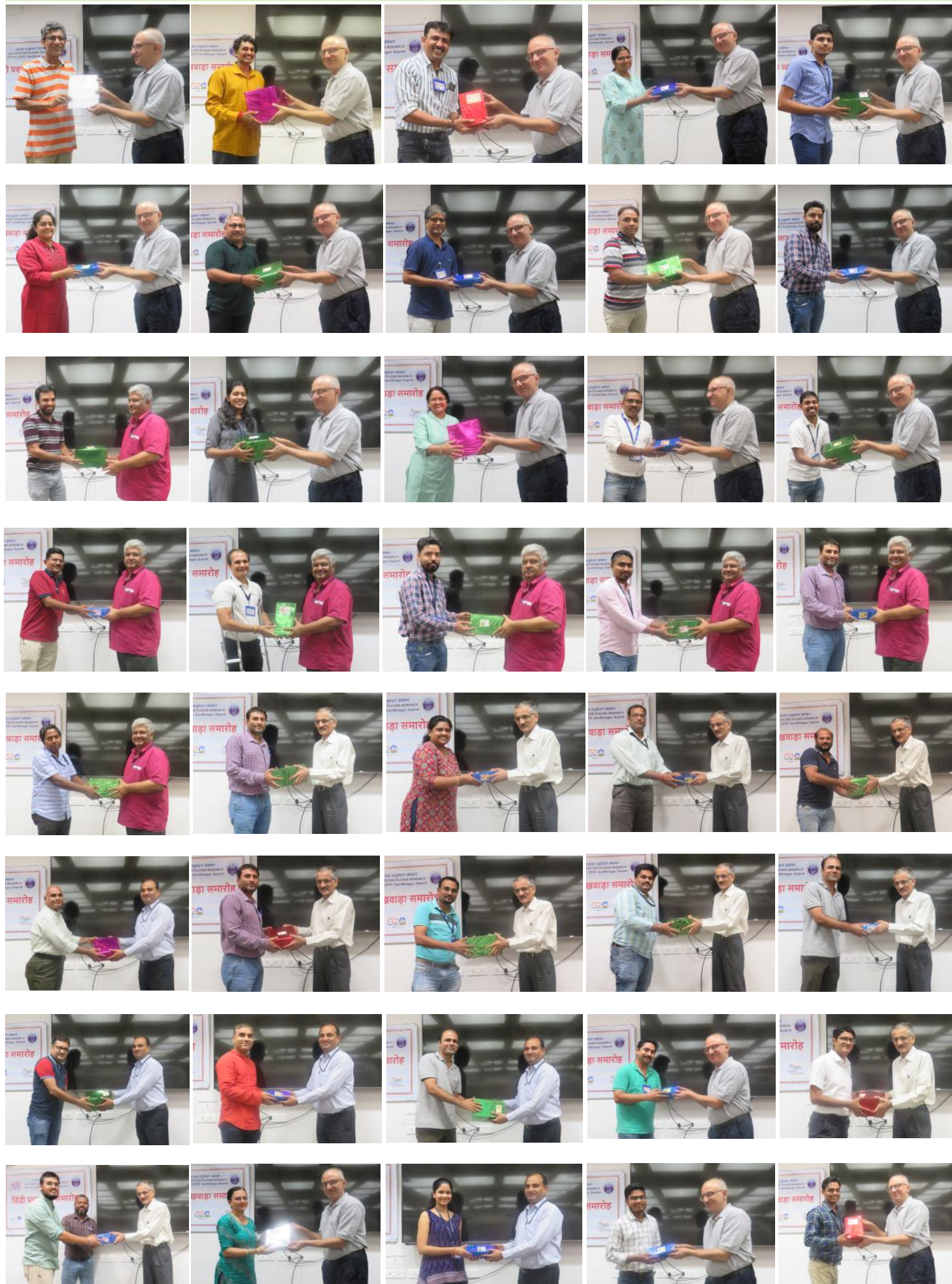


(L) लेखा अनुभाग को अंतर अनुभागीय राजभाषा शील्ड देते हुए निदेशक महोदय (R) राजभाषा कार्यान्वयन में उत्कृष्ट कार्य हेतु राजभाषा सम्मान प्राप्त करते हुए श्रीमती छाया चावड़ा



सभा को संबोधित करते हुए आई.पी.आर. स्टाफ सदस्यों की छवियाँ





हिंदी पखवाड़ा के दौरान आयोजित विभिन्न प्रतियोगिताओं के लिए पुरस्कार प्राप्त करते आईपीआर स्टाफ सदस्यों की तस्वीरें



हिंदी प्रतियोगिताओं का मूल्यांकन करने में इन निर्णायकों का योगदान शामिल हैं – श्री राज सिंह, डॉ. ललित अवस्थी, डॉ. सूर्यकान्त गुप्ता, डॉ. विपुल तन्ना, श्री निरंजन वैष्णव, श्री देवेन्द्र मोदी, श्री कुमार अजय, श्री हर्षद चामुण्डे, श्री इमरान मनसूरी, श्री अनुज हार्वे, सुश्री फाल्गुनी शाह, श्री हरीश खण्डूरी, श्री मुकेश रंजन, श्रीमती कुमुदिनी तहलियानी, श्री सरोज दास, श्री आनंद मिश्रा, श्री अतुल गर्ग, श्री गट्टू रमेश, श्री रमेश जोशी, श्री पिनाकिन देवलुक, श्रीमती मणिका शर्मा, श्रीमती दीप्ति शर्मा, श्रीमती प्रमिला, श्रीमती शिल्पा खंडकर, श्री श्रवण कुमार, श्री सुनील मिसाल, श्री नितिन बैरागी, डॉ. हिरल जोशी, डॉ. संध्या दवे, श्री मुकेश सोलंकी एवं श्री फैज़ल खान।

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



संस्थान में आयोजित हिंदी प्रतियोगिताओं की कुछ झलकियाँ और व्याख्यान देते हुए श्रीमती शिल्पा खंडकर

दिनांक	प्रतियोगिताएं	पुरस्कार	क' भाषा वर्ग	ख' भाषा वर्ग	ग' भाषा वर्ग
18 सितंबर 2023	तकनीकी आलेख	प्रथम	मुकेश रंजन	लक्ष्य सावलिया	एस. सुनील
		द्वितीय	अनीता पटेल	हिरल जोशी	सत्यप्रसाद अक्किरेड्डी
18 सितंबर 2023	गैर-तकनीकी आलेख	प्रथम	अख्तर जमाल	बादल सेवक	स्टेफ़ी सायमन
		द्वितीय	धीरज कुमार वैष्णव	रजनीकांत अमलियार	कोई प्रतिभागी नहीं
18 सितंबर 2023	नारा लेखन	प्रथम	आभा महेश्वरी	भार्गव चोकसी	समीरन मुखर्जी
		द्वितीय	प्रतिभा गुप्ता	रजनीकान्त भटासना	स्टेफ़ी सायमन
19 सितंबर 2023	टिप्पण एवं पत्र लेखन एवं अनुवाद	प्रथम	धीरज कुमार वैष्णव	पराग आर पांचाल	मानस रंजन भूयान
		द्वितीय	विनीत शुक्ला	कनुभाई परमार	सत्यप्रसाद अक्किरेड्डी
20 सितंबर 2023	वर्ग पहेली	प्रथम	रोहित अग्रवाल	रजनीकांत भटासना	सत्यप्रसाद अक्किरेड्डी
		द्वितीय	अनिल कुमार त्यागी	उन्नति पटेल	गट्टू रमेश
21 सितंबर 2023	वैज्ञानिक/तकनीकी वीडियो*	प्रथम	मुकेश रंजन	विजय वसावा	कोई प्रतिभागी नहीं
		द्वितीय	राजीव शर्मा	कौशल पंड्या	कोई प्रतिभागी नहीं
25 सितंबर 2023	हिंदी कंप्यूटर टाइपिंग	प्रथम	गट्टू रमेश		
		द्वितीय	अनिल कुमार त्यागी		
		तृतीय	स्मिता परमार		
26 सितंबर 2023	हिंदी प्रश्नोत्तरी	प्रथम	वृषांक मेहता एवं प्रकाश परमार		
		द्वितीय	ब्रिजेशकुमार एवं एल.एन. गुप्ता		
		तृतीय	रजनीकान्त भटासना एवं संदीप सिंह		
27 सितंबर 2023	रोचक प्रसंग लेखन (परिवार सदस्य)	प्रथम	श्रीमती वैशाली शर्मा - पत्नी, राजीव शर्मा		
		द्वितीय	श्रीमती प्रतिभा मिसाल - पत्नी, सुनील मिसाल		
27 सितंबर 2023	रोचक प्रसंग प्रस्तुति	प्रथम	मनु बाजपेयी	कौशल पंड्या	किशोर कांति मिश्र
		द्वितीय	नितिन बैरागी	हिरल जोशी	सुश्री मोनालिषा साहू
4 अक्टूबर 2023	स्वरचित हास्य कविता पाठ	प्रथम	विकास कुमार	पिनाकिन देवलुक	समीरन मुखर्जी
		द्वितीय	कुलदीप कुमार	परांग पंचाल	किशोर कांति मिश्र
4 अक्टूबर 2023	गीत गायन	प्रथम	कुमार अजय		
		द्वितीय	शिल्पा खंडकर		
		तृतीय	दिपल सोनी		
	राजभाषा सम्मान	श्रीमती छाया चावडा, वैज्ञानिक अधिकारी-एच			
	अंतर अनुभागीय राजभाषा शील्ड	लेखा अनुभाग			

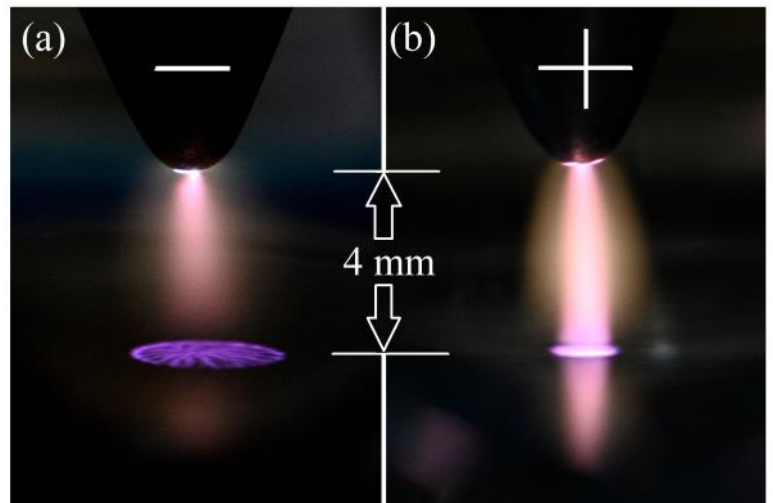
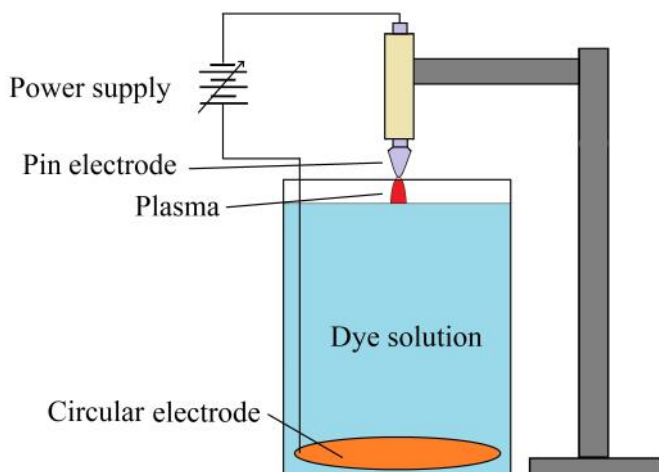


In the last few decades, considerable interest has been given to generation of large volume (diffuse) discharge at atmospheric pressure. One of the ways for achieving this is by generating discharges with liquid electrodes, namely atmospheric pressure glow discharge plasma (APGDP).

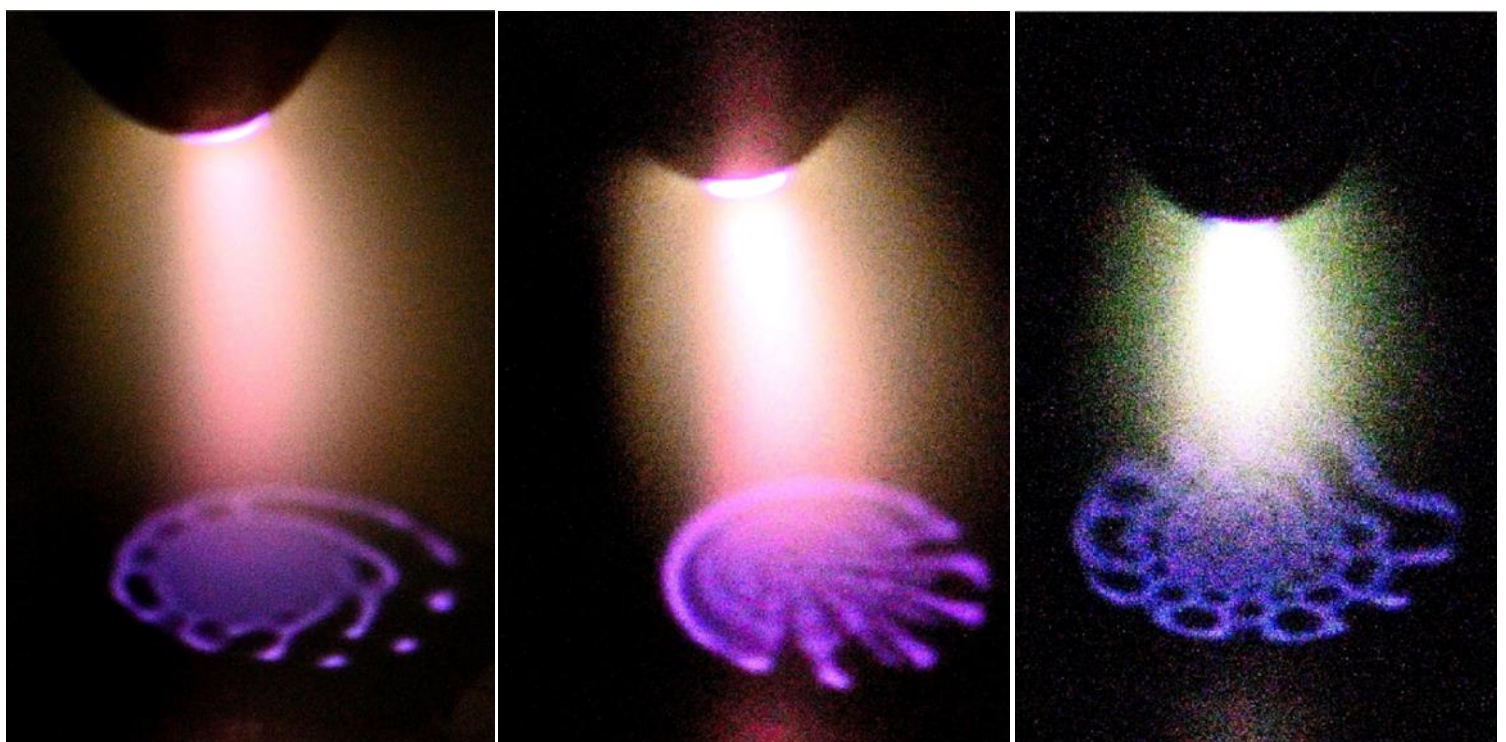
The liquid (e.g. water) electrode stabilizes the plasma by preventing localization of discharges and thereby arcing or sparking. The set-up usually consists of a pin electrode kept a few millimeters above the surface of the water volume into which the second electrode is immersed. Advantages of APGD plasma includes ability to operate with DC as well as AC power sources and operation without gas supply. With DC power sources, the set up can be operated in liquid anode as well as liquid cathode mode.

At CPP-IPR, APGD plasma is being explored for treatment of waste water from textile industries and nanoparticle synthesis. Treatment of methylene blue, methyl red and methyl orange dyes by APGD plasma were conducted. Plasma interacting with water produces numerous active species like OH, singlet oxygen ( $O$ ), ozone ( $O_3$ ), hydrogen peroxide, etc. which react with the dye molecules and decompose them.

It has been found that the degradation efficiency is comparable to other plasma devices operated in air. One interesting observation is that due to anodic dissolution, copper ions are emitted from copper anodes in liquid anode mode. These copper ions undergo Fenton like reactions in which they react with hydrogen peroxide leading to the formation of OH radicals. This further increases the degradation of dyes as OH radicals have higher oxidation potential than hydrogen peroxide. The anodic dissolution of copper electrodes also leads to the formation of Copper hydroxides in distilled water, which when heated produce pure phase CuO nanoparticles.



(L) Schematic diagram of APGD plasma set up (R) Photographs of APGD plasma operated in (a) liquid anode and (b) liquid cathode mode.



Photographs of self-organized patterns (SOPs) formed on liquid surface when operated in liquid anode. Exposure times (L) 1/200 sec (M) 1/250 sec (R) 1/3200 sec



Date	Institution	Visitors
12-Oct-2023	Synod College, Shillong, Meghalaya	19 students of B.Sc. Physics and 4 teachers





Date	Institution	Visitors
21-Sept-2023	Panchteerth Vidyalaya, Ahmedabad	123 students of 11th class (science)
23-Sept-2023	Parul Institute of Applied Sciences, Waghodiya, Vadodara	43 students of BSc., MSc (Physics, Math)
4-Oct-2023	Vishwakarma Govt. Engineering College, Ahmedabad	19 students of BTech (Electrical)
9-Oct-2023	Anand Niketan school, Sughad, Gandhinagar	67 students of classes 10-12 (Science)
10-Oct-2023	Air Force Family Welfare Association, Gandhinagar	26 students of classes 6-10



Students of Parul Institute of Applied Sciences, Waghodiya, Vadodara, during their visit to IPR



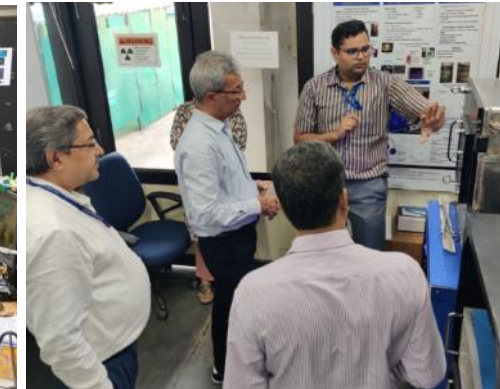
Students of Vishwakarma Govt. Engineering College, Ahmedabad, during their visit to IPR



Students of Anand Niketan School, Sughad, Gandhinagar, during their visit to IPR



Shri M. K. Sapra, OS & Scientific Secretary, BRNS, along with a team of officers, visited IPR and FCIPT on 6 Sept 2023. Shri Sapra delivered a talk on “*Role & Functioning of BRNS*” at IPR. The talk was attended by many officers of the institute, who are/could be potential PCs or reviewers of ongoing / future BRNS projects. The talk was followed by fruitful interactions between attendees and BRNS team. Later, the BRNS team visited various labs in IPR and FCIPT.

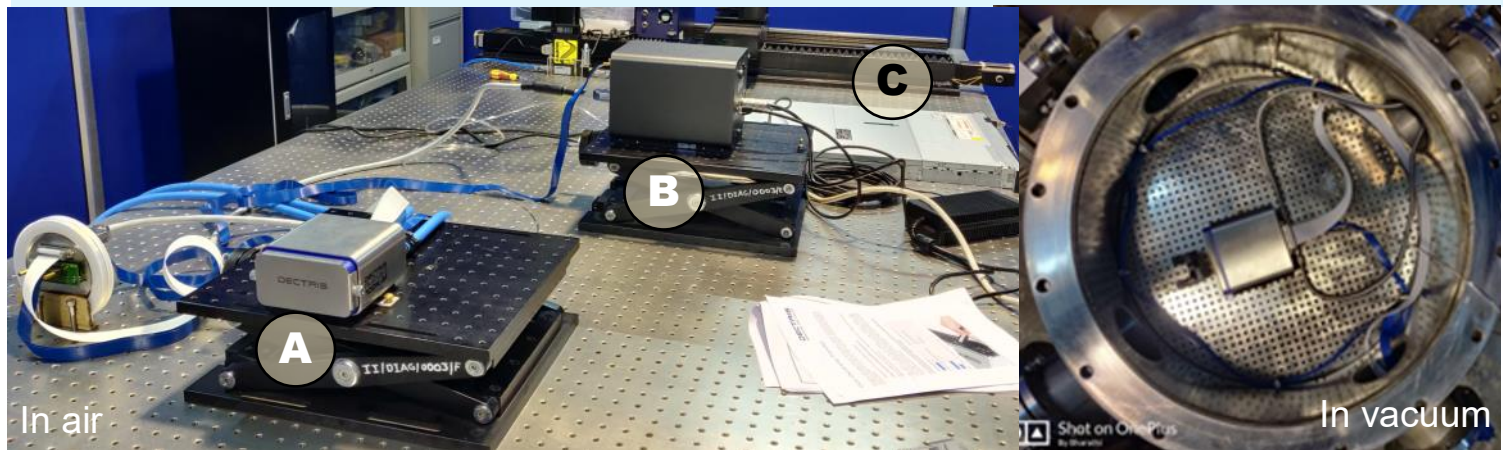




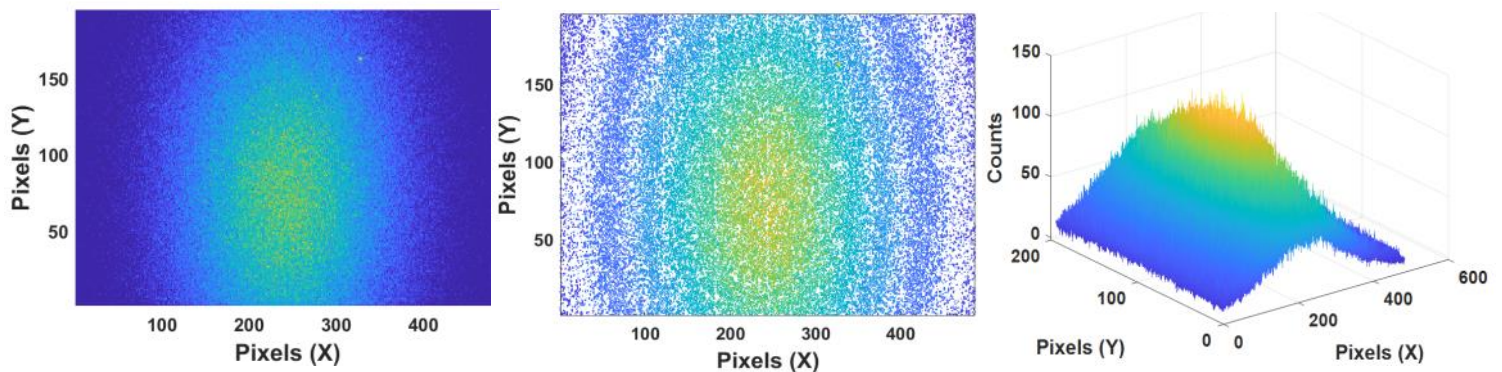
ITER-India has successfully tested, vacuum compatible large area Hybrid Photon Counting detector (HPC), PILATUS3 at ITER-India Diagnostics Laboratory.

Manufactured by M/s Dectris Ltd, the PILATUS3 detector is a novel single-photon counting pixel detector based on advanced CMOS technology. It consists of an array of 487X195 pixels, with a pixel size of  $172 \times 172 \text{ m}^2$ . Each pixel is operated in a single photon-counting mode such that only X-ray photons above a set threshold energy are counted. Each pixel has a  $2^{20}$  bit depth implying that  $\sim 10^7$  counts/s photons can be achieved per pixel per exposure. This detector, unlike conventional X-ray CCDs, is free from dark current or read-out noise thus provides good signal-to-noise and point spread function.

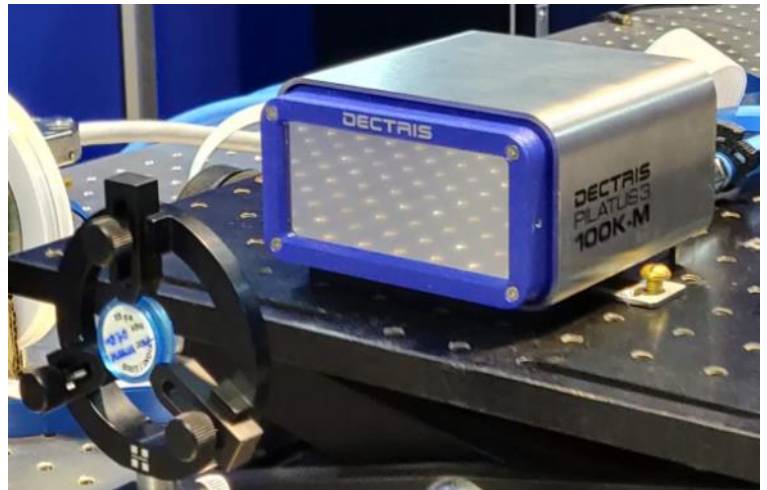
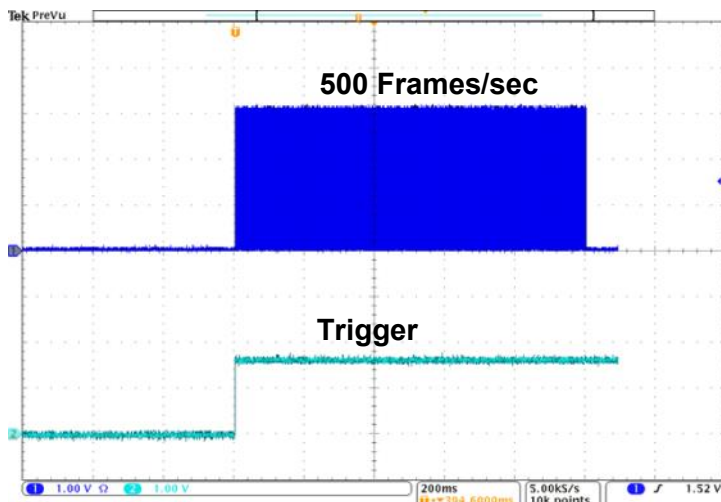
Various in-air and in-vacuum tests were performed using various X-ray sources. A preliminary assessment of count to photon correspondence, the remote operation and various studies related to the linearity and thresholds were also carried out. The energy response of the detector were carried out using laboratory X-ray sources: Fe 55, Co -57 and Cd -109 (radio nuclide sources). This PILATUS3 is part of X-Ray Crystal Spectrometer which require large area X-ray detectors with high frame rate to detect X ray radiation in range of 2 keV to 13 keV with a temporal resolution  $< 10 \text{ ms}$ . The X-Ray Crystal Spectrometer, part of India's in-kind contribution to ITER project, will be used to measure ion temperature and impurity concentration of the plasma.



Operation of the PILATUS-3 detector. (A) Detector head (B) Detector Electronics Unit, (C) Detector Control Unit



(L) Image of X-ray source (Co-57) on the detector. Energy : 6.4 keV & 7.1 keV (M) 2D- mapping of source onto detector (R) Intensity distribution



(L) Frame rate test of the detector (R) Close-up of the detector-X-ray source test setup



IPR Outreach conducted a week-long scientific outreach programme (Rural) at the main campus of the **Vidyamandir Trust, Palanpur**, Gujarat during 25-27 July, 2023. This program is part of IPR's rural scientific outreach activity in the state of Gujarat. The programme consisted of an exhibition on plasma, its applications as well as introductory talks on plasma for visiting students.

The event was inaugurated by Ms. Manjula Sachin, Assistant Director (English medium), Vidyamandir Trust. For this exhibition, 83 UG students from various schools under the Vidyamandir Trust were trained by IPR team to explain the exhibits to visiting students in their local language.

Eight science teachers from Vidyamandir Trust were also imparted training on plasma, its applications and nuclear fusion. Over 5000 students and general public visited the exhibition at Vidyamandir Trust. More details [HERE](#).



The Plasma exhibition at Vidyamandir Trust campus, Palanpur



Inauguration of the exhibition



Introducing plasma to visiting students





Training programme on plasma for teachers



Images from the plasma exhibition at Palanpur



During the “**Swachhata Hi Sewa**” campaign organized during 18 Sept to 2 Oct 2023 at IPR, FCIPT, CPP-IPR and ITER-India, the following events were organized;

- Banner display at IPR, FCIPT, ITER-India and Centre of Plasma Physics, Guwahati, Assam
- Swachhata Pledge was taken by staff at IPR, FCIPT, ITER-India and CPP-IPR
- Special cleaning and garbage collection drives undertaken at IPR, FCIPT, ITER-India and CPP-IPR campuses
- Slogan writing competition on Swachhata organized at IPR and CPP-IPR
- Talk on Swachhata awareness by Shri Devendra Parekh from Environmental Sanitation Institute, Sughad.
- **Shramdaan**: Plastic garbage collection drive was conducted on 1 Oct 2023 at IPR in which about 60 participants including staff members, volunteers and Swachhata Sevaks took part. Terrace of IPR premises was also cleaned during the drive. CPP-IPR also conducted the cleanliness drive at nearby Tepesia village as part of **Swachhata Abhiyan**.
- Posters on sanitation awareness were displayed at IPR premises to spread Swachhata messages.
- The committee invited students from local schools to take part in a Swachhata walk and a quiz competition on 2 Oct with a focus on Swachhata practices. The students also participated in the Swachhata pledge ceremony and Swachhata walk from IPR to Kanoria hospital carrying Swachhata banners and voicing Swachhata awareness slogans.
- Slogan writing competition and a oral presentation competition was organized by CPP-IPR.
- Staff members and volunteers participated in the tree plantation event which was held on 2 Oct 2023 at IPR campus.



Collection and removal of solid waste and garbage at IPR main campus



Tree plantation drive conducted as part of the SHS campaign.



“**Man Ki Swachhata**” an interactive talk by Shri Vivek Sharma from the Art of Living foundation



The campaign's final session featured an interactive presentation on "Man Ki Swachhata" by senior members of "Art of Living" foundation Shri Vivek Sharmaji and Ameya Munjeji. IPR employees and students participated in the session. The campaign activities were briefly summarized and the winners of the slogan contest were presented with prizes. Chairman of the Swachhata Hi Seva Campaign Committee 2023, Mr. Dilip Raval, presented the vote of thanks. Dr. Mukherjee Dean (Administration), and CAO Shri Niranjana Vaishnav also addressed the audience and shared their views on the campaign.



Swachhata Walk at (L) IPR main campus (R) CPP-IPR campus



Shramdaan at CPP-IPR : Cleaning of Panchayat road at Tepesia village by CPP-IPR Team



Shramdaan at IPR : Cleaning of campus roads/terraces and collection of plastic waste



(L) Quiz competition for school students (R ) School students taking the Swachhata pledge





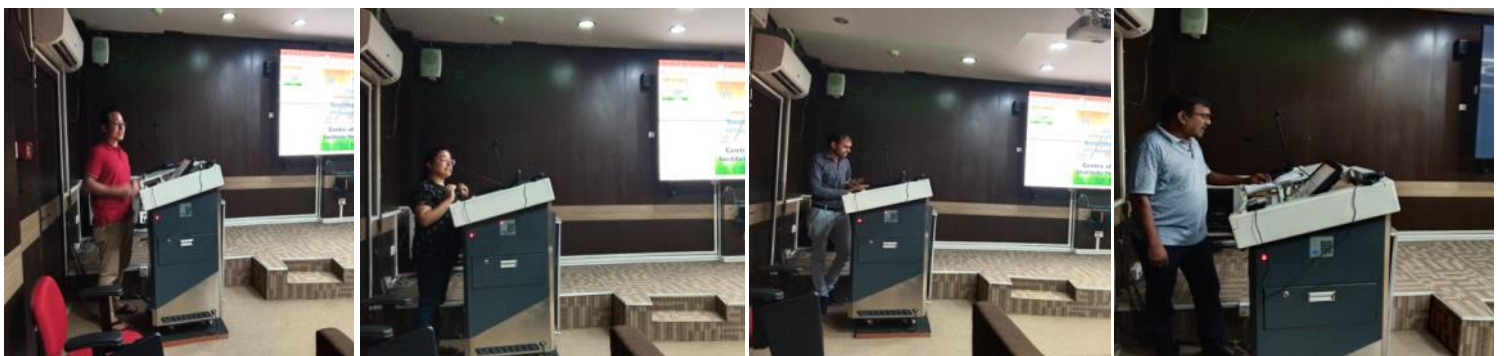
Volunteers in action for Swachhata at CPP-IPR



Swachhata Pledge being taken at (L) IPR main campus (R ) ITER-India campus



(L) Swachhata Pledge being taken at CPP-IPR campus (R) Talk on Swachhata awareness at IPR by Shri Devendra Parekh, Environmental Sanitation Institute, Sughad.



A talk competition on Swachhata awareness being conducted at CPP-IPR





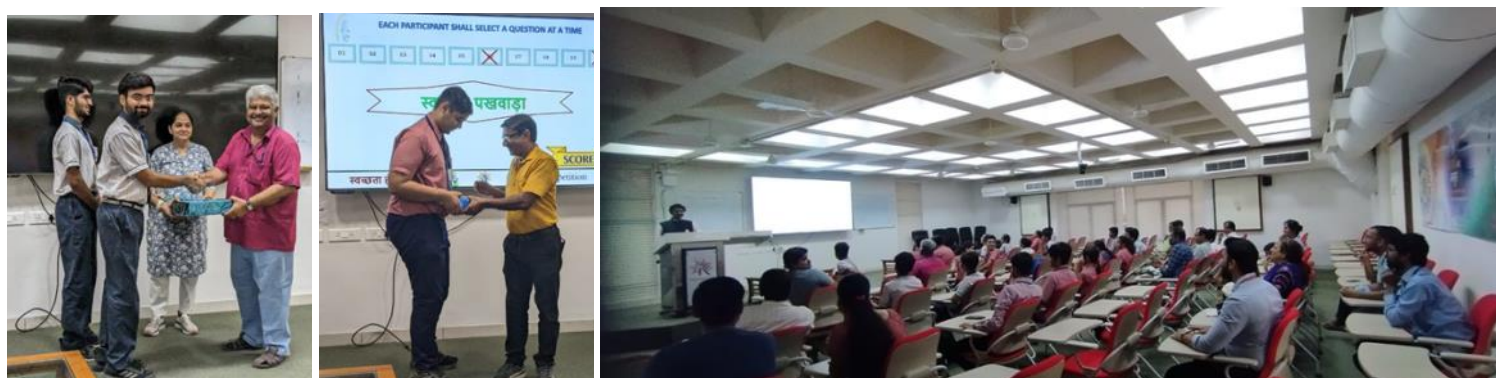
Concluding remarks by (L) Shri. Nirajan Vaishnav (M) Shri Dilip Raval (R) Dr. S. Mukherjee



Winners of the various competitions organized under SHS campaign receiving their prizes



SHS volunteers from CPP-IPR



Winners of the quiz programme organized for school children receiving their prizes



प्लाज़्मा भौतिकी केंद्र-प्लाज़्मा अनुसंधान संस्थान (सीपीपी-आईपीआर) सोनापुर, असम के सम्मेलन कक्ष में दिनांक 14/09/2023 से 20/09/2023 तक हिंदी सप्ताह का आयोजन किया गया। इस दौरान स्टाफ सदस्यों के बीच विभिन्न प्रतियोगिताओं का आयोजन किया गया, जिसमें अधिक से अधिक स्टाफ सदस्यों ने बढ़-पढ़ कर भाग लिया।

**दिनांक 14/09/2023 का कार्यक्रम (आरंभ) :** सर्व प्रथम, हिंदी सप्ताह का शुभारंभ स्वागत भाषण के साथ किया गया। इसके बाद, श्री पी. के. गगोई, प्रशासनिक अधिकारी-I द्वारा माननीय गृह मंत्री जी के संदेश का वाचन किया गया। तत्पश्चात्, श्री विकाश कुमार रॉय द्वारा “हिंदी दिवस का महत्त्व” से सभी उपस्थित सदस्यों को अवगत कराया गया। इस दिन स्टाफ सदस्यों के लिए आशुभाषण प्रतियोगिता रखा गया, जिसमें स्टाफ सदस्यों ने बढ़-पढ़ कर भाग लिया।

**दिनांक 20.09.2023 का कार्यक्रम (समापन) :** सर्व प्रथम, प्रो. बी.के. साईकीया, कार्यकारी केंद्र निदेशक द्वारा मुख्य अतिथि श्रीमती बर्णाली बैश्य, सहायक प्रोफेसर (हिंदी विभाग), सोनापुर कॉलेज, सोनापुर को “फूलम गामोछा” से स्वागत किया गया। उसके बाद, हिंदी सप्ताह समापन समारोह का आरंभ कार्यकारी केंद्र निदेशक के विशेष भाषण से किया गया, जिसमें उन्होंने राजभाषा हिंदी के इतिहास से सभी को अवगत कराया। इसके साथ-साथ उन्होंने आशा व्यक्त की कि इस केन्द्र के अधिकारी/कर्मचारी अपनी ज़िम्मेदारी को समझते हुए अधिक से अधिक कार्य हिंदी में करने का प्रयास करेंगे। तत्पश्चात्, मुख्य अतिथि श्रीमती बर्णाली बैश्य द्वारा राजभाषा हिंदी से संबंधित महत्वपूर्ण जानकारी से सभी को अवगत कराया गया। इस दिन हिंदी सप्ताह समापन समारोह के अवसर पर कविता पाठ प्रतियोगिता और स्व-लिखित कहानी कथन प्रतियोगिता का आयोजन किया गया तथा विजेता बने प्रतियोगियों को पुरस्कृत किया गया। हिंदी सप्ताह, 2023 कार्यक्रम में कुल छः प्रतियोगिताओं का आयोजन किया गया, जिसमें हिस्सा लेकर विजेता बने प्रतिभागियों का विवरण इस प्रकार है:-

1.	<b>आशुभाषण प्रतियोगिता</b>		
	विजेता बने प्रतियोगियों का नाम		
	श्री राजेश गुप्ता	श्री जयंत गोस्वामी	श्री कौशिक कलिता
2.	<b>निबंध लेखन प्रतियोगिता</b>		
	प्रथम पुरस्कार	द्वितीय पुरस्कार	तृतीय पुरस्कार
	श्रीमती भांजुमा दत्ता	श्री राजेश गुप्ता	सुश्री प्रिता डेका
3.	<b>नारा लेखन प्रतियोगिता</b>		
	प्रथम पुरस्कार	द्वितीय पुरस्कार	तृतीय पुरस्कार
	श्रीमती भांजुमा दत्ता	श्रीमती रूपांजली क्षत्रिय	श्रीमती तरुलता डेका
4.	<b>स्वरचित कविता लेखन प्रतियोगिता</b>		
	प्रथम पुरस्कार	द्वितीय पुरस्कार	तृतीय पुरस्कार
	श्री पी.के. गगोई	श्रीमती भांजुमा दत्ता	श्री अमरेंद्र बैश्य
	<b>सांत्वना पुरस्कार प्राप्त करने वाले प्रतियोगियों का नाम</b>		
	सुश्री प्रिता डेका	श्री राजेश गुप्ता	सुश्री लकी सैकिया
	श्री सतींद्र शर्मा	श्री जयंत गोस्वामी	श्रीमती रूपांजली क्षत्रिय
5.	<b>कविता पाठ प्रतियोगिता</b>		
	प्रथम पुरस्कार	द्वितीय पुरस्कार	तृतीय पुरस्कार
	श्री पी.के. गगोई	श्री बी. के. राय	श्री राजेश गुप्ता
6.	<b>स्व-लिखित कहानी कथन प्रतियोगिता</b>		
	प्रथम पुरस्कार	द्वितीय पुरस्कार	तृतीय पुरस्कार
	श्री राजेश गुप्ता	श्री जयंत गोस्वामी	श्रीमती रूपांजली क्षत्रिय





हिंदी सप्ताह समारोह के दौरान आयोजित विभिन्न प्रतियोगिताओं के लिए पुरस्कार प्राप्त करते सीपीपी-आईपीआर स्टाफ सदस्यों की तस्वीरें



हिंदी सप्ताह समारोह के समापन सत्र के दौरान दर्शकों का दृश्य



सीपीपी-आईपीआर हिन्दी सप्ताह समारोह की आयोजक टीम



- ◆ **Mr. Nitin Bairagi**, gave a talk on “Feasibility study of HTS current leads with MgB<sub>2</sub> shunt for Tokamak application” at 28th International Conference on Magnet Technology, France, 10-15 September 2023
- ◆ **Talks presented at 15th International Symposium on Fusion Nuclear Technology, Spain, 10-15 September 2023**
  - Mr. Deepak Yadav, gave a talk on “Development of lab-scale Atmospheric Molecular Sieve Bed and generation of experimental break through curves for adsorption studies”
  - Mr. Mitul Abhangi, gave a talk on “Neutron Emission Characterization of IPR 14 MeV Neutron Generator”
  - Mr. Manohar Stephen M, gave a talk on “In- Vessel Inspection System: Development and Testing Activities of High Vacuum and Temperature Technologies for Fusion Remote Handling”
- ◆ **Mr. Sidharth Kumar Dash**, gave a talk on “Visible camera-based diagnostic to study negative ion beam profiles in ROBIN ion source” at International Conference on Ion Sources, Canada, 17-22 September 2023
- ◆ **Talks presented at 3rd International Conference on Plasma Theory and Simulations, Jawaharlal Nehru University, New Delhi, 21-23 September 2023**
  - **Dr. Mukesh Ranjan**, gave an invited talk on “Simulating Plasma Ion Produced Nanostructures and some Applications”
  - **Dr. Mukti Ranjan Jana**, gave an invited talk on “Theory and Simulation of High Power Ion Beam”
  - **Dr. Santosh Pandya**, gave a talk on “Analytical modelling of charge-exchange (CX) neutral particle analyzer measurements in ADITYA tokamak and estimation of CX power loss”
  - **Mr. Gajendra Singh**, gave a talk on “Relativistic Atomic Structure Calculations of Li-Like Ions used for Plasma Diagnostics”
  - **Mr. Srikanta Sahu**, gave a talk on “Magneto-convective fluctuations in MHD duct flow of electrically conducting fluid in transverse magnetic field”
  - **Mr. Kushagra Nigam**, gave a talk on “Parametric study of microwave field distribution in plasma sterilization chamber”
  - **Ms. Jyoti Agarwal**, gave a talk on “Simulation study of electron drift injection system for plasma start-up in a tokamak”
  - **Mr. Akshaya Kumar Shaw**, gave a talk on “Impact of two group of electrons in an equilibrium steady state multi component magnetized plasma sheath”
  - **Dr. Nirmal K. Bisai**, gave a talk on “Ion temperature modeling for the edge and Scrape-off layer plasma turbulence”
  - **Ms. Kumudni Assudani**, gave a talk on “Comparison of reconstruction algorithms for bolometric measurements in tokamak plasma”
- ◆ **Dr. Yetendra Prasad Jha**, Indian Institute of Technology, Delhi, gave a talk on “Sheath Characteristics of an Electron Emitting Wall in an Electropositive/Electronegative Plasma” on 25th September 2023
- ◆ **Dr. Mukesh Ranjan**, gave an invited talk on “Low energy ion produced nanopatterns for SERS sensing and wettability applications” at International Conference on Condensed Matter and Device Physics, Pandit Deendayal Energy University, Gandhinagar, 27-29 September 2023
- ◆ **Mr. Arnab Deka**, gave a talk on “Design, Development and Characterization of Doppler Shifted Spectroscopic Diagnostic system for negative hydrogen ion beam in fusion application” on 29th September 2023
- ◆ **Mr. Piyush Prajapati**, gave a talk on “An Engineering Study of Concepts for Power Extraction from Tokamak Fusion Reactors” on 06th October 2023
- ◆ **Dr. Rohit Sharma**, Amity University, Noida, UP, gave a talk on “Two dimensional (2D) transition metal dichalcogenides (TMDC) material for the electronic applications” on 06th October 2023
- ◆ **Dr. Shilpa Singh**, Gujarat University, Ahmedabad, gave a talk on “Structural Phase Transition, Defect Formation and Diffusion in Actinide Dioxides: A Theoretical Study” on 11th October 2023
- ◆ **Ms. Priyanka Tiwari**, gave a talk on “Analysis, Design and Characterization of Metasurfaces for RCS Reduction” on 12th October 2023
- ◆ **Dr. Tejal Barkhade**, gave a talk on “Impact of Plasma on Bacterial Inactivation: Studies on Probable Biochemical Actions and Mechanisms” on 12th October 2023
- ◆ **Dr. Radhe Shyam**, Malaviya National Institute of Technology, Jaipur, gave a talk on “Tuning the structural and optical properties of (K, Na)NbO<sub>3</sub> thin films using different approaches” on 12th October 2023
- ◆ **Mr. Jagannath Mahapatra**, gave a talk on “Magnetohydrodynamic study of Magnetic Island Coalescence - Role of Shear Flows” on 16th October 2023
- ◆ **Dr. Manoj Kumar Rajbhar**, Indian Institute of Technology, Bhubaneswar, gave a talk on “Low Energy Ion Beam Induced Modification of Functional Nanomaterials” on 20th October 2023
- ◆ **Mr. Nitin Bairagi**, gave a talk on “Study of MgB<sub>2</sub> based Superconducting Current Feeders System for Fusion Devices” on 25 Oct 2023

## Upcoming Events

- ◆ 3rd Symposium on “Meteoroids, Meteors and Meteorites: Messengers from Space” (MetMeSS-2023), Indian Planetary Science Association (IPSA), Physical Research Laboratory, Ahmedabad, 1–3 November 2023; <https://www.prl.res.in/~plas/metmess2023.html>
- ◆ Workshop on Electromagnetics and Microwave Engineering: Pedagogy, Research Trends and Applications (EMPRA 2023), BITS Pilani, Hyderabad Campus, 1 - 3 November 2023; <https://www.bits-pilani.ac.in/empira-2023>
- ◆ 13th Asian-European International Conference on Plasma Surface Engineering (AEPSE 2023), Busan, South Korea, 05-08 November 2023; <http://www.aepse.org/2023/index.html>
- ◆ 3rd IEEE International Conference on Recent Advances in Systems Science and Engineering (RASSE 2023), Saintgits College of Engineering, Kerala, 8-11 November 2023; <https://2023.ieeerasse.org/>
- ◆ 7th Asia-Pacific Conference on Plasma Physics (AAPPS-DPP2023), Port Messe Nagoya, Japan, 12-17 November 2023; <http://aappsdp.org/DPP2023/index.html>
- ◆ International Conference on Heavy Ion Collisions at Near-Barrier Energies (FUSION23), Shizuoka, Japan, 19-24 November 2023; <https://asrc.jaea.go.jp/soshiki/gr/HENS-gr/fusion20/index.html>
- ◆ Meghnad Saha Memorial International Conference on Frontiers of Physics (MSMICFP-2023): “The Centenary Celebration of the Department of Physics”, University of Allahabad, Prayagraj, 22-24 November 2023; <https://www.msmicfp2023.com/>
- ◆ IAEA Workshop on Artificial Intelligence for Accelerating Fusion and Plasma Science, IAEA Headquarters, Vienna, Austria, 28 November - 01 December 2023; <https://conferences.iaea.org/event/335/>
- ◆ 2nd Technical Meeting on the Collisional-Radiative Properties of Tungsten and Hydrogen in Edge Plasma of Fusion Devices, IAEA, 28 November - 1 December 2023; <https://amdis.iaea.org/meetings/tm-tungsten-hydrogen-2/>



Institute for Plasma Research (IPR), Gandhinagar (Gujarat), in association with the **Vishwabharati School, Thaltej**, Ahmedabad, organized an exhibition on Plasma, the fourth state of matter during 8-10 July, 2023. This program is part of IPR's rural scientific outreach activity in the state of Gujarat. The programme consisted of an exhibition on plasma, its applications as well as introductory talks on plasma for visiting students. For this exhibition, science students from class 9-11 as well as students of B.Ed. course of Vishwabharati were trained by IPR team to explain the exhibits to visiting students in their local language. Over 800 students and general public visited the exhibition at Vishwabharati School. For more information, click [HERE](#).



View of the plasma exhibition at Vishwabharati School, Thaltej



Inauguration of the plasma exhibition at Vishwabharati School, Thaltej



The plasma exhibition in progress at Thaltej





Introducing plasma to visiting students



Students enjoying the comic book on plasma



IPR team with the scientific volunteers from Vishwabharati School, Thaltej, Ahmedabad



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## Know Your Colleague



**Ms. Moni Banaudha** completed her Diploma in Instrumentation and control engineering in the year 2010 from IERT, Prayagraj, U.P. Moni joined IPR in October 2011 as Scientific Assistant-B, in magnet system division and since 2022, she has been working as Scientific Assistant-D with the Cryopump and Pellet Injector System Division. Her major contribution was in the development of Quench Detection System (QDS) and Poloidal Field (PF) Induced voltage measurement system (PIVMS) for SST-1. She was responsible for testing, validation and maintenance of QDS and PIVMS in multiple SST-1 campaign up to 2022. She was involved in multiple SST-1 campaigns for the magnet related work activity and troubleshooting during plasma experiments. She is currently involved in developing data acquisition and control system (DAC) for multiple lab facility of the current division using PXI & PLC based systems. Recently she has developed Labview based DAC system for Pellet Injector System. Moni completed her B.E (ECE) from The Institution of Engineers (India) in the year 2018. She was awarded "Smt. Alpa Bharat Patel Merit/Medal" by the Institution of Engineers (India), Gujarat State Centre for securing the highest marks in AMIE section "B" in ECE branch.

## Plasma Exhibition @ Palanpur



IPR team with the volunteers from Vidyamandir Trust during the Plasma exhibition held at Palanpur

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