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The Fourth State

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76th Independence Day Celebrations @ IPR

The 76th independence day was celebrated at IPR on 15th August, 2022. Director IPR received a guard of honour from the IPR security staff before unfurling the national flag, which was followed by the national anthem. Following this, he addressed the gathering of IPR staff and family members. In his address, he touched upon some of the scientific achievements of IPR in the past year. This was followed by a "Freedom run" within the campus. A painting competition for children of IPR staff members was conducted by the IPR Staff Club. A musical chair competition and an open quiz competition on "Azadi Ka Amrut Mahotsav" were also conducted for the staff members. The programme concluded with prize distribution and lunch.



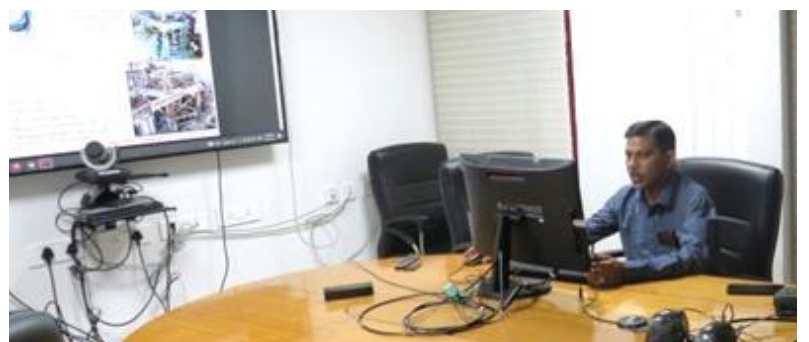
Images from the flag hoisting ceremony held at IPR main campus

The 76th Independence Day was observed at CPP-IPR where the national flag was hoisted by Prof. B. K. Saikia, Centre Director, at 9AM. It was followed by sports and cultural competitions among the employees and their family members. The sports included traditional Assamese indoor games and the cultural function consisted of group and individual songs and dances. Prizes were distributed to the winners. Earlier on 12th August, a quiz competition on Indian history, with emphasis on the freedom struggle, was conducted among the employees. The quiz was conducted by Mr. Himangshu Sarmah, Department Of Retail Management and Information Technology, Sonapur College.



राजा रामन्ना प्रगत प्रौद्योगिकी केंद्र(आरआरकेट), इंदौर द्वारा दिनांक 26 जुलाई, 2022 को "आत्मनिर्भर भारत हेतु उत्कृष्ट, स्वदेशी एवं प्रासंगिक तकनीकियों का विकास" विषय पर हिंदी में वैज्ञानिक संगोष्ठी आयोजित की गई। यह संगोष्ठी ऑफलाइन एवं ऑनलाइन माध्यम से आयोजित की गई, जिसमें परमाणु ऊर्जा विभाग की विभिन्न इकाइयों/संगठनों/सहायता प्राप्त संस्थानों के अधिकारियों ने उक्त विषय के अंतर्गत उप-विषय पर अपनी प्रस्तुति दी। इस संगोष्ठी में आरआरकेट, इंदौर, ईसीआईएल, हैदराबाद, वीईसीसी, कोलकाता, आईपीआर, गांधीनगर, एनपीसीआईएल, मुंबई, आर आर साईट, रावतभाटा एवं भापअके, मुंबई के प्रतिभागियों द्वारा कुल 16 वार्ताएं दी गई, जिसमें से प्लाज्मा अनुसंधान संस्थान, गांधीनगर की ओर से पाँच वार्ताएं प्रस्तुत की गई, जिसका विवरण निम्नलिखित है:

क्रम सं.	अधिकारी का नाम व पदनाम	विषय
1	डॉ. प्रवीण कुमार आत्रेय डीन, अनुसंधान एवं विकास	प्लाज्मा अनुसंधान संस्थान का विगत कुछ वर्षों में नाभिकीय ऊर्जा तथा प्लाज्मा प्रौद्योगिकी में उल्लेखनीय योगदान
2	डॉ. भरत दोशी, वैज्ञानिक अधिकारी-एच	आदित्य टोकामक और इसकी सहायक संरचना
3	श्री राज सिंह, वैज्ञानिक अधिकारी -एच	फ्यूजन ऊर्जा- उम्मीदें एवं चुनौतियाँ
4	सुश्री प्रतिभा गुप्ता, वैज्ञानिक अधिकारी-एफ	प्लाज्मा अनुसंधान संस्थान (आईपीआर) में कोविड की रोकथाम हेतु कार्याचित स्वदेशी तकनीकियाँ
5	श्री राजीव शर्मा, वैज्ञानिक अधिकारी-डी	क्रायोजेनिक डिवाइज के स्वदेशी विकास की गतिविधियाँ और कार्य - मेक इन इंडिया की संकल्पना और आत्मनिर्भरता की ओर



The heat generated in the ITER Tokamak along with the heat generated by auxiliary heating systems and supporting systems (approximately 1150 MW) will be transferred to the atmosphere with the help of Cooling Water System (CWS). The CWS consists of four sub-systems, viz. Tokamak Cooling Water System (TCWS), Component Cooling Water System (CCWS), Chilled Water System (CHWS) and Heat Rejection System (HRS). Among these sub-systems, the supply of CCWS, CHWS and HRS is part of India's in-kind contribution to ITER project as one of the nine procurement packages.

The route from design to engineering, manufacturing, procurement and testing of the components and system as a whole followed the concept and functional specifications of the system provided by ITER organization. Most of the components and related sub-assemblies were manufactured in India across different locations and included the involvement of several contractors/ sub-contractors/ manufacturers. The design, manufacturing and testing of the supplied components followed the stringent quality norms applicable to ITER nuclear establishment. All deliveries related to this procurement package were completed in 2021.

The equipment/ components delivered by ITER-India include cooling tower of 510 MW heat rejection capacity constructed of FRP structures with dimensions 80m (L) X 32m (W) X 20 m (H), plate type heat exchangers of capacity upto 70 MW each, water cooled chillers of 1200 TR each, pumps with flow rates upto 1.87 tonnes/sec each, electrical motors upto 1.4 MW capacity each, soft starters of 6.6 kV/ 800 kW capacity each, variable frequency drives of 6.6 kV/ 750 kW capacity each, E-house of size 21m (L) X 7m (W) X 4m (H), piping of ~16.5 km length with sizes upto 2m diameter - supplied as fabricated ~4500 spools involving one lakh inch-dia welding, 900 MT of piping supports, ozonators, 1400 nos. valves (different types and sizes), cables of ~61 km length, water polishing units, various instruments, stop log gates, bellows, pressurizers, panels, heat tracing components, etc.



Address by (L) Dr. Eisuke Tada, DG (Interim), ITER Organization (M) Dr. R. B. Grover, Head of Indian Delegation, ITER Council (R) Sh. Ujjwal Baruah, Project Director, ITER-India



Presentation of Recognition award by DG (Interim), ITER Organization

Even after the completion of supply, ITER-India continued the engagement by offering need basis support to ITER Organization in resolving site installation related issues. Finally, all the CWS equipment/components supplied by ITER-India have been successfully assembled (where required) and installed at ITER site by the contractors arranged by IO.

A 'Commit to Deliver (C2D)' event was organized by ITER Organization at ITER site on 16th June 2022 to mark the installation and completion of the supply of equipments related to the Component Cooling Water System (CCWS), Chilled Water System (CHWS) and Heat Rejection System (HRS). The meeting was chaired by Dr. Eisuke Tada, Director General (Interim), ITER Organization and attended in person and remotely by several dignitaries of the council of ITER and members of the participating nations & industries. The Indian delegation was headed by Dr. R.B. Grover. Speaking on the occasion, Dr. Grover said "This achievement is an example of successful collaborative approach, with DA supplying the equipment and IO carrying out site installation." "With the completion of major milestones of Cooling Water Systems, Cryostat, In-Wall Shielding and Cryolines Procurement Arrangements, ITER-India is in the verge of fulfilling the commitments for first plasma", he further added.

India has once again demonstrated its commitment towards ITER project through timely supply of many of the first of kind components manufactured in India under the strictest of quality norms thereby supporting ITER in its steady march towards first plasma.



(L) The installed cooling tower (R) Installed chillers and soft starters

In-House Modification in Electric Motor of Imported Rotary Vane Pump

At IPR, we have several imported rotary vacuum pumps of imported/Foreign make in different labs, and these 10-20 year old pumps years requires regular maintenance and repairing to keep them operational. Most of these pumps have issues with its electrical motor, switches, relays and starting and running capacitor, and the complex winding of motors, unavailability of spares and repairing difficulties in local Indian market, high cost of imported spares were the main factors that made these old pumps inoperable. An effort was made to refurbish these non operational vacuum pump and get them working. The electrical motor winding was modified to suit 220 VAC as well as the operation needs of the vacuum pump. After testing the motor, the vacuum pump was assembled, and tested to obtain acceptable parameters.

The cost-effective solution/modification in electrical motor reduces maintenance costs as well as makes these refurbished pumps available for use. It is to be noted that a new rotary vacuum pump costs between 2.5-3.0 Lakhs, while the refurbishing cost per pump was only 25-30k. Currently two such vacuum pumps have been refurbished and are being used in the cryogenic division, with more in the pipeline. Further work of enhancement of the features of the electrical motor, ie, incorporation of operational and tripping mechanism is are in progress. The final pressures obtained in the refurbished pump with gas ballast valve open (mbar) : 3.4×10^{-2} (Pump's manufacturer rated: 1.0×10^{-2} mbar). With gas ballast valve closed (mbar) : $<1.0 \times 10^{-3}$ (Manufacturer rated: 5.0×10^{-4} mbar). This work was carried out by SST-1 Cryogenic Division.



The rotary vacuum pump (L) before restoration (R) after restoration

संस्थान में दिनांक 5 अगस्त 2022 को “भाषा संगम ऐप : खेल-खेल में भारतीय भाषाओं को सीखने का एक ऐप” विषय पर व्याख्यान का आयोजन सेमिनार हॉल में किया गया। भाषा संगम ऐप देश के नागरिकों के लिए देश की 22 अलग-अलग भाषाएँ सीखने के लिए एक नया मोबाइल ऐप है, जिसे भारत सरकार द्वारा लॉन्च किया गया है। इस ऐप को उपयोगकर्ता निशुल्क डाउनलोड कर 22 भारतीय भाषाएँ सीख सकते हैं। इनमें असमी, बंगाली, गुजराती, हिंदी, कन्नड़, कश्मीरी, कोंकणी, मलयालम, मणिपुरी, मराठी, नेपाली, उड़िया, पंजाबी, संस्कृत, सिंधी, तमिल, तेलुगु, उर्दू, बोडो, संथाली, मैथिली और डोगरी भाषाएँ शामिल हैं। श्री अतुल गर्ग, वैज्ञानिक अधिकारी-ई ने इस विषय पर पावर पॉइंट के माध्यम से भाषा संगम ऐप की विशेषताओं पर प्रकाश डाला और विस्तृत चर्चा की। भारत के बहुभाषी, बहु-सांस्कृतिक देश होने के नाते सभी नागरिकों द्वारा विभिन्न प्रादेशिक भाषाओं को सीखना फायदेमंद हो सकता है। हमें अपनी मातृभाषा और शैक्षणिक भाषा के अलावा भारत की अन्य एक या दो भाषाओं को सीखने की इच्छा शक्ति रखनी चाहिए। श्री अतुल ने इस मोबाइल ऐप के स्क्रीन शॉट से तैयार की गई पीपीटी फाइल के माध्यम से बहुत ही सरलता से इस ऐप को इस्तेमाल करने के तरीके बताए और श्रोताओं के संदेहों को दूर किया।

सरकार के इस अभियान को बढ़ावा देने के उद्देश्य से हमारे संस्थान में ‘आओ एक भाषा सीखें’ प्रतियोगिता का आयोजन किया गया था, जिसके तहत प्रतिभागियों को भाषा संगम ऐप के जरिए हमारे देश की 22 अलग-अलग भाषाओं में से (अपनी मातृभाषा एवं शिक्षा की भाषा के अलावा) किसी एक भाषा को सीखना था। प्रत्येक प्रतिभागी ने जो भाषा सीखी, उस भाषा के आम बोल-चाल के कुछ वाक्यों को संस्थान के नोटिस बोर्ड पर पूरे एक सप्ताह तक लिखा। व्याख्यान के पश्चात् ‘आओ एक भाषा सीखें’ प्रतियोगिता में भाग लेने वाले निम्नलिखित प्रतिभागियों को डॉ. प्रवीण कुमार आत्रेय ने प्रतिभागिता पुरस्कार प्रदान किये।

प्रतिभागियों के नाम	मातृभाषा	सीखी गई भाषा
श्री रोहित अग्रवाल	हिंदी	ऊर्दू एवं गुजराती
श्रीमती सुविता कर्था	मलयालम	तमिल
श्री कनुभाई जी परमार	गुजराती	मराठी
श्री अतुल गर्ग	हिंदी	गुजराती
श्री चिराग बी भावसार	गुजराती	संस्कृत
श्री बादल खेमराज सेवक	मराठी	ऊर्दू
श्री धीरज कुमार शर्मा	हिंदी	गुजराती
डॉ. रितेश सुगंधी	हिंदी	गुजराती
श्री प्रमोद परमार	गुजराती	मराठी
श्री श्रवण कुमार	तेलुगु	कन्नड
श्री गौरव पुरवार	हिंदी	गुजराती
हेमंत हडील	गुजराती	मराठी

पुरस्कार वितरण के पश्चात् श्री राजसिंह ने श्रोतागणों को इस ऐप के माध्यम से उत्तर भारत के नागरिकों को दक्षिण भारत की कोई एक भाषा और दक्षिण भारत के नागरिकों को उत्तर भारत की कोई एक भाषा सीखने हेतु प्रेरित किया। सभी श्रोतागण इस व्याख्यान द्वारा उपलब्ध कराई गई जानकारी से लाभान्वित हुए और भविष्य में अपनी मातृभाषा के अलावा अन्य भारतीय भाषाओं को सीखने की रूचि जाहिर की।



(L) व्याख्यान देते हुए श्री अतुल गर्ग (R) श्रोताओं को संबोधित करते हुए श्री राज सिंह



प्रतिभागियों को पुरस्कार प्रदान करते हुए डॉ. प्रवीण कुमार आत्रेय

Congratulations !



Mr. Ankit Gandhi received a Consolation Prize award for his presentation entitled “Optimization of Circulation Power in First Wall of Breeding Blanket using He-CO₂ Gas Mixture as a Replacement of Helium” at the 8th International Conference on Advances in Energy Research (ICAER), which was held at the Indian Institute of Technology Bombay, Mumbai, during 7-9 July 2022.

As part of the AKAM celebrations, IPR has been conducting a series of scientific outreach activities in rural schools of different districts of Gujarat. The fourth such event was conducted during 11-13 July, 2022 at the **Seth Khemji Ramdas Kanya Vidyalaya, Mandvi**. This is a Gujarati medium girls' school with over 600 students studying in classes 1-12.

The 3-day event consisted of popular talks on plasma and its applications and exhibition of over 15 working models. Over 400 students and teachers from this school as well as nearby schools and general public visited the exhibition. Principals of schools in Mandvi and Bhuj also visited the exhibition and explored the possibilities of having similar events at various schools in the region in the near future. Students of class 10 & 11 from the host school were trained to explain the exhibits to the visitors.

As part of the event, the Gujarati version of the children's comic book on plasma "The Wonderful World of Plasma" was also distributed to all the visiting students and teachers. Students from the school were trained to explain the exhibits to visitors. A set of 10 posters on plasma and a popular book on plasma "Living with Plasma" were also distributed to the visiting schools for display in their school's library. IPR Outreach proposes to conduct such events in rural schools of Bhavnagar and Porbandar Districts of Gujarat in the coming months. For more details click [HERE](#).



Inauguration of the event



Introducing plasma to students



The plasma exhibition

Seven newly selected IPR Trainee Officers (ITSO) of the 2022 batch visited IPR on 10th August 2022. In their induction programme, Director IPR welcomed them, gave a brief presentation about IPR and its activities and also interacted with them. The ITSO's then visited the Outreach exhibition and other laboratories at IPR and FCIPT before returning to BARC training school in Mumbai for the 1 year training programme.



Director IPR interacting with the ITSOs



Under the auspices of “Azadi Ka Amrut Mahotsav”, The National Exhibition & Seminar on Plasma Physics (NESPP-2022) was organized by CPP-IPR and IPR in association with the University Of Science & Technology, Meghalaya (USTM) during 1-5 August, 2022 at the USTM campus at Baridua, Meghalaya. The Outreach team of IPR transported over 20 working and non-working models, posters, comic book on plasma etc. to Meghalaya to set up this exhibition on plasma, which is unique in the sense that it is for the first time that such an exhibition was being held in the North Eastern part of the country.

The event was inaugurated by the Honorable Education Minister of Meghalaya, Shri. Lakhmen Rymbui, who also inaugurated the CPP-IPR exhibition on plasma and its applications. The Minister spent a considerable amount of time at the exhibition with the various exhibits on plasma and its applications. He was also eager to know more details about the Plasma Pyrolysis system for waste management.

During the event, a popular talk on Plasma was also delivered by Dr. Ravi Kumar (Head Outreach Division, IPR) to the students of USTM on 2nd August, 2022. Over the 5 days, more than 1000 students from USTM as well as over 800 students and teachers from various schools in Guwahati as well as rural areas in the state of Assam visited the exhibition.

PhD Scholars from CPP-IPR as well as MSc Physics students from USTM who were trained by experts from IPR and CPP-IPR explained the exhibits to the visitors.

The Honorable Health & Forest Minister of Meghalaya, Shri. James K. P. Sangma presided over the concluding session of the event. He also visited the exhibition and interacted with the students. Click [HERE](#) for detailed report.



(L) The inauguration of the event (M) The H'ble Minister for Education, Meghalaya, (R) Prof. B. K. Saikia, Center Director, CPP-IPR addressing the gathering



(L) The inauguration of the plasma exhibition by Shri. Lakhmen Rymbui, Hon'ble Education Minister, Meghalaya





Images from the Plasma Exhibition at USTM



The Honorable Health & Forest Minister of Meghalaya, Shri. James K. P. Sangma during the concluding session and his visit to the IPR Plasma exhibition



PhD scholars of CPP-IPR and student volunteers of USTM with IPR Team at the Plasma Exhibition at USTM.

The IPR Staff Club organized a superannuation function for Dr. Amit Sircar, Shri. Bharat Doshi, Ms. Ranjana Manchanda and Shri Kanubhai Rathod at the IPR Seminar Hall on 26th July, 2022. Over 100 staff members participated in this function including their team members and family members. Dr. Ritesh Sugandhi presented important contributions and achievements of the retiring colleagues. Dr. Subroto Mukherji (Dean Administration, IPR) presented a felicitation gift to the colleagues as a token of appreciation on behalf of the Institute. Dr. Praveen Kumar Atrey, Dr. Anitha V P, Shri Vijay Bedakhale, Shri Niranjana Vaishnav, Shri Raj Singh and other staff colleagues shared their experiences, memories and contributions of the superannuating colleagues and conveyed best wishes for their happy and healthy retirement life.

Dr. Amit Sircar has largely contributed towards initial ADITYA tokamak operation and TBM Fuel cycle related activities. Shri. Bharat Doshi made significant contributions in mechanical design, analysis and fabrication activities for various systems (tokamak scale as well as experimental lab-scale) related activities at IPR, ITER-INDIA and ITER IO. Ms. Ranjana Manchanda has contributed largely to the Plasma Diagnostics activities for ADITYA and SST-1 Tokamak. Shri Kanubhai Rathod has contributed in mechanical drafting related work for various sub-systems of ADITYA and SST-1 tokamaks.

The Executive Staff Committee also presented them a booklet of the collected messages (in softcopy). The Superannuation function was coordinated by Shri Harish Chandra Khanduri along with Shri Rajnikant Bhatsana and Shri Gaurav Purwar.



Dr. S. Mukherji presenting felicitation gift to (L-R) Dr. Amit Sircar, Shri. Bharat Doshi, Smt. Ranjana Manchanda and Shri Kanubhai Rathod



(L-R) Shri Kanubhai Rathod along with wife, Dr. S. Mukherji, Smt. Ranjana Manchanda, Dr. Amit Sircar, Shri. Bharat Doshi along with wife, Dr. P.K. Atrey, Dr. Anitha V.P. and Dr. Pramod Sharma.



Staff members attending the superannuation function

The Staff Executive Committee organized indoor sports tournaments - *Table Tennis* (Singles and Doubles), *Carrom* (Singles and Doubles) and *Chess* during the July & August this year for IPR staff members. Over 130 staff members registered for various sports activities. 18 teams participated in the Carrom doubles tournament and the final match was played on 16th Aug, 2022 at IPR Canteen Annex. This sports event was coordinated by Shri Hitesh Kawad, Shri Rajnikant Bhatsana and Shri Vijay Vasava (Sports Secretary, Staff club).

Winning Team	Vipul More	&	Ravinder Kumar
Runner-up Team	Piyush Raj	&	Shrish Raj
Semi-Final Team 1	Kiran Kumar Ambulkar	&	Kanubhai Parmar
Semi-Final Team 2	Mayur Patel	&	Santosh Naik



(L) Carrom Doubles results (R) The finalists (Seated, L-R) Ravinder Kumar, Piyush Raj, Shirsh Raj and Vipul More



The two semi finals of the Carrom Doubles tournament being played at the IPR canteen.

76th Independence Day Celebrations @ IPR



- ◆ **Dr. Braj Kishore Shukla**, gave a talk on "*ECRH experiments on Tokamaks SST-1 & Aditya-U and ECRH upgradation plan for SST-1*" at 21st Joint workshop on Electron Cyclotron Emission (ECE) and Electron Cyclotron Resonance Heating (ECRH), ITER France, 20-24 June 2022
- ◆ **Dr. Sudhir Kumar Nema**, gave a talk on "*Plasma based Technologies for Healthcare & Medical Applications*" at Institute of Pharmacy and Institute of Science, Nirma University, Ahmedabad, 4th July 2022
- ◆ **Mr. Rameshkumar Joshi**, gave a talk on "*Conceptual Design and Preliminary Data Analysis for Classification of Plasma Disruption Event at Aditya-U Tokamak*" at Malaviya National Institute of Technology Jaipur, 06th July 2022
- ◆ **Mr. Jaydeep Joshi**, gave an invited talk on "*Dissimilar Material Welding for Nuclear Fusion Application-Challenges, Experience and the way forward*" at DAE-BRNS Theme Meeting on Advance Technologies in Dissimilar Metal Welding (DMW-2022) and DAE Technology Awareness Meet-II, Anushakti Nagar, Mumbai, 15-16 July 2022
- ◆ **Dr. Sudhir Kumar Nema**, gave a talk on "*Current status of plasma-assisted disposal of hazardous and infectious wastes and future opportunities*" at Indo-German Centre for Sustainability (IGCS), IIT Madras, 22nd July 2022
- ◆ **Dr. Surojit Gupta**, Department of Mechanical Engineering, University of North Dakota, gave a talk on "*On the synthesis and characterization of novel composites for multifunctional applications*" on 25th July 2022 (**Colloquium #315**)
- ◆ **Mr. Amit Ojha**, gave a talk on "*Power Source with integrated quench protection system for large superconducting magnet*" on 27th July 2022
- ◆ **Mr. Vikas Rathore**, gave a talk on "*Plasma Activation of Water and Medium and their Study*" on 05th August 2022
- ◆ **Dr. Mahesh Saini**, gave a talk on "*A novel approach for improving SERS-based molecular detection efficiency*" on 23rd August 2022

Upcoming Events

- ◆ 13th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Operation and Safety (NUTHOS-13), Taichung, Taiwan, 4-9 September 2022; <http://www.nuthos-13.org/>
- ◆ 27th IFHTSE Congress & European Conference on Heat Treatment, Austria, 5-8 September 2022; <https://www.ifhtse-echt2022.org/>
- ◆ Karlsruhe International School on Fusion Technologies, Karlsruhe, Germany, 5-9 September 2022; <https://summerschool.fusion.kit.edu/index.php>
- ◆ 31st Summer School and International Symposium on the Physics of Ionized Gases (SPIG 2022), Belgrade, 5-9 September 2022; <http://www.spig2022.ipb.ac.rs/>
- ◆ International Conference on Occupational Radiation Protection – Strengthening Radiation Protection of Workers – 20 Years of Progress and the Way Forward, Geneva, Switzerland, 5 - 9 September 2022; https://www.oecd-nea.org/jcms/pl_61907/
- ◆ World Nuclear Association Symposium 2022, London, 7-9 September 2022; <https://www.wna-symposium.org/>
- ◆ 22nd International Vacuum Congress (IVC-22), Japan, 11-16 September 2022; <https://ivc22.org/index.html>
- ◆ 6th International Workshop on Structural Materials for Innovative Nuclear Systems (SMINS-6), Idaho National Laboratory, US, 12 -15 September 2022; https://www.oecd-nea.org/jcms/pl_63415/sixth-international-workshop-on-structural-materials-for-innovative-nuclear-systems-smins-6
- ◆ Theory of Fusion Plasmas, Italy, 12-16 September 2022; <http://varenna-lausanne.epfl.ch/>
- ◆ IPP Summer University for Plasma Physics and Fusion Research, Greifswald, Germany, 12-16 September 2022; <https://www.ipp.mpg.de/summeruni>
- ◆ Small and Advanced Reactors 2022, (virtual event), 13 September 2022; <https://pmi-live.com/events/small-and-advanced-reactors2022/>
- ◆ 15th International Workshop on Beryllium Technology, Karlsruhe, Germany, 14-15 September 2022; <https://www.fusion-for-future.de/beyond/>
- ◆ 9th Industrial Forum on Beryllium Opportunities & New Developments, Karlsruhe, Germany, 16 September 2022; <https://www.fusion-for-future.de/beyond/>
- ◆ European Conference on Optical Communication (ECOC) & CLEO/Europe Focus Meeting, Switzerland, 18-22 September 2022; <https://www.ecoc.info>
- ◆ 32nd Symposium on Fusion Technology, Dubrovnik, Croatia, 18-23 September 2022; <https://soft2022.eu/>
- ◆ International Symposium on Contribution of Materials Investigations and Operating Experience to LWRs' Safety, Performance and Reliability, France, 19-21 September 2022; <https://new.sfen.org/evenement/fontevraud-10/>
- ◆ 15th workshop on Shielding aspects of Accelerators, Targets, and Irradiation Facilities (SATIF-15), Michigan State University, USA, 20-23 September 2022; https://www.oecd-nea.org/jcms/pl_61651/
- ◆ National Conference on Recent Developments and Evolving Trends In Plasma Science and Technology & Pre-Conference Workshop on Modelling and Simulation of Industrial Plasmas at Bharathiar University, 22-24 September 2022; <https://b-u.ac.in/268/national-conference-recent-developments-and-evolving-trends-plasma-science-and-technology-pre>
- ◆ Advances in Quantum Transport in Low Dimensional Systems, London, 26-27 September 2022; <https://www.iop.org/events/advances-quantum-transport-low-dimensional-systems>
- ◆ 66th Session of the IAEA General Conference, Vienna, Austria, 26-30 September 2022; <https://www.iaea.org/events/evt2101241>
- ◆ International Power Summit 2022, Munich, Germany, 27-28 September 2022; <https://www.arena-international.com/ips>

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Know Your Colleague



Mr. Mitul R Abhangi joined IPR as a Scientific Assistant-B in March, 2009 and is presently working as Scientific Assistant-D in Neutron & Ion Irradiation Section (NIIS). He acquired Master of Science in Physics from Annamalai University, Chidambaram in 2015. He has acquired training and certificate for radiation safety from BARC. He was the designated Radiological Safety Officer (RSO) during 2013 to 2018. He is also one of the team members of IPR Radiation Emergency Response Centre (RERC) which provides technical supports in case of radiological emergencies in public domain. He was deputed to CCFE, UK in 2013 where he participated and contributed in Joint European Torus (JET) neutron detectors calibration campaign. His areas of expertise includes radiation safety, neutron transport simulation, radiation detection and nuclear instrumentation. He is actively involved in development of accelerator based 14-MeV neutron generator facility at IPR.

Academic visit to IPR



Students and teachers from National Forensic Science University, Gandhinagar during their visit to FC IPT on 21 July 2022.

The IPR Newsletter Team

Ritesh Srivastava	Tejas Parekh	Ravi A. V. Kumar	Priyanka Patel	Dharmesh P	Mohandas K.K.	Supriya R
Suryakant Gupta	Ramasubramanian N.	Chhaya Chavda	Shravan Kumar	B. J. Saikia	Harsha Machchhar	

Institute for Plasma Research
Bhat, Near Indira Bridge
Gandhinagar 382 428,
Gujarat (India)



Web : www.ipr.res.in
E-mail : newsletter@ipr.res.in
Tel : 91-79-2396 2000
Fax : 91-79-2396 2277