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The Fourth State

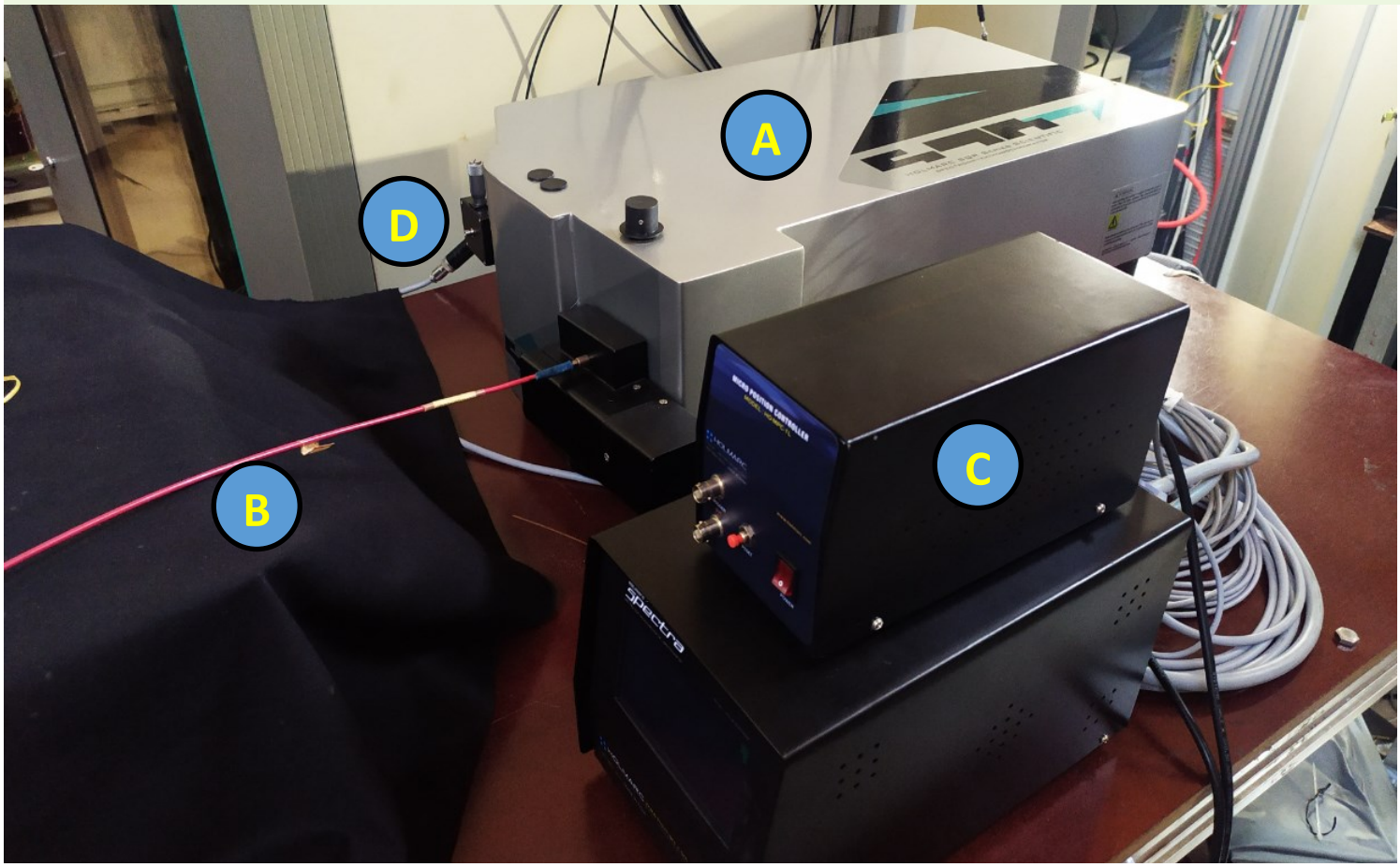
Newsletter of the Institute For Plasma Research, Gandhinagar, Gujarat (India)

'Made In India' Visible Spectrometer For ADITYA-U Tokamak

Spectroscopy diagnostics fall under the basic diagnostic requirements in any tokamak or in any linear plasma device. Monitoring the visible spectrum radiated from tokamak plasmas is absolutely required to detect the unwanted impurity entering into the plasma and also to understand the health of plasma facing components. This is normally done using the visible spectrometers coupled with either linear array or 2D shaped charge coupled device (CCD). Till date, such spectrometers used for plasma diagnostics have all been foreign brands. For the very first time, a 0.5 m visible spectrometer, made in India by a Kochi based optical component manufacturing company based in collaboration with IPR has been procured and installed on ADITYA-U tokamak to monitor the visible emissions.

The spectrometer has three gratings with groove densities of 300, 600 and 1200 grooves/mm and the detector is a linear CCD array. The reciprocal linear dispersion of the spectrometer is 1.47 nm/mm with 1220 grooves/mm grating. The spectrometer supplied with software, having all required features for spectrometer setting and control and also spectrum acquiring capabilities with exposure time setting and background correction. Not only that, the detector is placed on a computer controlled opto-mechnical platform for easy movement and alignment, if and when required. The spectrometer is now in regular operation and is acquiring data during ADITYA-U plasma discharge. A 12 m long optical fibre with 1 mm core diameter is coupled with spectrometer's entrance slit to feed the light into the spectrometer. The spectrum acquired from the ADITYA tokamak is shown in figure 2 and the identified spectra lines are H_a, H_b, and spectral lines at 441.5 from O^{1+}, 464.7 nm from C^{2+} and 650 nm from O^{4+} ions. These are analysed for investigating impurity behaviour in the edge plasma region.

The performance of this spectrometer is comparable to the results obtained by foreign brands. This development is an important step towards "*Aatmanirbhar Bharat"* in this area of plasma diagnostics.



(A) The 0.5m visible spectrometer installed at IPR (B) Optical fiber (C) Control electronics (D) Detector

IPR Review - Round 1: Societal Applications, Outreach and NFP

IPR is organizing a review of its scientific/technical activities. The first step in this process was a review of Societal Applications of Plasmas, IPR Outreach and NFP/BRFST/BRNS activities that was held at IPR during 10-11 Nov, 2022.

The five member committee consisting of Dr. A. K. Ray (Ex-BARC) (Chairman), Dr. A. K. Das (Ex-BARC and Vice-Chairperson, Odisha State Higher Education Council), Dr. Praveer Asthana (Head, INSPIRE and Mega Science Divisions, DST), Shri R. Ravishankar (Ex-Head, PAD, DAE) and Prof. Rajiv O. Dusane (IIT Mumbai) reviewed the work undertaken by FCIPT and other divisions of IPR carrying out work on applications of plasma in various areas of industry, aerospace, medicine, textiles, agriculture etc.

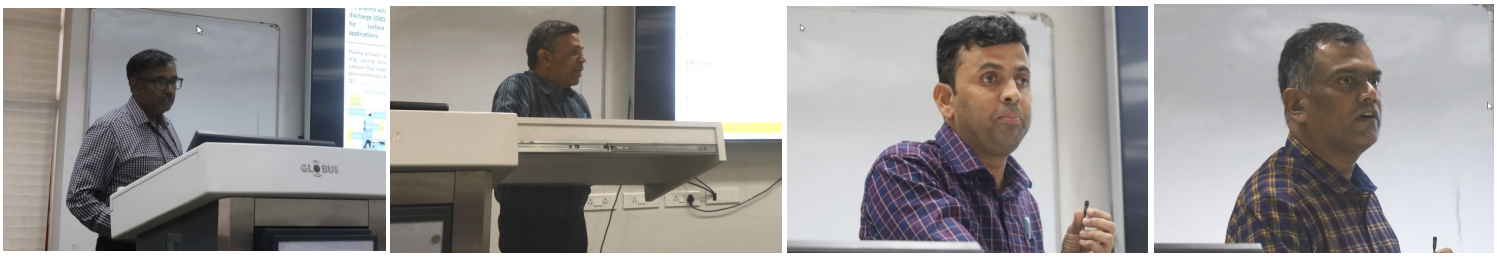
While Dr. Subroto Mukherjee outlined the review process, Dr. Shashank Chaturvedi introduced IPR's activities to the committee. For the review process, Dr. Sudhir Kumar Nema first gave an outline of the activities of FCIPT, which was then followed by brief presentations. The committee then visited the Outreach exhibition hall and lecture hall facility set up at IPR for the benefit of visitors to IPR. On 11th November, the committee visited FCIPT to continue the review of the facility and the experiments being conducted there.

Plasma pyrolysis and allied activity	Dr. Sudhir Kumar Nema
Social and health sector	Dr. Mukesh Ranjan
Artificial Intelligence	Mrs. Manika Sharma
Surface activation and coating activity	Dr. Alphonsa Joseph
Space sector	Dr. Suryakant Gupta

Aerospace sector	Mr. Rajanbabu N
Nano and Textile activity	Dr. C. Balasubramanian
Agriculture sector	Dr. Ramakrishna Rane
National Fusion Program / BRFST/PFRC	Dr. A. V. Ravi Kumar
IPR Outreach	Dr. A. V. Ravi Kumar

Dr. Shashank Chaturvedi introducing the activities of IPR to the review committee

(L-R) Dr. Sudhir Kumar Nema, Dr. Mukesh Ranjan, Mrs. Manika Sharma, Dr. Alphonsa Joseph, Dr. Suryakant Gupta



(L-R) Mr. Rajanbabu N, Dr. C. Balasubramanian, Dr. Ramakrishna Rane and Dr. A. V. Ravi Kumar

IPR Review - Visit to Outreach Exhibition Hall



(L-R) Dr. P. Asthana, Shri R. Ravishankar, Prof. R. O. Dusane, Dr. A. K. Ray and Dr. A. K. Das during the presentations








The review team with the members of the Outreach Division

IPR Review - Visit to FCIPT












The review team with the IPR staff members.

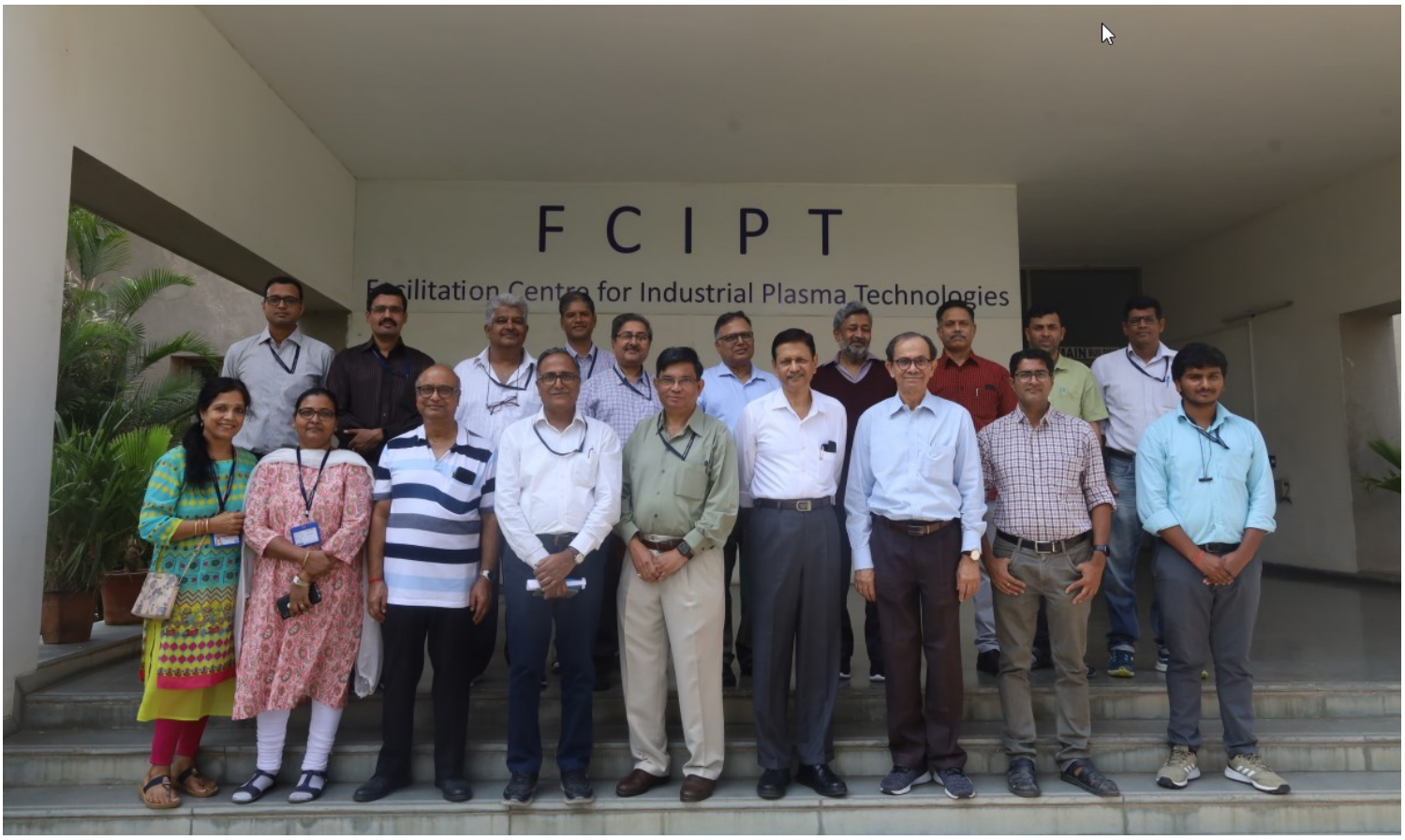
IPR Review - Visit to FCIPT









The review team at FCIPT

IPR Rural Scientific Outreach Programme - Sirohi

Under the auspices of "Azadi Ka Amrut Mahotsav", IPR participated in the exhibition "**Vision Rajasthan-2022**" which was organized at the Mahatma Gandhi School, Sirohi, Rajasthan during 1-3 November, 2022. Several Departments of the Government of India participated in this 3-day exhibition.

The programme was organized by Friendz Exhibitions & Promotion Pvt. Ltd. (New Delhi) as part of the "Aspirational District Programme Initiative of the Hon'ble Prime Minister of India", at Sirohi as Sirohi is one of the Aspirational Districts listed under the Niti Aayog.

As part of this exhibition, IPR participated under the banner of DAE and exhibited several working models of plasma, its applications as well as tokamaks.

Over 5000 students and general public from Sirohi and neighboring districts visited the IPR stall in this exhibition.

The IPR stall also received the award for the "**Stall With The Best Exhibits**" from Shri Devji Patel, (MP, Jalore-Sirohi), who earlier visited the IPR stall and interacted with the IPR staff. Details can be seen **HERE**.

Shri Devji Patel, MP, Jalore-Sirohi visiting the IPR stall.

Performance Test of ANU-400 Turbomolecular Pump

ANU TURBO-400, a multi-staged 5-axes magnetically suspended Turbomolecular Pump (TMP) is indigenously developed by Control System Development (CSD) Division, BARC. One of the prototype TMP was provided to IPR for its performance test which was carried out by Vacuum Engineering and Services Division (VESD). Senior Scientific officials from BARC, Shri Pradip H Chavda (SO-H) and Shri A K Wankhede (OS), visited IPR on 04th November 2022. A presentation titled "ANU TURBO-400, Technology briefing, User's trials and test details at BTDG Mumbai & RRCAT" was delivered by Shri P H Chavda. The results of the tests carried out at IPR and suggestions for further improvement in the pump performance was also presented by Dr. Ziauddin Khan.

Some basic features of this pump are (1) It has 8-stages having maximum rotational speed of 24000 RPM, (2) An ultimate pressure of 1.0 ´ 10^{-6} mbar was achieved after 4 hrs of baking at 120 °C followed with 48 hrs of pumping, (3) Nominal pumping speeds measured are 275 l/s (Nitrogen), 200 l/s (Argon), 100 l/s (Helium) and 50 l/s (Hydrogen), (4) It could tolerate a maximum throughput of 0.13 mbar l/s for Nitrogen and 0.11 mbar l/s for Argon, (5) It could operate at a maximum fore-line pressure of 0.15 mbar (Nitrogen) and (6) It is under uninterrupted running condition for more than 1000 hrs.

(L) ANU TURBO-400 with its controller (R) From (L-R): Kalpesh Dhanani, Pratibha Jakhmola, P H Chavda (BARC), A K Wankhede (BARC), Ziauddin Khan and Dilip C Raval.

तकनीक के साथ, विज्ञान की बात

हिंदी वक्तव्य श्रृंखला "तकनीक के साथ, विज्ञान की बात" के अंतर्गत दिनांक 10 अक्टूबर 2022 को पाँचवा व्याख्यान संस्थान के सेमिनार हॉल में आयोजित किया गया। श्री शिवम कुमार गुप्ता, वैज्ञानिक अधिकारी-डी ने "विश्व भर के विभिन्न टोकामॅको में सेंट्रल सोलेनोइड पावर सप्लाई का संचालन" (Operation of Central Solenoid Power Supply for different Tokamaks all over the world) विषय पर व्याख्यान दिया और इससे संबंधित कई महत्वपूर्ण जानकारियों को साझा किया। व्याख्यान के बाद इस विषय पर विस्तार से चर्चा की गई और उन्होंने श्रोताओं के संदेहों को दूर किया। अंत में सेमिनार हॉल में उपस्थित श्रोताओं के लिए इस पर विषय पर आधारित प्रश्नोत्तरी प्रतियोगिता आयोजित की गई और विजताओं को पुरस्कार प्रदान किये गये।

(L) व्याख्यान देते हुए श्री शिवम कुमार गुप्ता (R) श्री राजसिंह द्वारा भेंट प्राप्त करते हुए श्री शिवम कुमार गुप्ता

Academic Visits to IPR

12-Nov- 2022	Shree Narayana Higher Secondary School, Kathwada	36 students of 11th std and 3 teachers

Students of Shree Narayana Higher Secondary School, Kathwada, Ahmedabad, during their visit to IPR

IPR Outreach Exhibition Hall

For the benefit of students visiting IPR, Outreach Division has set up a lecture-cum-exhibition hall. Located in the 1st floor of the new laboratory building, this hall has a seating capacity of 100 for lectures and also has more than 20 working and static exhibits related to plasma, its applications as well as nuclear fusion. IPR staff are also encouraged to visit the Outreach exhibition.

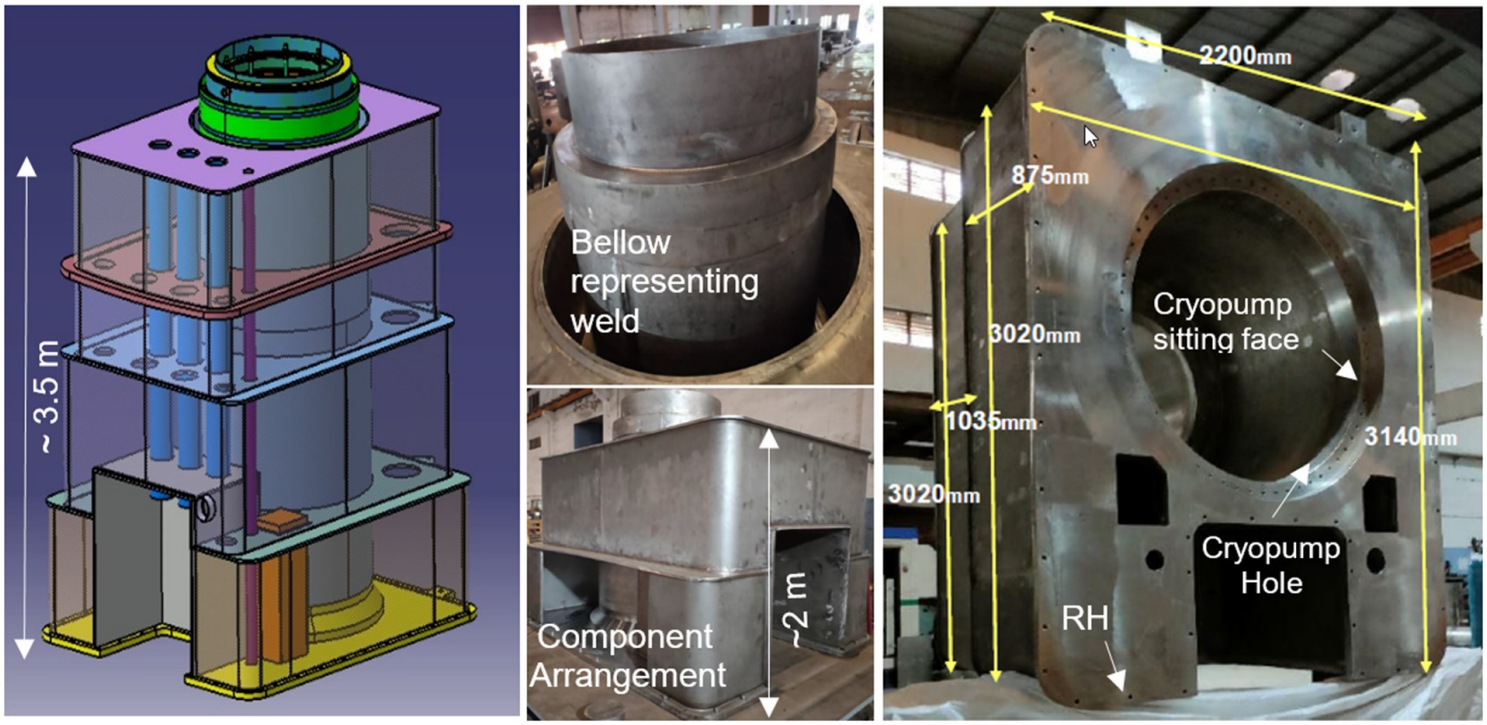
360 images of the Outreach Lecture-cum-Exhibition hall. Please click on the photos to view the 360 degree images.

ITER Torus Cryo-Pump Housing (TCPH) Mock-Up Realization

The ITER Torus Cryo-Pump Housing (TCPH) is a penetration located on the Cryostat lower cylinder with main functions to accommodate and support the Torus Cryo-Pump (TCP), connect it to the Vacuum Vessel and provide tritium confinement. The ITER Torus Cryo-Pump Housing (TCPH), thus forms a primary vacuum boundary, which is to be manufactured from SS304/304L material using ASME Sec-VIII Div.2 with supplementary requirement of ITER Vacuum Handbook for cleaning and leak testing. The manufacturing contract for TCPH and associated bellows (6 Nos.) has been placed with M/s Vacuum Technique Pvt Ltd. Bangalore. It may be noted that TCPH is part of the INDA scope of supply under cryostat procurement arrangement with ITER Organization.

TCPH Basic arrangement consist of inner cylinder to support cryopump and tritium confinement whereas the outer rectangular box structure provides re-generation volume for TCP. They are interconnected through vertical ribs for providing stiffness and transferring load of cryopump to the Cryostat. The mock-up for TCPH is half of the length to ensure the critical requirements are built in before going to the actual production.

The critical aspects of TCPH Mock-up validation includes but not limited to are : 1) Welding and NDE validation for production that ensures weld configuration with 100% volumetric inspectability on full penetration weld joints using GTAW welding process 2) Assembly sequence to ensure required access suitable for manufacturing including validation of welding shrinkages that controls the distortion during the production 3) Achievement of critical functional tolerances (For the flange & cylinder with consideration of interfacing components includes Flatness of cryopump flange sitting face machining achieved within 0.12 mm , cryopump bolting hole positions within 0.3-0.8 mm also dowel positions achieved in the range of 2.0-2.4 mm that minimized the possible risk during actual production and help in finalizing better machining option as performing machining activity at final stage. Finally, 4) Mock-up have been cleaned through pressurized steam cleaning process resulted in good vacuum and subsequent during the leak test leak rate observed to be acceptable in the range of 1.6 x 10-8 mbar l/s. The result of the Mock-up completion has been successfully implemented for production of TCPH components along with improvement measures learned. Currently TCPH (3 Nos.) are in assembly stage after component manufacturing.



(L) TCPH Production assembly (R) TCPH Mockup configuration

Past Events @ IPR

- ***Mr. Pratik Patel,*** gave an invited talk on “Basics of Fusion energy and use of Cryogenics system in ITER project” at Shri Labhubhai Trivedi Institute of Engineering & Technology (SLTIET), Rajkot, on 21st September 2022
- ***Mr. Kaushal Pandya,*** gave a talk on “Source performance optimization in Cesiated mode in ROBIN” at 8th International Symposium on Negative Ions, Beams and Sources 2022, Padova, Italy, 2-7th October 2022
- ***Talks presented at 75th Annual Gaseous Electronics Conference (GEC 2022), Sendai, Japan, 3-7th October 2022***
  - ***Mr. Ram Krushna Mohanta,*** gave a talk on "Investigation of the electro-thermal dynamics of a low pressure DC plasma spray torch"
  - ***Mr. Vivek Pachchigar,*** gave a talk on "Ar plasma nanostructuring of PTFE for the wettability transition from hydrophobic to superhydrophobic and hydrophilic surfaces"
  - ***Dr. Sarveshwar Sharma,*** gave a talk on "Investigating the plasma dynamics of capacitive discharges driven by pulsed radio-frequency (RF) at low pressure using particle-in-cell simulation"
  - ***Mr. Pawandeep Singh,*** gave a talk on "The performance of the pulse bias hairpin resonator probe for negative ion diagnostic”
- ***Talks presented at 6th Asia-Pacific online Conference on Plasma Physics (AAPPS-DPP2022), Division of Plasma Physics, Association of Asia-Pacific Physical Societies, 9-14th October 2022***
  - **Dr. Sarveshwar Sharma**, gave an invited talk on “Investigating the effects of electron bounce-cyclotron resonance on plasma dynamics in capacitive discharges operated in the presence of a weak transverse magnetic field"
  - Mr. Tulchhi Ram, gave a talk on "ECR plasma characteristics in a tight aspect ratio device with varying toroidal magnetic field"

- ***Mr. Ankit Dhaka,*** gave a talk on "Hydrodynamic matrix for Yukawa Fluids in the Generalized Hydrodynamics Framework"
- ***Ms. Arzoo Malwal,*** gave a talk on “Implementation of 3D Monte-Carlo simulations in the inboard limited Aditya-U scrape off layer plasma”
- ***Mr. Ayan Adhikari,*** gave a talk on “Excitation of plasma turbulence in cross field diffused plasma of LVPD-U”

♦ ***Prof. Shishir Deshpande,*** gave an invited talk on "Nuclear Fusion: Indian Program, ITER Project & Beyond", at PRL ka Amrut Vyakhyaan, as a part of PRL 75 Years Celebrations, 12th October 2022

♦ ***Ms. Bhoomi S. Gajjar,*** gave a talk on "Thermophysical properties and characterization study of Boron Carbide (B4C) Ceramics developed for ITER" at 42nd Meeting of the ITPA Topical Group on Diagnostics, ITER Organization, 10-13th October 2022

♦ ***Mr. ManoahStephen M,*** gave a talk on "Passive gravity compensation of serial link manipulators for Remote Handling application" at 6th International Conference on Multibody System Dynamics, Indian Institute of Technology, Delhi, 16-20th October 2022

♦ ***Talks presented at 64th Annual Meeting of the APS Division of Plasma Physics, Spokane, Washington, 17-21st October 2022***

- ***Dr. Sarveshwar Sharma,*** gave a talk on “Particle-in-cell simulation of electron and ion dynamics in low pressure capacitively coupled plasma discharges operated by pulsed radio-frequency (RF)"
- ***Mr. Pawandeep Singh,*** gave a talk on “The effect of sheath dielectric on the inferred plasma parameters of a DC biased hairpin resonator probe”

♦ ***Dr. S. K. Nema,*** gave a keynote address on the topic "Advance Plasma Based Technologies for Solving Environmental Issues" at National Seminar on Current Trends in Environment Sciences: Issues and Challenges, National Forensic Sciences University, Gandhinagar, on 19th October 2022

♦ ***Talks presented at 28th National Symposium on Cryogenics and Superconductivity (NSCS-28), IIT Kharagpur, 19-21st October 2022***

- ***Mr. Pratik M Patel,*** gave an invited talk on “Indian contributions and achievement in cryogenics systems of the ITER project”
- ***Mr. Upendra Prasad,*** gave an invited talk on “The Development of Superconducting Magnet Technology for Tokamak Magnets: R&D update and plan”
- ***Mr. Ananta Kumar Sahu,*** gave an invited talk on “Development of Indigenous Helium Refrigerator Plant at IPR: Present Status”
- ***Mr. V.B. Patel,*** gave a talk on "PHASE-I Design of Data Acquisition and Control System of Large Scale Cryogenics Plant System"
- ***Mr. Rameshkumar Joshi,*** gave a talk on "Conceptual design of open source IoT based software solution for Cryogenic experiments"
- ***Mr. Nitin Bairagi,*** gave a talk on "Design and Development of a Prototype Superconducting MgB2 Cable for Current Feeders Application"
- ***Mr. Nitin Shah,*** gave a talk on “Design and manufacturing of ITER cryolines and warmlines: an Indian contribution”
- ***Dr. Abhinav B. Desai,*** gave talks on "Design and Performance Analysis of regenerators in cryocooler: A Review and study on the selection of methods” and "Development of prototype pulse-tube refrigerator for typical cryopumps used in fusion devices”
- ***Mr. Vinit Shukla,*** gave a talk on “Development of a customized unit operation and validation using experimental data”
- ***Mr. Mahesh Ghate,*** gave a talks on “Effect of the Geometrical Configuration of Flexible Cryostat on the Hydraulic Characteristic of Cryogenic GHe towards High-Temperature Superconducting Applications” and “Development and Validation of Room Temperature Bore Cryostat for Testing of HTS Solenoid Magnet up to 55 K”
- ***Mr. Haresh J. Dave,*** gave a talk on “Up gradation of IPR indigenous helium refrigerator plant to liquefier and test results"
- ***Ms. N. Patel,*** gave a talk on “Process analysis and helium flow optimization for cold components of indigenous helium refrigerator plant of IPR"
- ***Mr. Ananta Kumar Sahu,*** gave a talks on “Experimental Set-up and Measurement of Isentropic Efficiency of Cryogenic Helium Turbines" and “Design Optimization of Heat Exchanger of Helium Refrigerator Plant Considering LN_2 Consumption"
- ***Mr. Atul Garg,*** gave a talk on “Up-gradation of Current Feeder System for Superconducting PF3 Coils in SST-1”

♦ ***Dr. Nirmal Kumar Bisai,*** gave a talk on “On the modification of edge turbulence by impurity seeding” at 32nd ITPA DivSOL TG meeting, Cadarache, France, 24-28th October 2022

♦ ***Mr. Arnab Jyoti Deka,*** gave a talk on “Design, Development and Characterization of Doppler Shifted Spectroscopic Diagnostic system for negative hydrogen ion beam in fusion application" on 27th October 2022

♦ ***Dr. Margi Jani,*** Pandit Deendayal Energy University, Gandhinagar, gave a talk on “Optimizing thin-film based buffer layer and transparent conducting oxides performance for device applications" on 28th October 2022

♦ ***Mr. Satadal Das,*** gave a talk on “Studies on external electrode influence on magnetized plasma properties in linear device" on 31st October 2022

♦ ***Ms. Devshree Mandal,*** gave a talk on “Some studies on Interaction of laser with overdense plasma" on 4th November 2022

♦ ***Dr. Rohit Kumar Saini,*** gave a talk on “Design of a Microwave Cavity perturbation Based System for Solid Hydrogen Pellet Mass Measurement" on 14th November 2022

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Upcoming Events

- DAE-BRNS National Laser Symposium (NLS-31), Indian Institute of Technology Kharagpur, 3-6 Dec 2022; https://ila.org.in/nls31/
- International e-Symposium on Plasma for Energy (ISPE), SRM Institute of Science and Technology (SRMIST), Kattankulathur, 5-6 December 2022; https://www.srmist.edu.in/events/ispe2022/
- Conference on High Intensity Laser and Attosecond science in Israel, Israel, 5-7 December 2022; http://tailus.tau.ac.il/chili2022/
- 23rd International Conference on Cyclotrons and Their Applications (CYC2022), Beijing, China, 5-9 December, 2022; https://www.cyc2022.cn/event/1/
- International Forum on Superconductivity and Magnetism (IFASM Oceania 2022), Australia, 6-8 December 2022; https://ifasmoceania.org/
- Physics Enhancing Machine Learning in Applied Solid Mechanics, Institute of Physics, London, 12 December 2022; https://www.iop.org/events/physics-enhancing-machine-learning-applied-solid-mechanics
- IOP Magnetism Winter School, Abingdon, 12-13 December 2022; https://www.iop.org/events/iop-magnetism-winter-school
- 37th National Symposium on Plasma Science & Technology (PLASMA-2022): Plasma Technologies for Sustainable Development, IIT Jodhpur, 12-14 December 2022; https://iitj.ac.in/plasma2022/
- 7th International Symposium on Liquid Metals Applications for Fusion (ISLA-7), Japan, 12-16 December 2022; https://symposium-chubu-isla-7.net/
- 3rd Fusion High Performance Computing (HPC) Workshop, Virtual, 15-16 December 2022; https://hpcfusion.bsc.es/
- 24th UK Meeting on Integrable Models and Conformal Field Theory, Department of Mathematical Sciences (ICFT2022), Durham University, Durham, 16-17 December 2022; https://www.iop.org/events/icft2022-24th-uk-meeting-integrable-models-and-conformal-field-theory
- National Conference on Recent Trends in Materials Science and Technology (NCMST-2022), IIST Campus, Thiruvananthapuram, 28-30 December 2022; https://events.iist.ac.in//ncmst2022/
- 15th International Conference on Plasma Science and Applications (ICPSA2022), jointly organized by Asian African Association for Plasma Training (AAAPT) and Guwahati University, 28-30 December 2022; https://icpsa2022.eduweave.com/

Lectures & Conference Awards

Mr. Aroh Shrivastava received a Best Poster Award for his poster entitled "*Estimation of porosity-thermal conductivity relationship of compact LiTiO3 ceramic*" at 23rd DAE-BRNS Symposium on Thermal Analysis (THERMANS-2022), which was held at the Khalsa College, Amritsar, during 3-5 November 2022.

Dr. Shashank Chaturvedi, Director IPR, delivered the 67th "*PRL ka Amrut Vyakhyaan"* on 9th Nov, 2022. This on-line lecture was entitled "*Fusion and Plasma Research in India: Where are we, where are we going?"* In his talk, Dr. Chaturvedi introduced the topic of plasma, briefly described some of the applications of plasma being pursued at IPR as well as India's contributions to the ITER programme. He also touched upon the 25-year plasma & fusion R&D roadmap for India.

Mr. Vishal Gupta received the Best Paper Award at the National Symposium on Cryogenics and Superconductivity (NSCS28), 18-21 Oct 2022, IIT Kharagpur, for his paper titled *"Development of Cryopump to evacuate large throughput under high heat load condition for SST-1*".

Mr. Piyush Raj received the Best Paper Award at the National Symposium on Cryogenics and Superconductivity (NSCS28), 18-21 Oct 2022, IIT Kharagpur, for his paper titled "*Development of Lab Scale Conduction Cooled HTS Magnets".*

Vigilance Awareness Week 2022

Vigilance Awareness Week-2022 (VAW) was observed at IPR from 31st October to 6th November, 2021. The theme of this year's VAW was Corruption Free India for a developed Nation'. As part of this, an “Integrity Pledge” was undertaken by the employees on 31st October 2022, with Dr. Shashank Chaturvedi, Director and Dr. N. Ramasubramanian (CVO, IPR) leading the pledge.

A talk on “Vigilance and Conduct rules” by Sri Dr. Ranjit Prasad Acharya, Retd. Dy. Legal Advisor and Director (Admin), DAE was organized for IPR staff on 17th October 2022. Mr Harshad Chamunde, Administrative officer-II, IPR also delivered a talk on “Vigilance –An effective tool against corruption” on 3rd November, 2022. “Nukkad Natak” was enacted by IPR staff within IPR campus (on 9th November, 2022).

Quiz, Poster and Slogan competitions were also held for the employees and prizes were awarded to the winners.

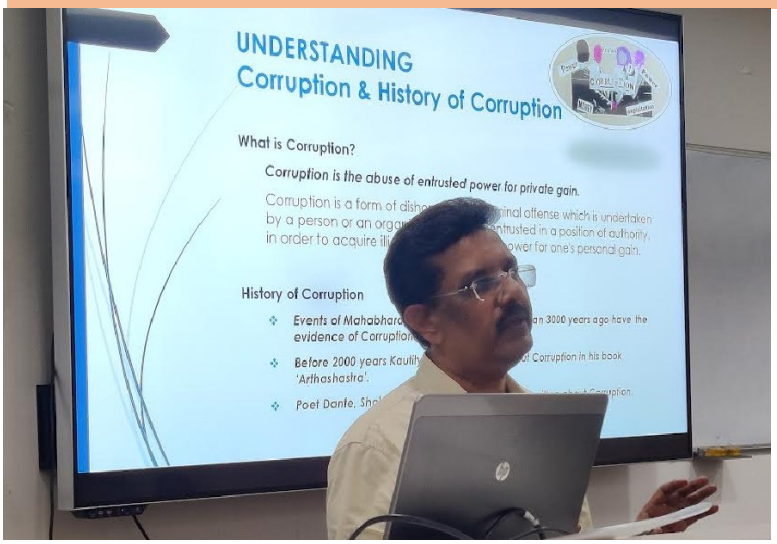
Competition	Name of the	Prize winning Slogan
English Slogan Writing - 1st	Shri Murtuza Vora	Limit your wants and need, Corruption is result of your greed Stop corruption and Make nation succeed
English Slogan Writing - 2nd	Shri S.Shravan	Corruption is a crime, Lets fight corruption Build corruption free society before it destroys nation
English Slogan Writing - 3rd	Shri Sabyasachi Pau	The much the awareness about corruption, The more will be the nation’s progress. As much as the nation’s progress, The stronger the society will be
Hindi Slogan Writing - 1st	Dr. Sandhya Dave	आओ भ्रष्टाचार रूपी राक्षस का संहार करें। देश के विकास हेतु, एकजुट हो इस पर प्रहार करें ॥ विश्वभर में सतत विकास का इतिहास रच आना है । शुद्ध आचरण के संकल्प से, देश को भ्रष्टाचार मुक्त बनाना है ॥ आओ देश के विकास में बस इतना कर ले। स्वयं के शुद्ध आचरण का जीवन भर प्रण ले ॥
Hindi Slogan Writing - 2nd	Shri Ashutosh Singh	विकसित राष्ट्र की है भारत को चाह, भ्रष्टाचार हटा के आसान की जा सकती है, यह राह ॥
Hindi Slogan Writing - 3rd	Shri Faisal Khan	विकसित राष्ट्र बना सकते हैं भ्रष्टाचार मिटा सकते हैं। अगर है राष्ट्र के प्रति प्रेम भावना, वह क्या जाने राष्ट्र जिसका धर्म हो भ्रष्टाचार, पैसा ही जिसका हो राष्ट्र वही करता रहेगा भ्रष्टाचार जिसको हो राष्ट्र पर अपने जीवन को न्योछावर करने की आशा वही कर सकता है , भ्रष्टाचार मुक्त राष्ट्र की अभिलाषा।

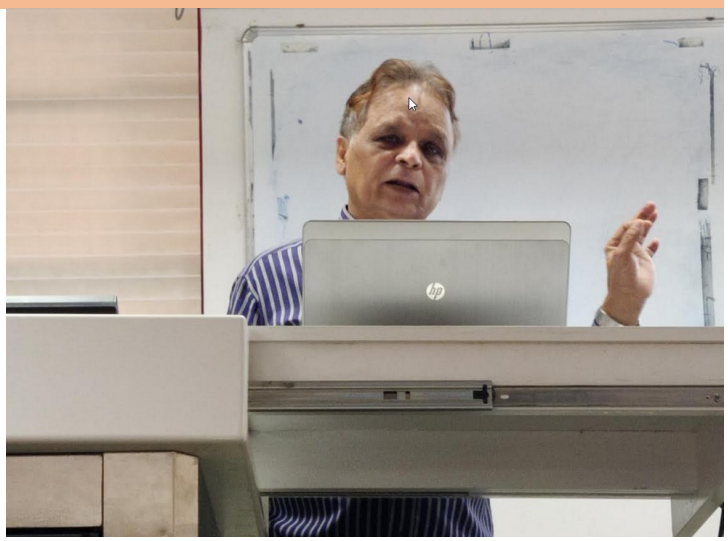
Story Writing (Hindi)		Story Writing (English)	
1st	Shri Ashutosh Singh	1st	Shri Pranav J Barapatre
2nd	Dr. Sandhya Dave	2nd	Shri Sabyasachi Paul
3rd	Shri K.G. Parmar	3rd	Shri Akhtar Jamal

Extempore Competition	
1st	Shri Munaf M. T.
2nd	Shri Pinakin Devluk
3rd	Shri Nitin Bairagi

Quiz (Hindi)		Quiz (English)		Quiz (Gujarati)	
1st	Shri Sandeep Gupta	1st	Shri Pramila	1st	Shri Yashrajsingh J Rathod
2nd	Shri Dheeraj Kumar	2nd	Shri Ankur Jaiswal	2nd	Shri P. K. Parmar
3rd	Shri Anil kumar	3rd	Dr. Premjit Singh Kongkham	3rd	Shri Maneshkumar B Rathod

Dr. Shashank Chaturvedi administering the “Integrity Pledge” to IPR staff





(L) Shri Harshad Chamunde and (R) Dr. Ranjit Prasad Acharya delivering their vigilance related talks

(L) The “Nukkad “ Natak” being enacted at IPR (R) The “Nukkad Natak” team

The audience enjoying the “Nukkad Natak”

Vigilance Awareness Week 2022

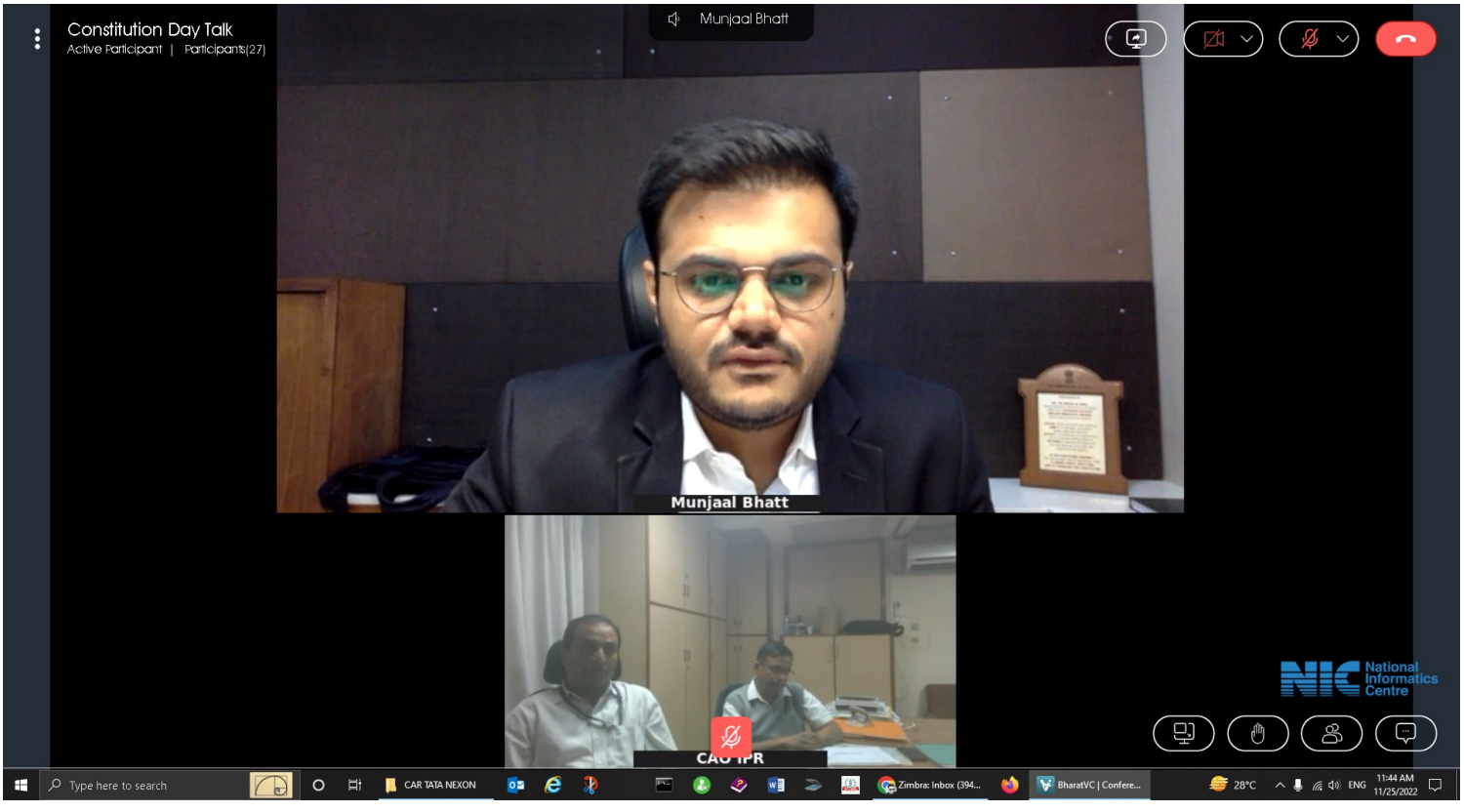
The concluding session of the Vigilance Week was held at IPR on 25th Nov, 2022. This session was presided over by Dr. S. Mukherjee (Dean, Admin), Shri Niranjan Vaishnav (CAO) and Dr. N. Ramasubramanian (Chief Vigilance Officer). Prizes were also distributed to the winners of the various competitions organized as part of the Vigilance Week 2022.

(L-R) Sandeep Gupta, Pranav J Barapatre, Ashutosh Singh and Munaf M Tunderwala receiving their prizes for the competition held during the Vigilance Week from Dr. S. Mukherjee

(L-R) Harshad Chamunde (for talk), Maneshkumar B Rathod, Prakash Parmar and Pramila Ranjan receiving their prizes for the competition held during the Vigilance Week

Constitution Day Celebration @ IPR

The constitution day is celebrated every year on 26th November to commemorate the adoption of the constitution of India as Jan Bhagidari and to honour and acknowledge the contribution of Founding Fathers of the Constitution. On this occasion, an online seminar was arranged Advocate Shri Munjal Bhat on 25 November 2022. The topic of the seminar was "*The Constitution of India*". Mr. Bhatt is the Managing Partner of M. R. Bhatt and Company. His prime areas of practice include civil and criminal litigation, arbitration, advisory services and drafting of legal documents. He completed his LLB from GNLU in the year 2015 and went on to complete his LLM from New York University School of Law in 2016.



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Know Your Colleague

Mr. Dikens R Christian (Scientific Officer-E) joined IPR in October 2008 as an Engineer-SC and since then serving in SST-1 Cryogenic Division. He significantly contributed initially in procurement, installation and commissioning of 12 kA, 16 V DC SMPS based power supply and 20kVA UPS system. He has participated in TF superconducting coils tests Campaign and is an active member in the SST-1 cryogenics plant operation.

He has vast experience in electrical engineering and mainly responsible for up-gradation, maintenance and operation LT Electrical distribution, Electrical motors and Drives, Low voltage power supply and UPS systems. He has significantly contributed towards grounding issues at cryogenics. Currently, he is actively involved in the testing of prototype HTS and MgB2 based current leads, cables and magnets.

"Stall with Best Exhibits" Award for IPR Outreach

"Stall With The Best Exhibits" award presented to IPR stall at the "Vison Rajasthan-2022" Exhibition at Sirohi, Rajasthan

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