

माननीय संसदीय राजभाषा समिति की पहली उपसमिति द्वारा दिनांक 29 अक्टूबर 2021 को प्लाज्मा अनुसंधान संस्थान, गांधीनगर कार्यालय में राजभाषा हिंदी के प्रगामी प्रयोग में हुई प्रगति का राजभाषा निरीक्षण किया गया। इस निरीक्षण बैठक में परमाणु ऊर्जा विभाग की ओर से श्री संजय

राजभाषा हिंदी के प्रगामी प्रयोग में हुई प्रगति का राजभाषा निरीक्षण किया गया। इस निरीक्षण बैठक में परमाणु ऊर्जा विभाग की ओर से श्री संजय कुमार, संयुक्त सचिव (प्रशासन एवं लेखा) एवं श्री अचलेश्वर सिंह, संयुक्त निदेशक (राजभाषा) तथा प्लाज़्मा अनुसंधान संस्थान की ओर से डॉ. शशांक चतुर्वेदी, निदेशक, डॉ. प्रवीण कुमार आत्रेय, प्रभागाध्यक्ष, अनुसंधान एवं विकास, श्री राज सिंह, वैज्ञानिक अधिकारी-एच, श्री निरंजन वैष्णव, मुख्य प्रशासनिक अधिकारी एवं डॉ. संध्या दवे, हिंदी अधिकारी ने भाग लिया।

दिनांक 29 अक्टूबर 2021 को निरीक्षण बैठक स्थल पर संस्थान की ओर से राजभाषा प्रदर्शिनी आयोजित की गई, जिसमें निरीक्षण से संबंधित एवं संस्थान में राजभाषा के प्रचार-प्रसार एवं उपलब्धियों से संबंधित सामग्री को प्रदर्शित किया गया। निरीक्षण बैठक में संस्थान के निदेशक ने माननीय संसदीय समिति के संयोजक श्री राम चन्द्र जांगड़ा, श्री ईरण्ण कडाडि, श्री श्याम सिंह यादव, श्री धर्मेन्द्र कश्यप, संसदीय समिति सचिवालय के अवर सचिव डॉ. रामेश्वर मीना एवं अन्य सदस्यों को स्मृति चित्र के रूप में आईपीआर के टोकामॅक मॉडल एवं शॉल तथा हिंदी पुस्तक से स्वागत सत्कार किया।

निरीक्षण बैठक के प्रारंभ में संस्थान के निदेशक डॉ. शशांक चतुर्वेदी ने आईपीआर की गतिविधियों पर पावर पॉइंट प्रस्तुति दी, जिसमें संस्थान की तकनीकी/वैज्ञानिक गतिविधियों के साथ-साथ राजभाषा के क्षेत्र में किये जा रहे विशेष प्रयासों को भी उल्लिखित किया गया। संसदीय राजभाषा समिति की पहली उपसमिति के साथ राजभाषा निरीक्षण बैठक सुचारू रूप से संपन्न हुई। माननीय संसदीय समिति ने राजभाषा कार्यान्वयन में संस्थान के प्रयासों एवं उपलब्धियों की सराहना की और आगे भी सुचारू कार्यान्वयन के लिए मार्गदर्शन दिये। यह बैठक गेल इंडिया प्रा. लिमिटेड अहमदाबाद के समन्वय से अहमदाबाद में ताज होटल में आयोजित हुई थी।

निरीक्षण के पश्चात माननीय संसदीय राजभाषा समिति के सदस्यों ने प्लाज़्मा अनुसंधान संस्थान, गांधीनगर की तकनीकी गतिविधियों का दौरा किया। माननीय संसदीय सदस्यों को आईपीआर की मुख्य प्रयोगशालाओं में भ्रमण कराया गया एवं मुख्य प्रौद्योगिकियों से परिचित कराया गया।



माननीय संसदीय राजभाषा समिति के सदस्य एवं आईपीआर की ओर से बैठक में उपस्थित अन्य सदस्यगण

माननीय संसदीय राजभाषा समिति द्वारा प्लाज्मा अनुसंधान संस्थान का राजभाषा निरीक्षण



(L) माननीय संसदीय समिति का अभिवादन करते हुए श्री संजय कुमार, संयुक्त सचिव (प्रशासन एवं लेखा), पऊवि (R) माननीय श्री राम चंद्र जांगड़ा को स्मृति चिन्ह प्रदान करते हुए आईपीआर निदेशक



(L) माननीय श्री श्याम सिंह यादव (R) माननीय श्री ईरण्ण कडाडि को स्मृति चिन्ह प्रदान करते हुए आईपीआर निदेशक



(L) माननीय श्री धर्मेन्द्र कश्यप (R) माननीय समिति सचिवालय के अवर सचिव डॉ. रामेश्वर मीना को स्मृति चिन्ह प्रदान करते हुए आईपीआर निदेशक



माननीय संसदीय समिति के संयोजक श्री राम चन्द्र जांगड़ा से राष्ट्रपति के आदेशों का संकलन प्राप्त करते हुए डॉ. शशांक चतुर्वेदी

माननीय संसदीय राजभाषा समिति द्वारा प्लाज़्मा अनुसंधान संस्थान का राजभाषा निरीक्षण



(L) आईपीआर-राजभाषा प्रदर्शनी स्थल पर श्री अचलेश्वर सिंह, संयुक्त निदेशक (रा.भा), पऊवि(दाएं) तथा आईपीआर के अन्य सदस्य (R) आईपीआर-राजभाषा प्रदर्शनी पर माननीय समिति सदस्यों द्वारा राजभाषा सामग्री का निरीक्षण









माननीय संसदीय राजभाषा समिति का आईपीआर की प्रयोगशालाओं के दर्शन की तस्वीरें

IN-DA's Contributions to ITER Diagnostics

IN-DA is designing and developing four diagnostics systems and responsible for Upper Port 09 design, fabrication and integration. For the initial phase of ITER operation, IN-DA needs to deliver a Survey -X-Ray Crystal Spectrometer (XRCS-Survey). India will also deliver three other diagnostics systems, namely, high resolution imaging type X-ray spectrometer, Electron Cyclotron Emission (ECE) diagnostics and Charge eXchange Recombination Spectroscopy- pedestal (CXRS-P) diagnostics, which will be functional in the second phase of operation of ITER.

ITER- ECE Diagnostics : The ECE diagnostic is used primarily for core electron temperature measurement and detection of Neoclassical Tearing Modes (NTMs). This diagnostic is also used for the measurement of plasma energy, radiated power, run away electron behaviour, edge electron temperature profile & temperature transients during ELMs. The ECE measurement system consists of a front-end radiation collector, transmission lines (TLs), the radiation measurement instruments and high temperature black body calibration sources along with ITER compatible data acquisition system. The ECE diagnostic is designed to meet the measurement requirements from 70 GHz up to 1 THz in order to meet the functional requirements. This diagnostic has completed its preliminary design phase and now heading towards the final design phase. Various prototype activities are in progress to generate the experience on the development and operation of this system.



(L) Overview of ECE Diagnostic (R) XRCS-Edge spectrometer integrated in Upper Port -9

ITER-XRCS-Survey Spectrometer : The XRC-Survey spectrometer is used to detect and quantify the radiations emitted by several impurities, present in ITER-plasma, in a broad spectral range of 0.1 nm to 10 nm. From the measured spectra, the concertation and in-flux of these impurities will be estimated. The radiations are collected through a narrow opening in the plasma first wall and transported via a long sight tube from port opening of Equatorial Port-11. From the port opening, a long (~ 7m) vacuum extension tube is used to transport the signal up to the spectrometer chamber. The vacuum extension i.e. sight-tube is evacuated by torus and facilitates the loss-less transmission of X-rays up to the spectrometer. The spectrometer is a 7 channels Bragg spectrometer and four large X ray detectors are used to cover the entire wavelength range. The low energy (< 2.3 keV) spectra will be measured by customized CCD detector made of large area chip and the high energy (> 2.2keV) will be measured by a hybrid pixel photon counting detector. This system is in final design phase.

ITER-XRCS-Edge Spectrometer : The primary function of XRCS-Edge spectrometer is to measure the ion temperature and poloidal velocity profiles in the ITER plasma edge region for basic physics understanding and advanced operations. Apart from these primary measurements, the profiles of impurity density, Zeff and electron temperature, Te can also be measured in addition with this diagnostic. This system collects emissions from plasma edge region (r/a > 0.9 to 1.0) for ful-filling required measurement objectives. X-rays are collected through the long opening in the diagnostic first wall and then transported through a short vacuum extension tube (~ 2m) to the spectrometer chamber. At present, two spectral channels are envisaged for measuring He-like Argon and H-like Argon species. This spectrometer is in preliminary design stage and as parallel activity several prototype activities have already begun.



(L) XRCS-Survey Spectrometer integrated in Equatorial Port -11 (R) Schematic of the optical fiber bundle Assembly with all the required terminations and bundle to bundle coupling.

CXRS-Pedestal Diagnostics : Charge exchange recombination spectroscopy (CXRS) diagnostic has a primary role for measurements of ion temperature, plasma rotation and impurity density for ITER advance plasma control and physics studies for the pedestal region (r/a=0.85 -1.0). In this diagnostics, the visible light emitted by impurity ions (mainly low atomic number, fully striped), interacting with the fast (~ 100keV) hydrogen neutral atoms, injected using ITER-Diagnostics Neutral Beam are analyzed. For probing the pedestal region, these radiations are collected from a beam -plasma interaction zone of ~ 300mm with a 20 mm spatial resolution. Measurement requirements shall be achieved by suitable design of diagnostic, light collection (Mirror, lenses), transmission (optical fibers-80-meter-long, ~220 fibers distributed over 20 channels) and specific spectrometer (simultaneous measurements in three wavelength bands) detection systems. This system is progressing towards its preliminary design review (PDR).



Members of the ITER-India Diagnostics group

Newly Recruited Staff Members of IPR

On behalf of IPR, we welcome the new additions to the family of IPR. We also wish them all the very best for a long and fruitful career in IPR.



Shri I Suresh Scientific Assistant-C, Diagnostics D.O.J. : 21-06-2021





Vigilance Awareness Week 2021

Vigilance Awareness Week-2021 (VAW) was observed at IPR from 26 October to 2 November, 2021. The theme of this year's VAW was 'Independent India @ 75: Self Reliance with Integrity'. As part of this, an "Integrity Pledge" was undertaken by the employees on 26th October 2021, with Dr. Shashank Chaturvedi, Director and Dr. Anitha V P (CVO, IPR) leading the pledge. In view of COVID-19 pandemic related restrictions, the ceremony was conducted via web-livestream, while very few Officials were physically present.

An online talk on "**Creating a Life of Integrity**" was delivered by Sri Stanly M K, System Administrator, Controllers Office, BARC on 28th October 2021. A "*Nukkad Natak*" with title "*Daftar ki Dastak*" was enacted by IPR staff within IPR campus (on 27th October 2021) as well as at Bhat village to the Gram Panchayat members and students of Sarvodaya Vidya Mandir School at Bhat Village on 28th October 2021.

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

	Slo	Quiz Competition		
1 st Prize	Pranav J. Barapatre	"जब होगी सत्यनिष्ठा विकास का आधार, तब होगा आत्मनिर्भर भारत का सपना साकार"	1 st Prize	Bhoomi Sandip Gajjar
2 nd Prize	Arun G Panchal	"प्रतिज्ञा ईमानदारी की, भ्रष्टाचार को करेगी नष्ट, आत्मनिर्भरता का सपना देश का, हो जायेगा स्पष्ट"	2 nd Prize	Pedada Prasada Rao
3 rd Prize	Urvashi Parikh	"एक जुट होकर फिर एक नया स्वप्न सजाना है, स्वतंत्र करायां जिस भारत को उसे आत्मनिर्भर बनाना है"	3 rd Prize	Ulhas Kisan Dethe





The "Integrity Pledge" being taken by IPR staff.

Vigilance Awareness Week 2021



Images from the concluding event of the Vigilance Awareness Week 2021



Images from the "Nukkad Natak" presented by IPR staff

High voltage power supply (HVPS) installed at ITER-India Power Supply lab is integrated with Klystron to support operation of LHCD (Lower Hybrid Current Drive) system for SST-1 operations. Klystron (3.7GHz) is located nearly 200m away from HVPS.

Before interfacing with Klystron, power supply performance was demonstrated with dummy load. Protection functions were tested including short circuit/wire burn test on load end. Safety protocols are conveyed and established for safe operation. HVPS was prepared for remote operation using hardwire links within given time-line ensuring safety. Power supply was qualified for required power, time synchronization, load protection and remote operation.

To condition the Klystrons, the HVPS was operated remotely daily for 5-6 hours for 2 weeks in two separate campaigns in 2020 and 2021. It was operated mostly with continuous shot lengths of 480s at a power level of 1.6MW. During last SST campaign, LHCD operation was carried out with HVPS and Klystron integration, where the power supply feeds DC power of 1.6MW at 60kV to Klystron. Images below show current (green) and voltage (Pink) observed on scope during conditioning of klystrons. Another image (HMI) shows continuous voltage and short pulses of current during conditioning. Operation with additional interfaces and full remote configuration is planned for next campaign.



Activities of IPR Administration 3 Section

The Admin Section 3 looks after various activities of establishment, such as joining formalities, promotional reviews, issuing of various office orders, pay fixation, pension cases, LTC, academic and other related matters. Staff members may get details of their LTC block or update their service books, etc. by writing to admin3section@ipr.res.in

This division also takes care of the following matters related to staff members. handling of leave applications, resignation & tenure completions, issue of no-dues form, preparation of experience certificate, updation in service book/file, employee pension, permission to work at ITER-IO, issue of sanction order, execution of bonds, updation in PASTA and preparation of holiday list and notices thereof.

Admin Section 3 also issues Identity Cards to all the permanent and project staff members and also to Temporary project students / trainees and visitors. Engagement of Apprentice & related matters. It also deals with Academic and review matters – preparation of Mark sheets, Transcript of records and other related documents of students. Year wise record of all the enrolled students of HBNI and forwarding documents related to faculty registration to HBNI through Dean Academics, scheduling of promotional reviews and arrangement thereof.

The staff Access Control System, (Bio-metric Attendance System) as well as all the legal matters, court cases and related matters are also dealt with by this section.



As part of the AKAM activities, IPR staff were encouraged to conduct webinar programmes for the school/college where they studied. Shri Amadas Alli, Scientific Officer F, in association with the Outreach Division, conducted a 2-day webinar on Plasma and its Applications for the students and staff of his alma mater, the Zilla Parishad High School, Velpur (Telangana). 50 students and 4 teachers participated in this event.





Students and teachers of Zilla Parishad High School, Velpur (Telangana) attending the AKAM webinar

vijaykumar ganji

IPR Staff Club : Rangoli Competition

On 1st Nov, 2021, IPR Staff Club organized a "Rangoli" competition in connection with Diwali. Over 18 beautiful rangolis were made by staff from IPR, ITER-India as well as FCIPT. The top three rangolis were awarded prizes.



(L) First Prize (M) Second prize (R) Third Prize winning rangolis





संकाय विकास कार्यक्रम में प्रतिभागिता

प्रशासनिक प्रशिक्षण संस्थान, परमाणु ऊर्जा विभाग, मुंबई द्वारा 4 अक्टूबर 2021 से 8 अक्टूबर 2021 के दौरान पाँच दिवसीय "संकाय विकास कार्यक्रम" (Faculty Development Program) आयोजित किया गया, जिसमें संस्थान की हिंदी अधिकारी डॉ. संध्या पी दवे ने भाग लिया। यह कार्यक्रम विशेष रूप से परमाणु ऊर्जा विभाग के हिंदी कैडर के अधिकारियों के लिए आयोजित किया गया था। इस प्रशिक्षण कार्यक्रम में परमाणु ऊर्जा विभाग की विभिन्न इकाईयों से कुल 8 प्रतिभागियों ने भाग लिया। श्री जी. वेंकटेशन, निदेशक, प्रशासनिक प्रशिक्षण संस्थान, पऊवि एवं श्री अचलेश्वर सिंह, संयुक्त निदेशक(राजभाषा), पऊवि, मुंबई द्वारा इस अवधि के दौरान विभिन्न प्रशिक्षण सत्रों का आयोजन किया गया, जिसमें अधिकतर सत्र व्यावहारिक रूप से आयोजित किये गये। यह कार्यक्रम बहुत ही रोचक एवं ज्ञानवर्धक रहा। कार्यक्रम के समापन सत्र में श्री संजय कुमार, संयुक्त सचिव (प्रशासन एवं लेखा), पऊवि, मुंबई ने सभी प्रतिभागियों को प्रमाण पत्र प्रदान किये।



(L) प्रशिक्षण सत्र के दौरान प्रतिभागियों के साथ चर्चा करते हुए श्री अचलेश्वर सिंह, संयुक्त निदेशक (राजभाषा), पऊवि, मुंबई (R) समापन समारोह में प्रमाण-पत्र देते हुए श्री संजय कुमार, संयुक्त सचिव(प्रशासन एवं लेखा), पऊवि



संकाय विकास कार्यक्रम के प्रशिक्षक एवं प्रतिभागी तथा प्रशासनिक प्रशिक्षण संस्थान के सदस्य

- Dr. Nirav I. Jamnapara, gave an invited talk on "Advanced Materials" at "Processing & Characterization of Materials" (PCM-2021), Govt. Engg. College, Gandhinagar & IIM Baroda Chapter, on 24th September 2021
- Mr. Prince Kumar, gave an invited talk on "Weakly magnetized dust vortex flow analysis in the absence of nonconservative fields" at 5th Asia-Pacific Conference on Plasma Physics, Japan, 29th September 2021
- Mr. Satadal Das, gave an invited talk on "Equilibrium properties of a magnetized plasma behind an insulating obstacle" at 5th Asia-Pacific Conference on Plasma Physics (AAPPS-DPP2021), on 1st October 2021
- Dr. A. K. Sanyasi, gave a talk on "Large Area Multifilamentary Plasma Source in LVPD-Upgrade" at AAPPS-DPP2021 Online E-Conference, on 1st October 2021
- Ms. Sukriti Hans, gave a talk on "Ion-Induced Triangular Features Superimposed by Nanoripples of Silicon" at Joint ICTP-IAEA Virtual Workshop on Atomistic Modelling of Radiation Damage in Nuclear Systems, ICTP Trieste Italy, 4-8 October 2021
- Ms. Sukriti Hans, gave a talk on "Formation of Triangular Features Superimposed by Nanoripples Using Low Energy Ion Beam" at 6th International Conference on 'Nanostructuring by Ion Beams', (ICNIB 2021), IOP, Bhubaneswar, 6th October 2021 (Got 2nd best flash presentation award in ICNIB 2021)
- Mr. Satadal Das, gave a talk on "External plate biasing and diverging magnetic field effects on radial characteristics of back diffused expanding plasma column" at 74th Annual Gaseous Electronics Conference (GEC 2021), on 6th Oct 2021
- Dr. Rakesh Moulick, gave a talk on "Potential Around a Dust Grain in Collisional Plasma" at 4DSpace Meetings on Computations, University of Oslo, Norway, on 12th October 2021
- Dr. Sayantan Mukherjee, KIIT, Bhubaneshwar, gave a talk on "Thermo-physical properties of nanofluids" on 14th October 2021
- Prof. Reji Philip, Raman Research Institute, Bangalore, gave a talk on "C.V. Raman: The Man, The Scientist" on 18th October 2021 (Colloquium #307)
- Dr. Prachi Orpe, Nirma University, Ahmedabad, gave a talk on "Thermal plasma synthesis of magnetic nanoparticles Study of process parameters influencing the nanostructure and magnetism" on 22nd October 2021
- Dr. Garima Arora, Institute for Plasma Research, Gandhinagar, gave a talk on "Dynamics of fast ions from Laser produced Aluminum Plasma" on 25th October 2021
- Dr. Rohan Dutta, Institute for Plasma Research, Gandhinagar, gave a talk on "Design and Development of Prototype Cryocoolers for Cryopump" on 25th October 2021
- Mr. Chandan Danani, Institute for Plasma Research, Gandhinagar, gave a talk on "Computational modeling of tritium release from porous Lithium ceramic pebbles" on 27th October 2021
- Mr. Gheesa Lal Vyas, gave a talk on "IN-DA Progress Report" at 40th Meeting of the ITPA Topical Group on Diagnostics (ITER Organization), on 28th October 2021
- **Dr. Pawan Kumar,** Vignan's Foundation for Science Technology and Research, Jharkand, gave a talk on "Design and Development of Advanced Multiband Printed Antennas" on 29th October 2021
- Dr. Vishal Dhamecha, SP University, Anand, gave at talk on "Studies on compound semiconductor (ZnGa2Se4) thin film electronic devices" on 18th November 2021
- Dr. Vikram Singh Dharodi, gave a talk on "Numerical modeling of a laser produced plasmas and a propagating charged beam in a plasma" on 20th November 2021

Upcoming Events

- 2nd Fusion High Performance Computing (HPC) Workshop, 02-03 December 2021. https://hpcfusion.bsc.es/
- 17th Technical Meeting on Energetic Particles and Theory of Plasma Instabilities in Magnetic Confinement Fusion (Virtual Event); Vienna, Austria, 6-9 December 2021. https://www.iaea.org/events/evt1904279
- IAEA Meeting of the Global Network for the Atomic and Molecular Physics of Plasmas (GNAMPP), [Virtual Event], 6-10 December 2021. https://www.iaea.org/events/evt1904773
- 23rd IEEE Pulsed Power Conference & 29th IEEE Symposium On Fusion Engineering (PPC SOFE 2021), Denver, Colorado, USA, 12 -16 December 2021. https://uta.engineering/ppcsofe2021/
- 36th National Symposium on Plasma Science and Technology (PLASMA-2021), Birla Institute of Technology, Mesra, Jaipur Campus, Online, 13-15 December 2021. https://www.plasma2021.in/
- Joint ICTP-IAEA Workshop on Atomic Processes in Plasmas: Data-Driven Research, 13-17 December 2021. http://indico.ictp.it/ event/9657/
- Fusion Power Associates 42nd Annual Meeting And Symposium, Washington, DC, USA, 15-16 December 2021. http:// www.qedfusion.org/FPA/fpn21-28.shtml
- 8th International Conference on Product Lifecycle Modelling, Simulation, and Synthesis (PLMSS 2021), jointly organized by VSSC and IIST, 17-18 December 2021. https://plmss.org.in/plmss-2021/

Know Your Colleague



Mr. Gumansinh Gohil joined IPR in May, 2008 and is presently working as Scientific Officer – E with the Cooling Water System (CWS) group of ITER-India. He secured his M.Tech. degree in Manufacturing Management from BITS, Pilani. He is certified ASNT Level-II in NDE methods (UT, RT, MPT, LPT), IRCA Lead Auditor for QMS (ISO 9001) and Welding Inspector as per CSWIP 3.1. He is currently the Quality Assurance Responsible Officer (QA-RO) for ITER-India CWS Procurement Arrangement (PA) with key roles like vendor assessment, QA documentation, quality audits, quality surveillance, management of inspection activities, factory acceptance, sensitizing contractor/ suppliers about the French quality order requirements, ensuring the compliance to European Directives, etc. He is responsible for ITER-India Risk Management and also supports QA & Safety Group. He also acted as a QA & Safety Head of ITER-India.

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Help Fight The Covid-19 Pandemic



Wash Your Hands frequently With Soap





Always WEAR a Mask When you go outside

- Avoid touching your eyes, nose and mouth.
- If you have fever, cough and difficulty in breathing, seek medical care early
- Stay informed and follow advice given by your healthcare provider

Inform Office immediately if you or any family member tests positive

- Follow SMS **S**ocial Distancing : **M**ask : **S**oap/ Sanitizer
- Strictly follow social distancing while outdoors, especially at work.

Please get yourselves vaccinated against Covid-19

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COVID-19
10ml कृपया अपने आप को कोविड -19 के
VACCINखिलाफ टीकाकरण करवाएं
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For your safety and for the safety of your co-workers, ensure that you always use Arogya Setu App

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