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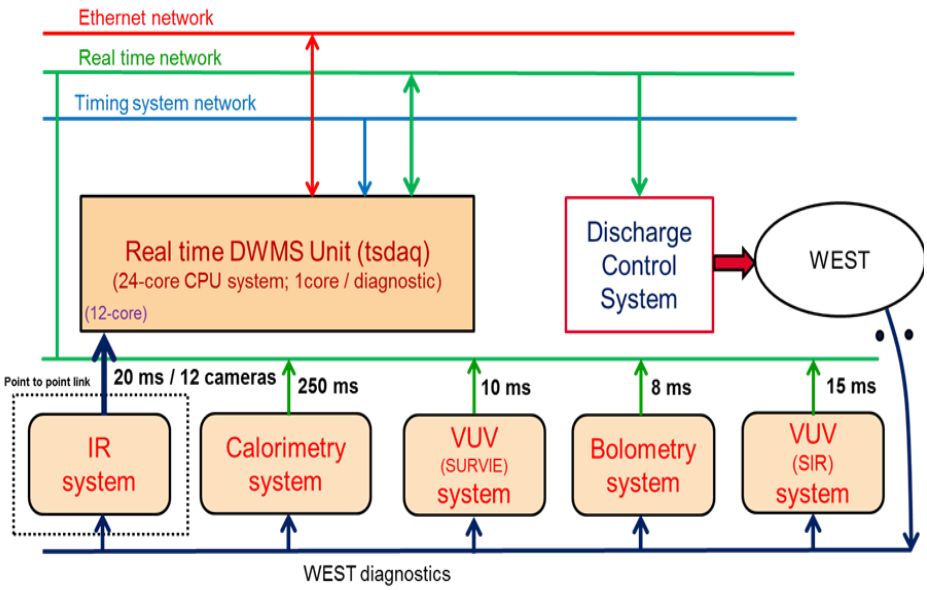
ऑनलाइन हिन्दी कहानी प्रतियोगिता 'चित्र देखो, कहानी लिखो' का आयोजन

नगर राजभाषा कार्यान्वयन समिति, गांधीनगर के तत्वावधान में प्लाज़्मा अनुसंधान संस्थान, गांधीनगर **द्वारा** दिनांक 1 मार्च, 2017 को **ऑनलाइन हिन्दी कहानी प्रतियोगिता 'चित्र देखो, कहानी लिखो' का आयोजन** किया गया जिसमें गांधीनगर में स्थित केन्द्रीय सरकारी कार्यालय/संस्थान/उपक्रम आदि के अधिकारियों/कर्मचारियों ने भाग लिया। ऑनलाइन कहानी प्रतियोगिता में सभी प्रतिभागी कार्यालयों के अधिकारियों/कर्मचारियों को 1 मार्च को सुबह 11 बजे ईमेल द्वारा एक चित्र भेजा गया, जिसके आधार पर प्रतिभागियों ने कहानी लिखकर 12 बजे तक ईमेल द्वारा भेजी। इस प्रतियोगिता में कुल 40 प्रतिभागियों ने अपने नाम दिये और 33 प्रतिभागियों ने कहानियाँ लिखकर या टाइप करके ईमेल द्वरा भेजी। इस प्रतियोगिता में जनगणना कार्य निदेशालय, तट रक्षक क्षेत्र(उ.प.), प्लाज़्मा अनुसंधान संस्थान, केन्द्रीय विद्यालय संगठन, राष्ट्रीय फैशन टेक्नोलॉजी संस्थान, केन्द्रीय लोक निर्माण विभाग,उदयभाणसिंहजी क्षेत्रीय सहकारी प्रबंध आदि कार्यालयों के कर्मचारियों ने चित्र के आधार पर कहानी लिखकर भेजी। ऑनलाइन हिन्दी कहानी प्रतियोगिता 'चित्र देखो, कहानी लिखो' के निम्नलिखित विजेताओं को नराकास, गांधीनगर की 8वीं छमाही बैठक में पुरस्कृत किया जाएगा:

पुरस्कार	विजेताओं के नाम	कार्यालय
प्रथम	श्रीमती शिल्पा खंडकर	प्लाज़्मा अनुसंधान संस्थान
द्वितीय	श्री राजीव कुमार झा	जनगणना कार्य निदेशालय
तृतीय	श्री सुमित पंत	मुख्यालय तटरक्षक क्षेत्र (उ.प)
प्रोत्साहन पुरस्कार	i) सुश्री हिरल जोशी ii) श्रीमती नीलिमा चौरसिया	प्लाज़्मा अनुसंधान संस्थान जनगणना कार्य निदेशालय

चित्र देखो, कहानी लिखो प्रतियोगिता हेतु भेजा गया चित्र

IPR-CEA Collaboration



Overview of DWMS communication scheme

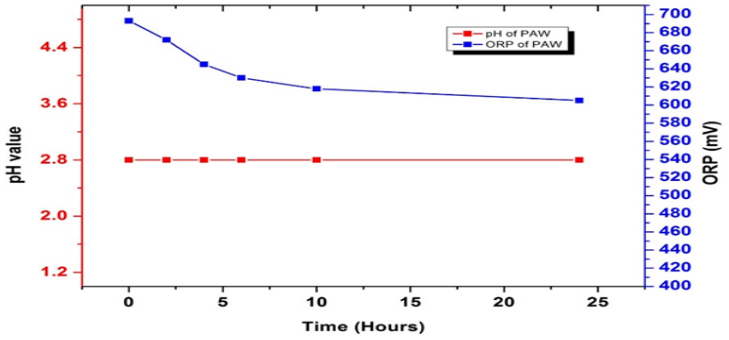
Mr. Mitesh Patel had been deputed for working on the WEST tokamak project in France. He worked with **GP3** (**G**roupe **P**rotection de la **P**remière **P**aroi) group under the guidance of Dr. Jean-Marcel Travere, Dr. Philippe MOREAU and Mr. Benjamin SANTRAINE. Wall Monitoring System (WMS) has been set-up for protection of Tungsten based Plasma Facing Components (PFC) which are less tolerant to overheating than usual carbon components. A set of analysis tool accessing WEST database is used after discharge for comparison between prediction and experimental results. The WMS was based on an intensive use of image and multi-sensor analysis. Mr Patel developed software code using C and libtsdaq library in Cent OS for interfacing of TSdaq_client of DWMS with TSdaq.

He also developed the software source code to read different parameters & data in real time. The software performs various tests on the data, and based on algorithms of various tests, appropriate warnings are generated, which are transferred to centralized database (TSbase) to control system.

Microbial Inactivation using Plasma Activated Water

Plasma-activated water (PAW) is defined as the water exposed to non thermal or thermal plasma where chemical species formed interact with water during the exposure or after the plasma discharge is switched off. Plasma activated water is emerging field and has many applications in killing harmful micro-organism to cure various skin diseases and may eliminate the use of pesticides in agriculture. Studies suggest that plasma activated water possess reactive nitrogen species (RON) which include nitrous (NO_2^-) and nitric (NO_3^-) and reactive oxygen species (ROS) such as peroxy radicals ($^{\cdot}OOH$) and hydrogen peroxide dissolved in water. Electrons get attached with oxygen species and assist in scavenging oxidation reactions. Recent research has shown that microbial cells can be killed when they are exposed to plasma activated water. Dr. S.K. Nema and PAW Team at FCIPT, have developed a novel apparatus and process to produce activated water using non-thermal plasmas. The initial chemical analysis and microbial analysis has been carried out with the help of Gujarat Environment Management Institute (GEMI), Gandhinagar. It can be clearly seen that the pH of plasma activated water does not change with time, however the oxidation-reduction potential (ORP) reduces initially and gets stabilized after 24 hours. The initial reduction in ORP value may be due to degasification of dissolved ozone.

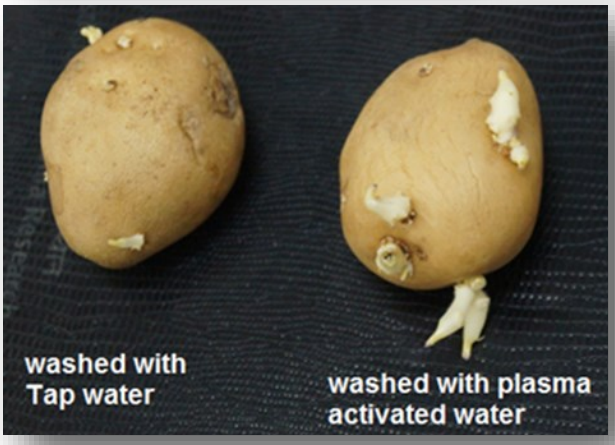
No.	Parameters	Value
1.	pH	2.5 – 8.5
2.	NO_2-	21.6 mg/L
3.	NO_3-	181.8 mg/L
4.	H_2O_2	+ + (present)
5.	Oxidation Reduction Potential	+450 to + 650 mV



(L) The chemical analysis of PAW water (R) Change in pH & OPR of PAW water with time

Study of the growth of *E-Coli* bacteria in untreated and PAW was carried out at GEMI, Gandhinagar. In this study, 99ml of PAW was mixed with 1 ml of E.Coli bacteria solution. After that, the mixture was taken out at various intervals and mixed with Agar solution and then incubated for 24 hours. In the case of untreated water, high bacterial growth was observed whereas in the case of plasma activated water, it was observed that the E-coli bacteria growth was suppressed due their interaction with PAW. After 45 minutes in PAW, no bacterial growth was observed.

Growth of E-coli in (a) untreated and (b) plasma activated water (c) Tomatoes washed by PAW and normal water



The effect of PAW on skin of tomatoes and potatoes were also studied. The tomatoes washed with PAW showed no wrinkles on the skin even after 40 days after washing. It was seen that the PAW enhances germination rates in specific types of potatoes where germination sites were present. PAW has many potential applications in variety of areas which include ; alternative to pesticides as it can kill bacteria, fungi and microorganisms. It can be used for oral hygiene, teeth whitening, for food preservation and for enhancing seed germination.

The device developed at FCIPT to generate PAW

IPR Groups/Divisions - Computer Center

The IPR Computer Center forms the backbone of the IT infrastructure of IPR. From the early days of the VAX machine to current high performance computing devices, the Center has grown with the advance of technology in the IT sector. From providing round the clock email services over the web and mobile devices to providing state of the art high performance computing facilities, the center caters to all the IT requirements of IPR. The center has developed a very efficient E-office system which caters to many of the administration related work. The document storage system provides a location for long term storage of technical and scientific documents generated within the institute. The recently established industry standard Data Center will provide 24x7 power and cooling to all the critical IT services being offered by the Center and also for future computation facilities and IT services. The Center also provided high speed internet to IPR, FCIPT and IPR labs through dedicated optical fiber lines, some of which are in a ring mode which reduces chances of failure. It also provides a radio backup for the internet incase of failure of the optical fibers. The Center also implements, from time to time, appropriate features to keep the IT services and IPR IT network secure. A very dynamic and frequently updated IPR website showcases the institute to the outside world. The Center also maintains a team of personnel for resolving day to day IT related issues.

L-R : Prashant Kumar, Vijay Patel, Hemant Joshi, Govind Lokhande, Ravi A V Kumar, Shailendra Trivedi, Sharad Jash and Arvind Singh

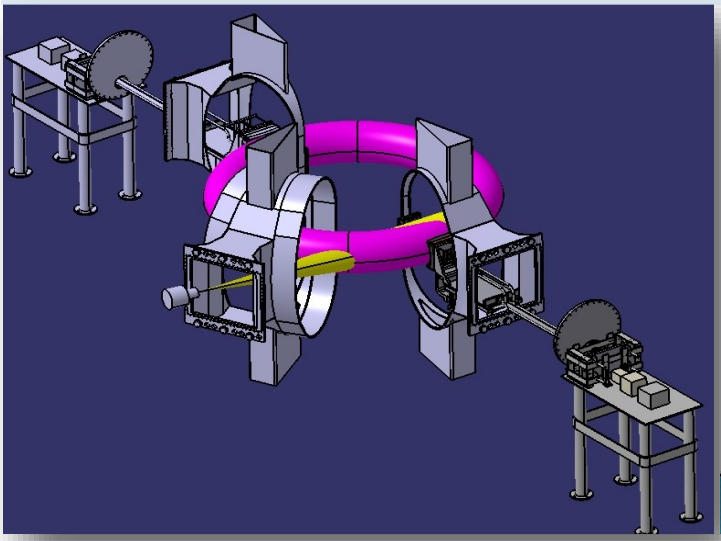
Cryostat Manufacturing - Commencement of Fabrication of Upper Cylinder

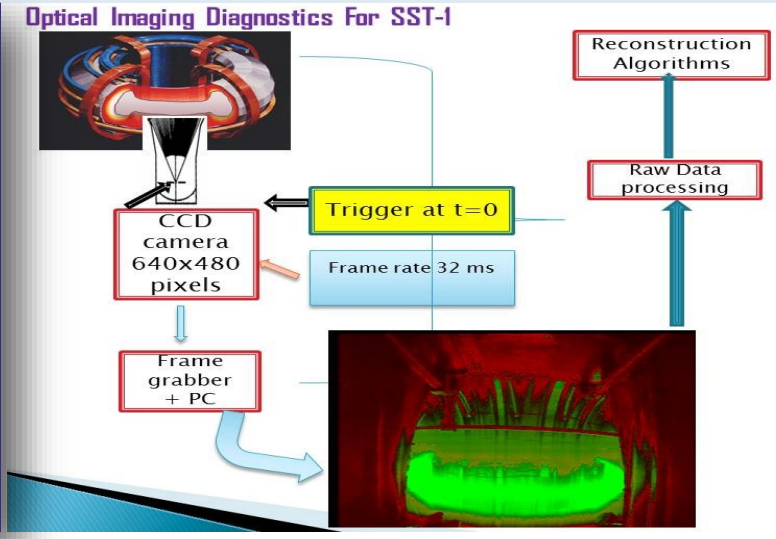
On 29th March 2017, the 2nd phase of ITER Cryostat Manufacturing commenced with the traditional Indian coconut breaking ceremony. At the production shop of Larsen & Toubro Heavy Engineering Hazira, the fabrication of Upper Cylinder commenced with first welding/arcing for the T-ribs. The Cryostat Upper Cylinder is 28.54 m in diameter, 50 mm thick shell and 8.61 m high, which will be connected to the Top Lid at its uppermost end and to the lower cylinder from the bottom. The Upper Cylinder is stiffened for external pressure by longitudinal equally spaced and circumferential stiffening rings of T sections. It has 18 rectangular ports with associated stiffening flanges. The event was graced by ITER-India Project Director - Shishir Deshpande, VP of L&T Nuclear Business Unit - Shri. Anil Parab and members from ITER-India and L&T Cryostat Team.

Members from ITER-India and L&T Cryostat team during the commencement of manufacturing of the Cryostat Upper Cylinder

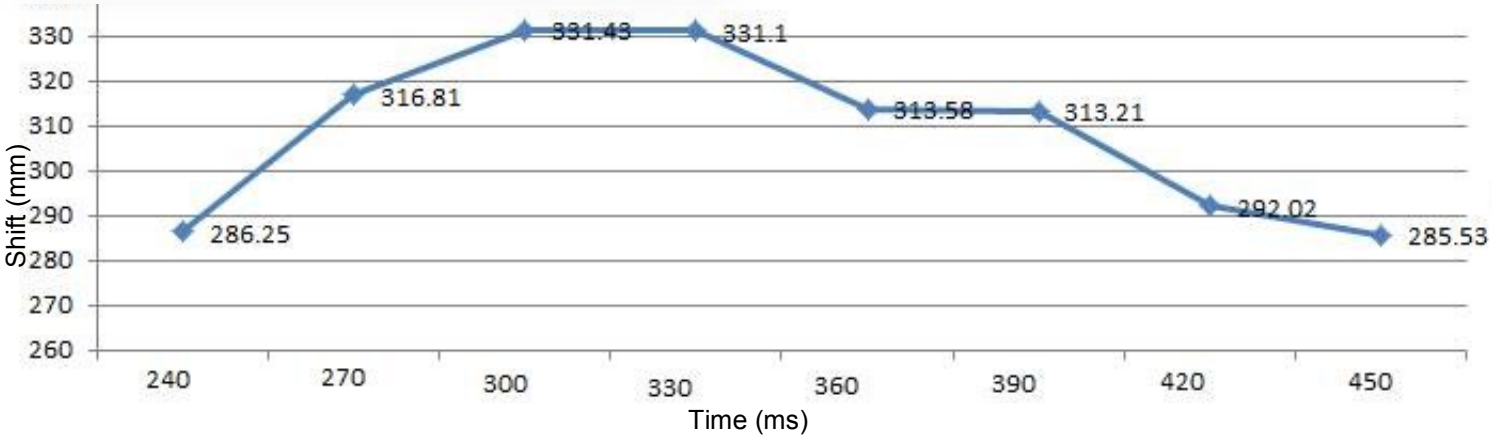
Optical Imaging Diagnostics for SST-1

A tangential viewing optical imaging system at SST-1 is used to observe the plasma shift both vertical and horizontal during experimental campaigns. The images from the plasma are transferred through optical imaging fiber and coupled to a CCD camera which operates at 31 frames/sec. The data from the CCD camera is transferred through gigabit Ethernet cable to acquisition PC placed in diagnostics lab. The whole system is fully automated for operation and data acquisition of the imaging data. The complete imaging system will be explained in this presentation. With this optical imaging system, the shift in plasma position both in vertical and horizontal direction is observed. The plasma shape and diameter can also be estimated with this system. The estimated diameter during some of the plasma shots is ~50 cm and shape is circular. The data from this diagnostics is very useful from the operation point of view of the machine.

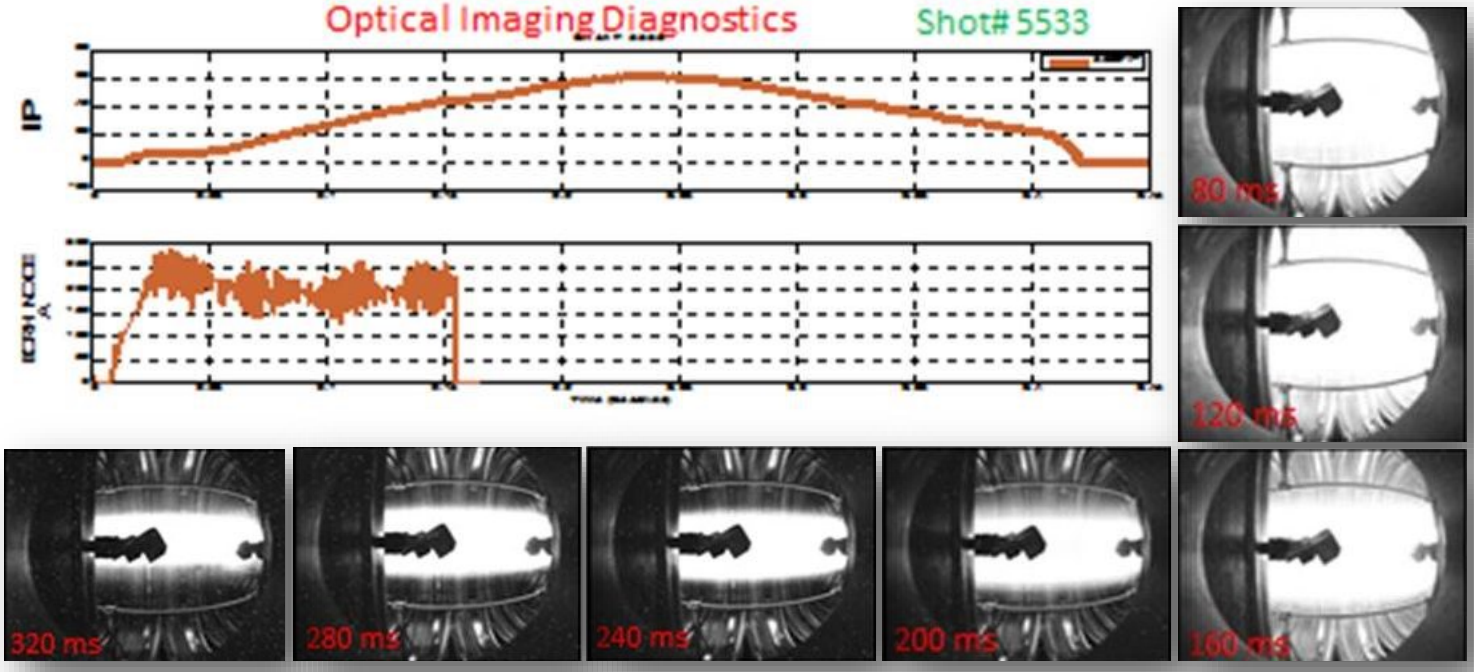




(L) Tangential view of the optical imaging diagnostics (R) The schematic of the operation of the diagnostic



The shift recorded in individual frame of the video plotted against time shows the temporal shift of the plasma during the shot



(Clockwise from top) Temporal evolution of plasma in SST-1. Frame grabs showing the evolution of the plasma from 80-320ms

नगर राजभाषा कार्यान्वयन समिति की आठवीं छमाही बैठक

नगर राजभाषा कार्यान्वयन समिति की आठवीं छमाही बैठक अंचल कार्यालय, देना बैंक के सौजन्य से 21 अप्रैल, 2017 को आईपीआर में आयोजित की गई। इस बैठक में गांधीनगर में स्थित केन्द्र सरकार के कार्यालयों/उपक्रमों/बैंकों के विभागाध्यक्षों एवं प्रतिनिधियों की उपस्थिति में राजभाषा हिन्दी में हो रही गतिविधियों पर चर्चा की गई और हिन्दी के कार्यान्वयन से जुड़ी समस्याओं के समाधान पर भी विचार-विमर्श किया गया। नराकास की यह बैठक श्री अविनाश किशोर सहाय, अध्यक्ष, नराकास एवं प्रधान आयकर आयुक्त, गांधीनगर की अध्यक्षता में संपन्न की गई। राजभाषा विभाग, गृह मंत्रालय की क्षेत्रीय प्रतिनिधि श्रीमती सुनीता यादव, उप निदेशक (कार्यान्वयन), मुंबई ने बैठक में राजभाषा नीति-नियमों के बारे में अद्यतन जानकारी एवं मार्गदर्शन प्रदान किया। इस बैठक में संस्थान की ओर से डॉ. चेन्ना रेड्डी, स्थानापन्न निदेशक (डीन), श्री पी. के. आत्रेय, का. मु. प्र. अधिकारी एवं श्री राजसिंह, अध्यक्ष, राजभाषा कार्यान्वयन समिति उपस्थित थे। इस अवसर पर वर्ष 2016-17 के लिए राजभाषा के क्षेत्र में श्रेष्ठ कार्यनिष्पादन हेतु गांधीनगर स्थित सदस्य कार्यालयों को सम्मानित किया गया। केन्द्रीय विद्यालय संगठन, गांधीनगर को प्रथम पुरस्कार, जनगणना कार्यालय, गांधीनगर को द्वितीय पुरस्कार, प्लाज़्मा अनुसंधान संस्थान, गांधीनगर को तृतीय पुरस्कार एवं देना बैंक, अंचल कार्यालय गांधीनगर को प्रोत्साहन पुरस्कार से सम्मानित किया गया। पुरस्कृत कार्यालयों में राजभाषा संबंधी कार्यों से जुड़े कर्मचारियों को उनके उल्लेखनीय योगदान के लिए पुरस्कृत किया गया। डॉ. संध्या पी. दवे, कनिष्ठ हिन्दी अनुवादक, प्लाज्मा अनुसंधान संस्थान को कार्यालय में राजभाषा कार्यान्वयन में उल्लेखनीय योगदान के लिए तृतीय पुरस्कार प्रदान दिया गया।

नराकास के तत्वावधान में 1 मार्च, 2017 को आईपीआर द्वारा ऑनलाइन प्रतियोगिता 'चित्र देखो कहानी लिखो' का आयोजन किया गया था, जिसमें गांधीनगर में स्थित केन्द्र सरकार के कार्यालयों/उपक्रमों/बैंकों से कुल 40 प्रतिभागियों ने भाग लिया। इस बैठक में कहानी लेखन प्रतियोगिता के लिए आईपीआर की श्रीमती शिल्पा खंडकर, वैज्ञानिक सहायक को प्रथम पुरस्कार एवं सुश्री हिरल जोशी, वैज्ञानिक सहायक को प्रोत्साहन पुरस्कार प्रदान किया गया।

(बाएं से दाएं) न.रा.का.स बैठक में मंच पर आसीन महानुभाव | राजभाषा के क्षेत्र में श्रेष्ठ कार्यनिष्पादन हेतु अंचल प्रबंधक, देना बैंक द्वारा तृतीय पुरस्कार ग्रहण करते हुए डॉ. चेन्ना रेड्डी |

(बाएं से दाएं) राजभाषा कार्यान्वयन मे उल्लेखनीय योगदान देने के लिए उपनिदेशक, राजभाषा द्वारा तृतीय पुरस्कार ग्रहण करते हुए श्रीमती संध्या पी. दवे | 'चित्र देखो, कहानी लिखो' प्रतियोगिता के लिए नकद पुरस्कार एवं प्रमाणपत्र प्राप्त करते हुए श्रीमती शिल्पा खंडकर एवं सुश्री हिरल जोशी |

IPR Staff Club

The annual General Board Meeting (GBM) of IPR staff club was held on 13th April 2017 in IPR Seminar Hall. The previous committee presented the brief overview of the activities done throughout the year. In the GBM the new staff club executive committee has been elected for this financial year 2017-18. This new committee will carry out the activities outlined by the previous committee and will also initiate some new activities for this year. The first meeting of the new committee was held the same week. The first event to be organized by the new IPR staff committee will be International Yoga Day on 21st June, 2017. The new Staff Club committee is committed to running the Staff Club to the best of their capabilities.

President **Dinesh Nair**	General Secretary **Hitesh K Gulati**	Jt. Secretary (IPR) **Karishma**	Jt. Secretary ITER – India **Suvitha Kartha**	Jt. Secretary FCIPT **Akshay Vaid**	Jt. Secretary Vidhatha **Manoj Kr. Gupta**	Cultural Secretary **Ashlesh Shah**

Jt. Cultural Secretary – ITER India **Uday Kumar**	Treasurer **Hitesh Suthar**	Jt. Treasurer **Parag Panchal**	Sports Secretary **Deepak Aggarwal**	Jt. Sports Secretary **Abhijeet Kumar**	Jt. Sports Secretary **L. N. Gupta**	Jt. Sports Secretary – ITER India **Dass Sudhir Kumar**

Elected Staff Club Executive Committee Members for Financial Year 2017-18

Campus Flora & Fauna

It is very mysterious why nature has given the *Jangali Badam* (Sterculia foetida) so much of protection for its seeds, so much so that even the seed finds it difficult to sprout due to the thick hard shell it is protected with. Sometimes, it is required to grind away the hard shell, followed by soaking in water to help the seed sprout. The tree has foul smelling flowers and hence the name of the tree *Sterculia* genus name comes from the Roman god, Sterquilinus, who was the god of fertilizer or manure. Soon, small bunches of fruit with a very hard cover slowly emerges, each of which are connected firmly to the tree and is very difficult to dislodge. The fruits, as they ripen, changes into bright red colour which one would imagine, would attract both the birds and monkeys in the vicinity. However, it is surprising to see that that neither the birds nor the monkeys seem to be attracted to these fruits. Over a period of 10-11 months, the fruits open up as they ripen, with the seeds arranged in a shape of an open mouth showing the teeth. The shell now dries up, and the seeds turn black, waiting for an appropriate way to disperse beyond the shadows of the tree. And, life goes on.. On a scientific note, The oil of *Sterculia foetida* seeds has been found to be comparable to sunflower, soybean, and rapeseed oils for the use of biofuels.

Past Events @ IPR

- ***Dr. Subrata Pradhan,*** Institute for Plasma Research, Gandhinagar, gave a talk on " *Doping-induced super-lattice-like structure in the isotopic $Mg^{11}B_2$ bulk superconductor for fusion applications*" on 23rd March 2017
- ***Prof. Avinash Khare,*** Department of Physics and Astrophysics, University of Delhi, gave a talk on " *Creation of General relativity: Einstein and Hilbert*" on 24th March 2017 (Colloquium # 269)
- ***Dr. Mike Cassidy,*** CEO, Apollo Fusion, Inc., gave a talk on "*Towards a Sustainable Energy Future: A New Hybrid Fusion-Fission Reactor*" on 3rd April 2017
- ***Prof. Praveen Chaddah,*** Ex-Director of the UGC-DAE Consortium, gave a talk on "*Dissemination of research results: Can we fight being plagiarised*?" on 3rd April 2017 (Colloquium # 270)
- ***Prof. Praveen Chaddah,*** Ex-Director of the UGC-DAE Consortium, gave a talk's on "*New concepts in 1st order transitions" and "Studies on magnetic transitions*" on 5th & 6th April 2017
- ***Dr. Vipin K. Yadav,*** Vikram Sarabhai Space Centre (VSSC), ISRO, Thiruvananthapuram, gave a talk on "*Plasma Instruments and Wave Detection in Space*" on 12th April 2017
- ***Dr. Subrata Pradhan,*** Institute for Plasma Research, Gandhinagar, gave a talk on "*A Novel Method of Producing Single Walled Reduced Diameter Silicon Carbide Nano Tubes (SiCNT) with Arc Plasma Treatment*" on 17th April 2017

Upcoming Events

- 22nd Topical Conference on RF Power in Plasmas, Aix-en-Provence, France, 30 May - 2 June 2017 http://irfm.cea.fr/RFPPC2017/
- 27th IEEE Symposium on Fusion Engineering (SOFE-2017), Shanghai, China, 4-8 June 2017 https://sofe2017.princeton.edu/
- Physics of Low Temperature Plasma (PLTP-2017), Kazan, Russian Federation, 5-9 June 2017 http://kpfu.ru/eng/icpltp2017/general-information
- International Workshop on Computational Nanotechnology, Windermere, UK, 5-9 June 2017 http://iwcn2017.iopconfs.org/home
- 9th International Workshop on Microplasmas (IWM 2017), Garmisch-Partenkirchen, Germany, 6-9 June 2017 http://www.iwm2017.de/
- 17th International Conference on Plasma Physics and Applications (17th CPPA) and Workshop on Plasma Coatings for Medical Applications, Bucharest, Romania, 15-20 June 2017 http://www.inflpr.ro/en/system/files/first_announcement_cppa_2017.pdf
- 21st IEEE International Pulsed Power Conference (PPC 2017), Brighton, UK, 18-22 June 2017 http://ece-events.unm.edu/ppc2017/registration.html
- 2nd IMA Nonlinearity and Coherent Structures, Institute of Mathematics and its Applications, Norwich, United Kingdom, 19-21 June 2017 https://ima.org.uk/2193/2nd-ima-conference-nonlinearity-coherent-structures/
- International Conference on Advancements in Nuclear Instrumentation Measurement Methods and their Applications, Liege, Belgium, 19-23 June 2017 http://www.animma.com/
- 19th IEEE International Conference on Dielectric Liquids (ICDL 2017), Manchester, United Kingdom, 25-29 June 2017 http://www.icdl2017.com
- 44th European Physical Society Conference on Plasma Physics (EPS), Belfast, Northern Ireland, UK, 26-30 June 2017 https://www.qub.ac.uk/sites/eps2017/

Know Our Colleagues

Mr. Kanubhai R Rathod joined IPR in 1998 as a Mechanical Draughtsman in the Institute's Drafting Section and was specifically assigned with the SST-1 Project. He worked extensively in SST-1 on PFC, ICRH, NBI, and Diagnostic systems preparing layouts, schematics, 2D models, assembly in Isometrics, composite drawings and also bills of materials and other CAD data to support all phases of assembly and fabrication. He received appreciation certificate from Godrej & Boyce. Ltd for work on 3D modeling of PFC (IDP, IPS, OPS) in 2005. Interface checking of all diagnostics for SST-1 machine was one of the notable works and so is his contribution in the recent Aditya upgrade for Diagnostics systems. He worked in deputation n international project CONCEPTUAL DESIGN OF JET ELM CONTROL COIL AND IN-VESSELCOMPONENTS-(Abingdon.UK.) . He contributed in ITER task on conceptual design study of the Multi-Purpose Deployer (MPD) and was also certified as DESIGNER ADVANCED (DESA) for ENOVIA by the ITER. He is up to date with latest software of his profession and presently uses CATIA-V5 R23 and

Mr. Kirit R. Vasava joined IPR in 1998 and held responsibilities as draughtsman in Drafting section. He is closely associated with SST-1 project since its commencement. In SST-1 project his duties were to generate CAD models and Engineering drawings and its interfaces with sub-systems as required by respective engineer/scientist in various platforms i.e. AUTOCAD, MDT, Inventor, CATIA etc. He is very enthusiastic in updating himself with new platforms available in drafting . He is keen to guide whomsoever interested with his expertise in the field of drafting and modelling. He encourages and helps colleagues at IPR in using free to use available software for small and day to day drawing. He worked at JET Culham Center, UK during Aug-Sep 2012 under JET ELM collaboration project.

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