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The Fourth State

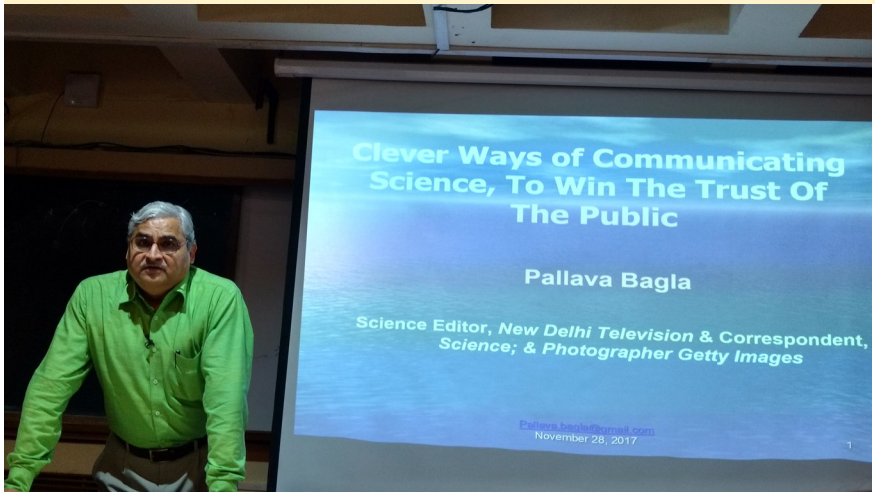
Newsletter of the Institute For Plasma Research, Gandhinagar, Gujarat (India)

IPR Newsletter Wishes All IPR'ites A Very Happy New Year !



Talk by Shri Pallava Bagla

Mr. Pallava Bagla, of New Delhi Television (NDTV) gave a popular talk entitled "*Clever Ways of Communicating Science, To Win The Trust Of The Public*" at IPR on 28th Nov, 2017. Shri Pallava Bagla is the Science Editor of NDTV (New Delhi Television) and Chief Correspondent (South Asia) for the American weekly science. In 2005, he was honored with the National Award for best science journalism in the print media by the Government of India, and in 2003 he was awarded for 'outstanding journalism' by the United Nations. He is also an acclaimed photographer and images taken by him have appeared in the National Geographic, Time, & Newsweek. He is also a contributing photographer for Corbis images. He has covered the Indian space and nuclear program for the past two decades.





(L) Shri Pallava Bagla delivering his talk. (R) Director IPR thanking the speaker.

IPR Visit by IITP-29 Participants from SAC Ahmedabad

The participants of the IITP-29 batch visited IPR on 1st December 2017. Around 135 recent recruits to SAC, lead by Shri. J. Ravisankar, Head, HRDD division, SAC, Ahmedabad were received at IPR by the Outreach Division and a brief introductory talk was given to them by Mr. K K Mohandas and Ms Hiral Joshi. The visitors were then taken to see the Basic lab, BETA machine, LVPD experiment, Aditya and SST-1 tokamaks. They were also shown the various exhibits in the technology park. Post lunch, the visitors were taken to FCIPT to introduce them to the various industrial and societal applications of plasma technologies.



Mr. K K Mohandas giving the introductory talk to the young visitors from SAC-ISRO



Mr. Rakesh Tanna explaining Aditya Tokamak to the visitors from SAC-ISRO



The ITTP-29 batch from SAC-ISRO during their IPR visit

IPR @ Conferences

Ms. Ranjana Gangradey attended the ICTF 2017 (International conference on Thin Films was organized at CSIR LAb, National Physical Laboratory, New , Delhi from 14-17 November 2017. The scientific advisor to Defense Minister, Dr Satish Reddy the Chief Guest along with President, Indian Vacuum Society, Shri Shri Krishna Gupta of BARC visited the IPR stall exhibiting technology of cryo-adsorption cryo-pump.





5th PFRC Meeting @ CPP-IPR

The 5th meeting of the Plasma & Fusion Research Committee (PFRC) of the Board of Research in Nuclear Sciences (BRNS) was held at CPP-IPR during 27-28 November, 2017. Prof. K. Goswami and Dr. Mayur Kakati from CPP were responsible for the local organization of the meeting at Guwahati. The following members attended the meeting Prof P I John (Chairman), Prof. Prabal Chattopadhyay, Shri. D. K. Dalal (Project Officer, BRNS), Shri. P K Atrey, Prof Amit Roy and Prof. Sangita (Scientific Secretary, BRNS), Dr. Ravi A V Kumar (Member Secretary, PFRC) and Dr. N Ramasubramanian. During this 2 day meeting, 22 new R&D projects with a budget allocation of ~ Rs.6.93 Crores as well as 21 ongoing projects were reviewed.

The Committee also decided to hold a “NFP-PFRC Vision Meeting” at Ahmedabad sometime in March 2018 to commemorate 10 years of the National Fusion Programme. This meeting will have invited talks in the major areas where R&D funding has been provided through NFP, with a selected PI who will consolidate the major works carried out in that area while a PC or area expert will present an overall view of the future requirements in those areas. The two group discussion sessions will consolidate the future roadmaps in the various areas. After the meeting, a document with the new listed areas of R&D will be published on the NFP and BRNS websites to attract possible PI's. There will also be a poster presentation for the PI's to showcase their work, and we will try to get selected work published in a peer reviewed journal.



5th PFRC Meeting in progress at CPP-IPR

IPR Staff Club - Games

Plasma Premier League 2017 (Football) (PPL-2017) was organized by IPR Staff Club in which total 4 teams participated, ie., “IPR Bootleggers”, “MF Scholars”, “White Walkers” and “Scholar's FC”. These teams were drawn from IPR employees, research scholars and ITER-India employees. The tournament was played at the IPR guest house ground after 6 pm on working days under lights. In the final match played on 22nd November 2017, **“Scholar's FC”** won the League and **“MF Scholars”** were the runner-up.

PPL-2017	Winners	Scholar's FC	Runners up	MF Scholars







Images from the Plasma Premier Football League 2017

Plasma Volleyball Tournament 2017 (PVT-2017) was organized by IPR Staff Club in which total 10 teams participated. The 10 teams ("TTP United 2K17", "PS Smashers", "ITER-Ion", "Fusion Warrior", "Toofani Smashers", "ITER Titans", "Lion Scholars", "Green Scholars", "MF Scholars" and "Shaolin Scholars") that took part included IPR employees, research scholars and ITER-India employees. A total of around 100 staff club members took part in the tournament. The tournament was played in IPR hostel volleyball court in the evening after 6 pm on working days under lights. In the final match played on 1st December 2017, **"TTP United 2K17"** won the tournament and the runner-up was **"Shaolin Scholars".**

PVT-2017	Winners	TTP United 2K17	Runners up	Shaolin Scholars




Images from the Plasma Volleyball Tournament 2017. (L) Winners **"TTP United 2K17"** and (R) Runners up **"Shaolin Scholars"**

Symposium on Plasma and Allied Technologies for a Better Tomorrow

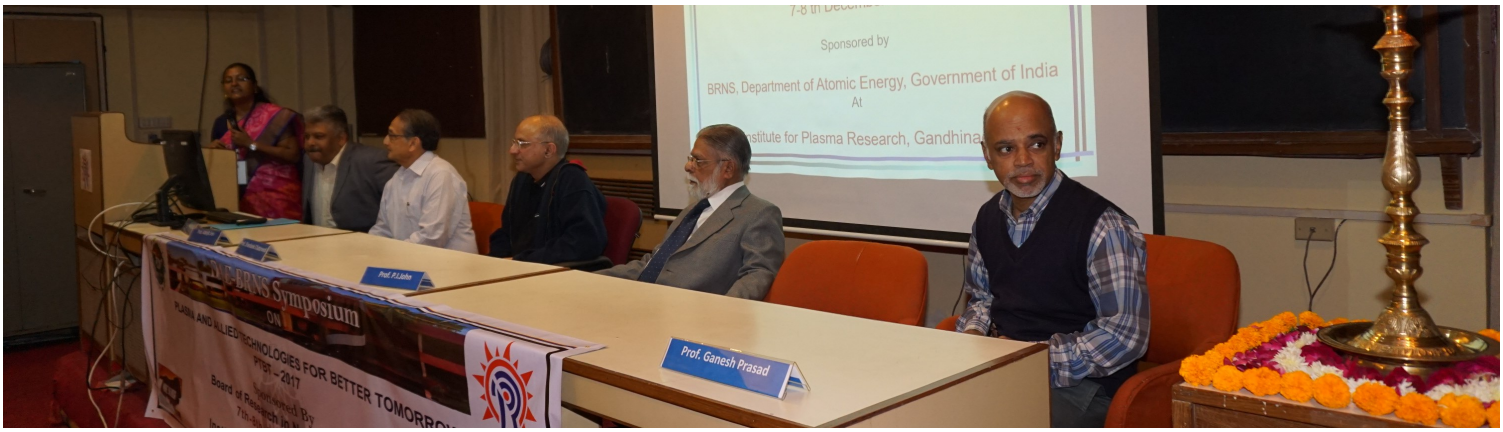
A two-day "DAE-BRNS Symposium on Plasma and Allied Technologies for Better Tomorrow" was organized by IPR during 7 -8 December, 2017 at IPR to showcase plasma and other technologies developed at IPR to enhance the quality of life.

The meeting was inaugurated by Prof. P.I. John, Prof. Abhijit Sen, Prof. Ganesh Prasad, Prof. S Mukherjee and Dr. Shashank Chaturvedi by lighting the traditional lamp. The meeting also felicitated the FCIPT Division heads. There were 22 invited talks in this symposium and these presentations emphasized on societal and industrial applications *viz.,* health care, agriculture, food, water, waste management as well as funding opportunities for carrying out collaborative R&D in the areas of plasma applications. This symposium was attended by over 65 participants from academics and industry. This symposium will also help in meeting one of the main objectives of IPR which has a mandate to translate the R&D findings into tangible deliverables so as to reach the common people. This meeting also acted as a platform for not only disseminating green technologies, but also to fulfill the initiative of "Swachh Bharat Abhiyan". Dr. Jayanti Ravi, Health Commissioner, Gujarat State participated in the panel discussion on 8th December which was organized as part of the symposium.





(L-R) Prof John lighting the lamp to inaugurate the symposium, Felicitation of Prof. Y C Saxena and Prof. Abhijit Sen



The dignitaries on the podium during the inaugural function.





Felicitation of founding members of FCIPT (L-R) Prof. P. I. John, Prof. Ganesh Prasad and prof. S. Mukherjee







(L-R) Dr. S. K. Nema, Dr. S. K. Ghorui, Mr. M. Suthar, Dr. Alphonsa Joseph and Dr. B.S. Sikarwar delivering their talks.








(L) Dr. Jayanti Ravi, Health Commissioner, Gujarat State being welcomed by Director IPR (R - Clockwise from top) Dr. C. Murali Krishna , Dr. Mukesh Ranjan, Dr. Abhijit Majumdar and Dr. M.S. Sridhar delivering their talks

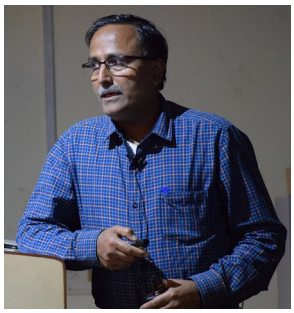






(L-R) Prof. Jhala, Mr. Aslam Moolji, Dr. Arun Sarma, Dr. P. K. Tiwari and Dr. Venkat Ramani delivering their talks







(L-R) Mr. R. Rane, Dr. S. Bhowmik , Dr. Suryakant Gupta, Dr. Nirav Jamnapara and Dr. Ravi Kumar delivering their talks.



Panel discussion in progress (L-R) Dr. S K Nema, Dr. Shashank Chaturvedi, Dr. Jayanti Ravi and Prof. P I John

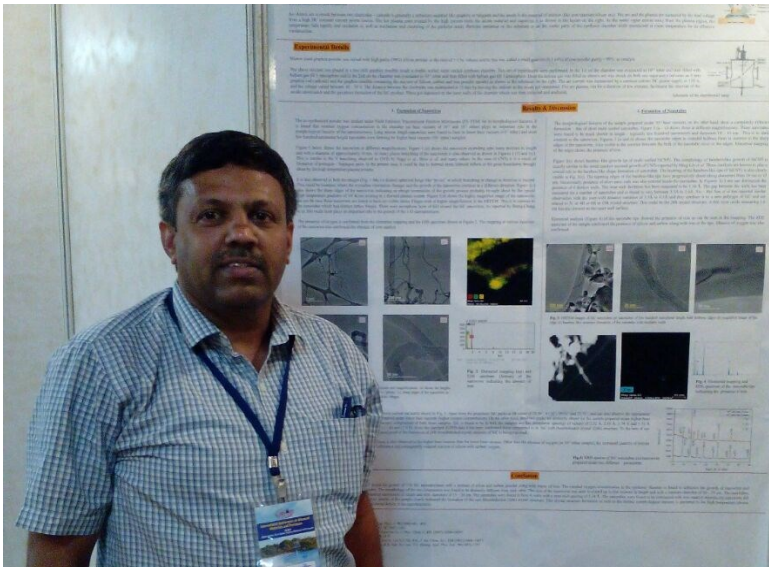
IPR participated in the ADMAT-2017 (International Conference on Advanced Materials and Processes) organized by Vikram Sarabhai Space Center (VSSC) at Trivandrum during 14-16 December, 2017. Apart from an invited talk entitled "*Plasma based surface modification techniques for high temperature applications in space and aerospace sector*" by Dr. Nirav Jamnapara and poster presentations by Dr. C Balasubramanian ("*Growth of silicon carbide nanowires and nanotubes by thermal arc plasma*") and Dr. Mukesh Ranjan, ("*Plasma process based PVD coatings, surface modifications and material sputtering yield measurement facilities*"). IPR also participated in the symposium exhibition, showcasing the work carried out by IPR in the areas of ion thruster simulations, plasma applications for space and cryo-pumps developed by IPR.



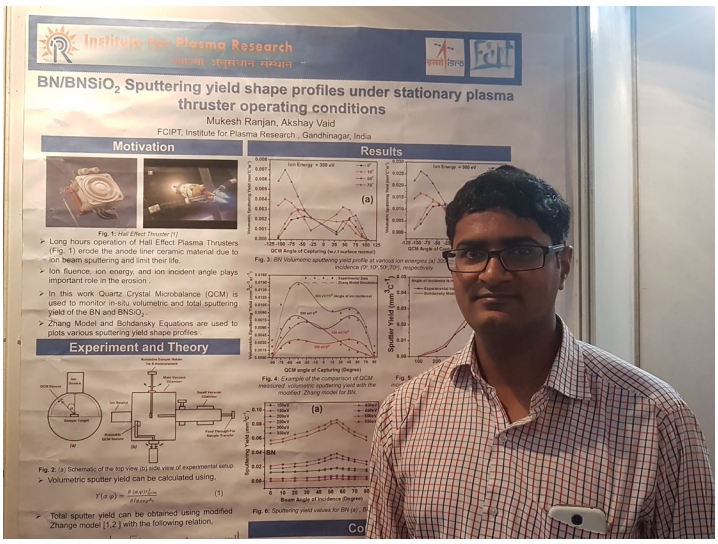


(L) The participants from IPR at the ADMAT-2017 (R) Visitors at IPR exhibition stall interacting with the IPR participants.





(L) Visitors at IPR exhibition stall interacting with the IPR participants. (R) Dr. Balasubramanian with his poster presentation





(L) Dr. Mukesh Ranjan with his poster presentation. (R) Dr. Nirav Jamnapara being felicitated after his invited talk.

Neutronics Laboratory : The first floor slab *i.e.,* terrace level slab has been cast on laboratory area side. Block work at ground floor is in progress. Generator hall side shielding RCC wall, lift shaft from 2.4 m to 3.6 m level shuttering and reinforcement work has almost been completed. **Laboratory & Auxiliary Building** : Construction of the Laboratory Building is in progress. Structural Steel painting, PIR wall paneling works are in currently in progress. Concrete densifier on flooring is completed at 7.75 m level and is in progress at the 15.5 m level. Dry wall partition at ground floor and 7.75 m level is in progress. Both the elevators have been installed and slow speed testing has been carried out. Packaged sewage treatment plant installation, as well as HVAC ducting and piping works are in progress.









Best Wishes !

IPR staff club arranged a farewell o 12th December, 2017 at IPR for **Shri. Shankara Joisa Y (Scientist-SG)** and **Shri. Natvarlal P. Sadariya (Tradesman-H)** who took voluntary retirement from IPR. Shri. Joisa Joined with IPR on 15th September 1983 and took retirement after 34 years of service, and Shri. Sadariya joined IPR on 13th February 1987 and took retirement after 30 years of service. On behalf of IPR, we wish both of them a healthy and fruitful retired life. The Director IPR presented them with mementos on behalf of the IPR Staff Club.



During the farewell meeting (L-R) Dr. Chenna Reddy, Shri Sankara Joisa, Shri.Natvarlal P. Sadariya and Director, IPR

IPR Annual Day

IPR Annual Day was celebrated with fun and frolic on 9th December, 2017 at IPR. Around 1000 people of IPR staff and family attended the function. Along with sumptuous evening snacks and high tea, there were various entertainment and cultural programmes by IPR staff and their family members. The OSMY award for 2017 was given to Mr. Mohmadparvez Mir, for his outstanding contributions towards store activities. Awards were also given by Annual Day Celebration Committee to IPR staff and their family members for the special achievements in different sectors like academics, sports, social activities, cultural activities etc. The cultural program was followed by dinner. A *Garba* program was also organized after the dinner, in which enthusiastic IPR staff and family members took part.



















Images from the IPR Annual Day









Images from the IPR Annual Day

OSMY Award 2017

Mr. Mohmadparvez Mir, Office Clerk – A of the IPR Stores Section, was awarded the "*Outstanding Staff Member of the Year*" (OSMY) award for the year 2017 for his outstanding work in the stores section. The award was presented to him by Director, IPR during the IPR annual day. On behalf of IPR, we congratulate Mr. Mir for the receipt of this award.





Mr. Parvez Mir receiving the OSMY award from Director, IPR

IPR @ 25th National Children's Science Congress

IPR participated in the science exhibition organized by GUJCOST on the occasion of the 25th National Children's Science Congress at the Science City, Ahmedabad during 27-31 December, 2017. The exhibition was inaugurated by the Chief Minister of Gujarat, Shri Vijay Rupani who also visited the IPR stall and interacted with the IPR staff. The IPR team, led by Ms. Chhaya Chavda had several working exhibits as well as static models.





(L) Ms. Chhaya Chavda explaining the plasma pyrolysis system to Shri Vijay Rupani, Hon. Chief Minister, Gujarat State.





(L) Shri Vijay Rupani, Hon. Chief Minister, Gujarat State at the IPR stall. (R) IPR stall being set up.





(L) IPR staff who participated in the exhibition (R) Video of Hon. Chief Minister of Gujrat visiting IPR stall

Past Events @ IPR

- ***Ms. Bhumika Thakur,*** Institute for Plasma Research, Gandhinagar, gave a talk on "*A study of the dynamics of delay coupled nonlinear oscillators and some model applications*" on 21st November 2017
- ***Dr. Payal H. Pandit,*** Institute for Plasma Research, Gandhinagar, gave a talk on "*Design and development of NIR Spectroscopy System for Aditya-U tokamak and plasma parameter measurements in an ECR ion source deuterium plasma using spectroscopy*" on 22nd November 2017
- ***Mr. Pallava Bagla,*** Science Editor, New Delhi Television (NDTV), gave a talk on "*Clever Ways of Communicating Science, To Win The Trust Of The Public*" on 28th November 2017 (Colloquium # 279)
- ***Mr. Vishal Jain,*** Institute for Plasma Research, Gandhinagar, gave a talk on "*Investigations in to the Design of Power Supplies for Generation of Non-thermal and Thermal Plasma in Air*" on 6th December 2017
- ***DAE-BRNS Symposium on Plasma and Allied Technologies for Better Tomorrow***, Institute for Plasma Research, Gandhinagar, 7-8th December 2017
- ***Prof. Swadesh M Mahajan,*** University of Texas at Austin, Texas, U.S.A., gave a talk on "*Understanding "Residual" energy transport in the H-mode Pedestal Future of Nuclear fusion via Tokamaks*" on 12th December 2017
- ***Dr. Ritu Dey,*** Institute for Plasma Research, Gandhinagar, gave a talk on "*Studies of neutral particle behaviour using DEGAS2 code and analysis of edge plasma parameters with UEDGE code in Aditya tokamak plasma*" on 15th December 2017

Upcoming Events

- IPR-National Science Day (NSD-2018), Institute for Plasma Research, Gandhinagar, 20-21 January 2018
- Workshop on Current and Emerging Methods for Optimizing Safety and Efficiency in Nuclear Decommissioning, Institute for Energy Technology (IFE), Sarpsborg, Norway, 7-9 February 2018. https://www.ife.no/en/ife/arrangement/workshop-on-current-and-emerging-methods-for-optimising-safety-and-efficiency-in-nuclear-decommissioning

Know Our Colleagues



Mr. A. E. Harvey joined the Institute in 1999 as Assistant Administrative Officer. Initially he was looking after General Administration Department which included monitoring and supervising various contracts like Security, Transport, Canteen, Housekeeping, landscaping, Foreign deputation cases etc. Later on in 2003 he was assigned the Establishment Section with responsibilities on Leave, Loans & Advances, LTC, Increments, NOC for Passport, Service Matters, Medical, Telephone, etc. Mr. Harvey has been supervising administrative sections dealing with the Recruitment & Review, Apprentice engagement, IPR CHSS (Medical), Telephone, Reception, Dispatch (Post & Courier), Identity Card and Access Control System besides having independent charges on legal matters of IPR and handling RTI matters right from the Acts' inception in 2005. Mr. Harvey is Nodal Officer for Right to Information Act online portal by DOPT and also the Nodal Officer for LIMBS – Legal Information and Management and Briefing System by Ministry of Law.

Mr. Paul D. Christian, Engineer- SF, joined IPR in August 1999. He looked after project electrical works and carried out many campus development related electrical works from concept to completion though tendering process. He also attended to the Utility Electrical Maintenance works of the entire IPR campus including the internal telephone system. He was engaged in executing electrical works for buildings for accommodation , offices and facilities like hostels, Guest House, FCIPT, ITER-India and additional offices. Mr. Paul pursued higher studies during 2014-2016 and obtained Master of Engineering degree in Electrical Power Systems in 2016 from KSV University, Gandhinagar. After ME, he resumed duties with the Infrastructure (New Buildings) division and executed electrical works for the Laboratory & Auxiliary Buildings at IPR. Mr Paul was then internally transferred to the Ultra High Voltage Systems Division (UHVSD) where he has been tasked with the development of Ultra High Voltage Power Supply System.



The IPR Newsletter Team

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