



संकल्प

Newsletter

For private circulation only

CSIR - IIP

Year 2016 | July-September | No. 52

An in-house bulletin of
CSIR - INDIAN INSTITUTE OF PETROLEUM, Dehradun

75TH CSIR FOUNDATION DAY

CSIR-Indian Institute of Petroleum celebrated the 75th CSIR Foundation Day on 30th September, 2016. The main function was held at Dr. Lovraj Kumar Auditorium. Mr Sanjiv Singh, Director (Refineries), IOCL was the Chief Guest on this occasion.



75th CSIR Foundation Day at the Institute: Dignitaries on the dais

Dr Ram A Vishwakarma, Director, CSIR-IIP, while welcoming the Chief Guest, spoke about the principles behind the creation of the Council of Scientific & Industrial Research in 1942. He said that the creation of the CSIR was the



Dr Ram A Vishwakarma, Director, welcomes the Chief Guest

foresightedness of our leaders like Pt. Jawahar Lal Nehru. A blueprint for India's development, with scientific policy and industrial policy at its core, was created by our illustrious leaders, which helped the country to take a strong path towards self-development. We feel proud and privileged to celebrate this day, especially as our Council President is none other than the Hon'ble PM himself. CSIR is a research

A word from the Director...

What a quarter gone by – historic in every sense. Two outstanding awards – the CSIR Technology Award for the wax plant at Numaligarh and the inaugural MOPNG Award for our Benzene recovery unit at Reliance. I thank the EIL, NRL and Reliance for the faith and trust they have bestowed on our scientists and technology.



It was an outstanding seminar held in August to re-emphasise the role of translational research for commercialising research. The deliberation from an international audience was a rich learning experience; the panel discussion was indeed a great finale to the seminar.

We celebrated the CSIR foundation day with none other than Mr Sanjiv Singh, Director (Refineries), Indian Oil Corporation as the Chief Guest. He has challenged our scientists to meet the expectations of the industry in terms of energy efficiency, higher demand, diversification, renewables and to survive with future fuel specifications.

Finally, on the last day of the quarter the Institute bid farewell to its chief architect Dr M O Garg who rebuilt the Institute to reach such glorious heights over 12 and a half years providing an extraordinary leadership. The staff and scientists thank him for his untiring efforts and sincere dedication, and wish him a glorious future and great health.

I thank all the stakeholders and friends for our unparalleled achievements.

• Dr R A Vishwakarma

institution with a wide variety of research areas. This institution has made it possible for our own ideas and dreams to prosper. The CSIR Foundation Day is celebrated in all its 37 laboratories. He also underlined that the CSIR-IIP deals with an important sector, i.e., petroleum & hydrocarbons, which has helped bring the nation to a strong position today. It gives all of us a sense of great achievement.



Dr M O Garg introduces the Chief Guest

Dr M O Garg, Scientist-H/Outstanding Scientist & Ex-Director, CSIR-IIP, introduced the Chief Guest and said that we celebrate this occasion to feel proud of the achievements of the CSIR. Dr Garg outlined the importance of taking basic research-to-translational research-to-commercialization. Mentioning further, he said that IOCL is one of the

largest refineries of India, and that Mr Singh has held important positions in his organization.



The Chief Guest delivers his CSIR Foundation Day speech

The Chief Guest, Mr Sanjiv Singh, while extending his congratulations to all on the occasion, talked about the 'Oil & Gas Scenario in the World' & looked back at the events that led to the creation of refineries such as the IOCL. He talked about the relationship between the CSIR-IIP and IOCL and lauded the inputs provided by the CSIR-IIP through its training programmes for the oil industry personnel.

He talked about the changes taking place in the field and emphasized that we have to build our capacity to produce our own products. He remarked that in coming years China and India will have similar patterns of usage of energy. He said that oil and gas sector cannot wait too long for achieving efficiency. It has to be done here and now. He cited the example of the co-operation that the CSIR-IIP and the IOCL have shared in terms of imparting training and said that it is necessary since there is a large demand for skilled operation. Talking about the importance of right decisions, he said that development of the right kind of guidance is also necessary. Science can help in this. He stressed that since requirements of energy will change tomorrow, refineries will have to be extremely flexible. Consumption is dependent upon GDP. What changes will there be in future cannot be forecast since things are changing fast like change-over from CNG to LNG. Then, there is the question of development of crude oil & its supply. India has been

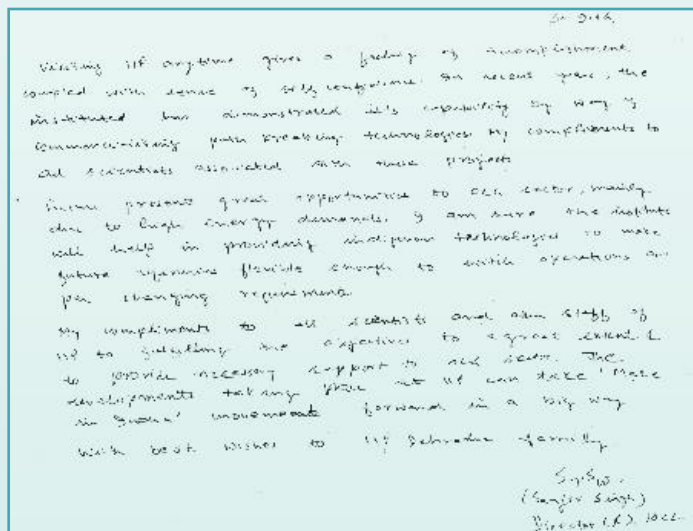
aggressive in the sector of refining capacity. But the global gas consumption will improve, and so it will be in India. Therefore, there are the options of petrochemicals, chemicals and gas before us, of which gas is very important. The Chief Guest also underlined the importance of commercialization and said that it cannot be ignored as it should be our ultimate goal. He praised the CSIR-IIP by saying that it has done a great job and referred to the potential of hydrogen production technology for which we can build a whole new refinery. He concluded by saying that the opportunities are tremendous and that our strength lies in future growth. Tomorrow is very bright.

Mr M C Ratori, Sr. Hindi Officer, CSIR-IIP, compered the function. Dr D C Pandey, Chairman, Celebrations Committee, also graced the dais.

The employees who had retired in the last year were honoured with a shawl, a *samman patra* and a memento while the services of the employees having completed 25 years of service were recognized by way of presenting mementoes to them.

Mrs. Sushila Singhal, Controller of Administration, proposed a vote of thanks.

As a sequel to the programme, the Chief Guest also planted a tree in the CSIR-IIP premises.



Comments of Mr Sanjiv Singh in the CSIR-IIP Visitors' Book

CONGRATULATIONS!

CSIR-IIP EARNS HONOUR ONCE AGAIN!

TECHNOLOGY AWARD TO THE CSIR-IIP

The Institute had another reason to celebrate for being given recognition for its scientific and technological contributions in the form of the CSIR Technology Award 2016 on the "Development of Wax De-oiling Technology and its Commercialization at the Numaligarh Refinery"

under the category of "Physical Sciences including Engineering" from the Council of Scientific and Industrial Research. The award carries a cash prize, a plaque and a citation. The award was given jointly to the CSIR-IIP, the Engineers India Ltd., New Delhi and Numaligarh Refinery Ltd., Numaligarh.



The shield and the plaque of the CSIR-Technology Award

The award was given away at the CSIR Foundation Day function on 26th September, 2016, organized at Vigyan Bhavan, New Delhi. It was presented to the team members from the Institute, the EIL and the NRL by Dr Harsh Vardhan, Hon'ble Union Minister for Science and Technology and Earth Sciences and Vice-President, Council of Scientific & Industrial Research (CSIR), and Hon'ble Union Minister of State for Science and Technology and Earth Sciences, Mr Y S Chowdhary at Vigyan Bhawan, New Delhi.

The CSIR-IIP team responsible for the Institute's new-found honour included Dr M O Garg, Dr S M Nanoti, Dr Manoj Srivastava, Dr Sunil Kumar, Mr Manoj Kumar Thapliyal, Mr G C Bahuguna, Mr N K Rawat, Mr Rajesh Kumar Sharma, Mr Gokul Prasad & Mrs Deepika Chandra (D/o Late Mr U C Agarwal). The CSIR also acknowledged the contribution of the NRL & EIL teams in the development of this technology. Mr P Padmanabhan, NRL and Mr S K Handa, EIL, represented them at the award ceremony.

The CSIR-IIP family proudly acknowledges this honour, and is grateful to the CSIR for giving it yet another occasion to



Dr Harsh Vardhan and Mr Y S Chowdhary conferring the award on the CSIR-IIP, EIL & the NRL teams. Dr Girish Sahni, DG-CSIR is also seen

celebrate. The Institute felicitates all the team members, expressing "hats off" to their efforts.

SYMPOSIUM ON 'TRANSLATIONAL RESEARCH FOR GLOBAL COMPETITIVENESS OF INDIAN HYDROCARBON INDUSTRY', AUGUST 8-9, 2016

With the current emphasis of the government to Invent, Innovate and Make In India, focussed translational research has now taken centre stage. In this context, a two-day symposium entitled "Translational Research for Global Competitiveness of Indian Hydrocarbon Industry" was held during 8th-9th August, 2016 at the CSIR-Indian Institute of Petroleum, Dehradun.

The Chief Guest of the function was Dr S J Chopra, Chancellor, University of Petroleum & Energy Studies (UPES), Dehradun and the Guest of Honour was Professor Paul Webley, University of Melbourne, Australia.

Firstly, Dr S M Nanoti, Chief Scientist, CSIR-IIP, introduced the Guest of Honour and gave a brief about the symposium. He told how the Institute had developed a number of



Inauguration of the symposium by Dr S J Chopra



Dr S M Nanoti giving introductory remarks



Dr Ram A Vishwakarma delivers his welcome address

information package to engineering and finally implementation. He said that Dr M O Garg, Scientist-H (Outstanding Scientist), Ex. DG-CSIR and Ex-Director, CSIR-IIP has nurtured the CSIR-IIP and brought the Institute to high peaks of success. Every year a new feather was added to the Institute's cap under his guidance.

Professor Paul Webley expressed his views about the hydrocarbon industry.



Prof Paul Webley

technologies and commercialized them in all the refineries of India as well as abroad. On the Prime Minister's vision of emphasis on 'Make in India', this symposium is organized to collect new ideas for the hydrocarbon industry.

The welcome address was given by Dr R A Vishwakarma, Director, CSIR-IIP. He said the CSIR-Indian Institute of Petroleum has always been in the forefront in developing and commercializing cutting-edge technologies. Right from the 70's, we have shown how a three-way collaboration between a CSIR laboratory, an engineering company and the industry can lead to focussed translational research converting lab data to technology

While inaugurating the symposium, the Chief Guest Dr S J Chopra emphasized on energy efficiency. He stressed upon the collaboration between the academia and the institutions, to ensure that we get new talent and achieve success in the area of research, essential for developing new technologies.



Dr S J Chopra speaks



Dr M O Garg at the symposium

The Indian hydrocarbon industry has steadily grown to become the 3rd largest in the world today. The opening of the economy in the 90's also brought in the competition from private and international companies. This, in turn, challenged the Indian research organizations and labs in the industry besides those in the government to compete globally to commercialize their technologies. The need to overcome this formidable challenge has been instrumental in evolving focussed translational research involving industry as a partner; this subsequently led to successful commercialization of several technologies, some of these for the first time in the world.

The symposium was in the form of invited lectures from eminent scientists and engineers from India, United States of America (USA) and Australia. The Symposium was sponsored by the Oil and Natural Gas Corporation Ltd., GAIL (India) Ltd., the HPCL-Mittal Energy Ltd. & the Numaligarh Refinery Ltd.

The lectures delivered by speakers included: *"Advances in Adsorption Technology for the Oil and Gas Industry"* by Prof P A Webley (University of Melbourne, Australia); *"Translational research at the CSIR-IIP: A new star on the Horizon of Reliance Industries Ltd."* by Mr D M Katre (RIL, India); *"Desalination at the Jamnagar Refinery"* by Dr Sanjeev Katti (RIL); *"Energy Efficiency improvements and process intensification for multi-component distillations"* by Dr R Agarwal (Purdue University, USA); *"R&DME-A holistic approach for the introduction of a new fuel"* by Dr Jim Patel (CSIRO, Australia); *"Innovative Technology for Waste-to-fuel conversion"* by Dr L Narsiman (Shell R&D); *"Concept of Commercial Operation – A Thought on Make in India"* by Mr S R Balvalli (Technip, India) and *"Fruits of Research: Strategies for linking R&D Efforts to Technology Development and Commercialization"* by Dr M O Garg (CSIR-IIP). After all these lectures a Brainstorming Session on

expectations from the CSIR-IIP for the future was organized, followed by a feedback session from the industry participants and their expectations in the future from the CSIR-IIP. They gave thought-provoking remarks.

The symposium was attended by a large number of participants from various organizations like the ONGC, Reliance, Shell (R&D), IOCL, BPCL (R&D), NRL, EIL (R&D), HMEL, GAIL, MECON, Technip, CBRI, UPES etc. It is expected that the outcome of this symposium will lead to significant motivation for carrying out translational research for making Indian hydrocarbon industry globally competitive.

MoU's SIGNED

- Non-disclosure Agreement with M/s Clariant Corporation, USA and GE India Technology Centre Pvt. Ltd., Bangalore, on 'Testing of Fisher Tropsch Catalyst', August 22, 2016
- MoU with the Manipal University, Jaipur for academic collaboration, August 29, 2016
- MoU with the InsPIRE Network for Environment, New Delhi for 'Preparation of Third National Communication (TNC) and other new information to the UNFCCC', September 19, 2016

RESEARCH ACTIVITIES

Sponsored Projects Taken Up

- Low-temperature partial oxidation of methane to synthesis gas over nano-crystalline Ni/CeO₂ catalysts
- Preparation of the third national communication (TNC) and other new information to the UNFCCC project: greenhouse gas inventory for the TNC and biennial update reports II & III entitled: 'Energy sector: petroleum products and road transport sector inventory'
- Homogeneity & miscibility test as per IS:13656
- Low-temperature partial oxidation of methane to synthesis gas over nano-crystalline Ni/CeO₂ catalysts
- Scale-up studies for development of catalysts for production of syngas from CO₂ & methane
- Development and evaluation of catalyst for production of DME from dehydration of methanol

RESEARCH OUTPUT

Papers Published

- Hierarchical microspheres of MoS₂ nano-sheets: efficient and regenerative adsorbents for removal of water-soluble dyes, *Anushka Tina Massey, Rashi Gusain, Sangita Kumari* and *OP Khatri*, Ind. Eng. Chem.

Res., **55**(26), 7124-7131, July 2016

- Facile synthesis of high-surface-area mesoporous MgO with excellent high-temperature CO₂ adsorption potential, *Aamir Hanif, Soumen Dasgupta* and *Anshu Nanoti*, Ind. Eng. Chem. Res., **55**(29), 8070-8078, July 2016
- Ni/CeO₂ catalysts for methane partial oxidation: Synthesis-driven structural and catalytic effects, *G Pantaleo, V La Parola, F Deganello, R K Singha, Rajaram Bal* and *A M Venezia*, Applied Catalysis B: Environmental, **189**, 233-241, July 2016
- Deactivation of hydrotreating catalyst by metals in resin and asphaltene parts of heavy oil and residues, *K Kohli, R Prajapati, S K Maity, M Sahu* and *M O Garg*, Fuel, **175**, 264-273, July 2016
- Magnetically separable chicken feather: a bio-polymer-based heterogeneous catalyst for aerobic oxidation of organic substrates, *Patnam Padma Latha, Mukesh Bhatt, Raghuvir Singh, Sandeep Saran* and *Suman L Jai*, RSC Advances, **6**(65) 60888-60895, July 2016
- Adsorption Equilibria of Propylene and Propane on Zeolites and Prediction of Their Binary Adsorption with the Ideal Adsorbed Solution Theory, *Swapnil Divekar, Anshu Nanoti, Soumen Dasgupta, Aarti, Rekha Chauhan, Pushpa Gupta, M O Garg, S P Singh* and *I M Mishra*, J. Chem. Eng. Data, **61**(7), 2629-2637, July 2016
- Synthesis of high coke-resistant Ni nano-particles-supported MgO/ZnO catalyst for reforming of methane with carbon dioxide, *Rajib Kumar Singha, Aditya Yadav, Ayush Agrawal, Astha Shukla, Shubhadeep Adak, Takehiko Sasaki* and *Rajaram Bal*, Applied Catalysis B: Environmental, **191** 165-178, August 2016
- Investigation of lignin bio-degradation by *Trabulsiella SP.* isolated from termite gut, *Sunil Kumar Suman, Manisha Dhawaria, Deependra Tripathi, Vimee Raturi, D K Adhikari* and *Pankaj K Kanaujia*, International Bio-deterioration & Bio-degradation, **112**, 12-17, August 2016
- Photo-excitation of neodymium doped TiO₂ for improved performance in dye-sensitized solar cells, *Laveena P D'Souza, R Shwetharani, Vipin Amoli, C A N Fernando, A K Sinha* and *R Geetha Balakrishna*, Materials & Design, **104**, 346-354, August 2016
- Efficient approach for simultaneous CO and H₂ production via photo-reduction of CO₂ with water over copper nano-particles-loaded TiO₂, *Nikita Singhal*,

- Asgar Ali, Alexander Vorontsov, Chandrashekar Pendem and Umesh Kumar, Applied Catalysis A: General, 523, 107-117, August 2016*
- Slow pyrolysis of prot, alkali and dealkaline lignins for production of chemicals, *Bijoy Biswas, Rawel Singh, Jitendra Kumar, Adnan Ali Khan, Bhavya B Krishna, and Thallada Bhaskar, Bioresource Technology, 213, 319-326, August 2016*
 - Microbial assisted High-impact Polystyrene (HIPS) degradation, *Arya J Mohan, Vini C Shekhar, Thallada Bhaskar and K Madhavan Nampoothiri, Bioresource Technology, 213, 204-207, August 2016*
 - Studies of synergy between metal-support interfaces and selective hydrogenation of HMF to DMF in water, *Reena Goyal, Bipul Sarkar, Arijit Bag, Nazia Siddiqui, Deepa Dumbre, Nishita Lucas, Suresh Kumar Bhargava and Ankur Bordoloi, Journal of Catalysis, 340, 248-260, August 2016*
 - Renewable waste rice husk-grafted oxo-vanadium catalyst for oxidation of tertiary amines to N-oxides, *Vineeta Panwar, Ankushi Bansal, S S Ray and Suman L Jain, RSC Advances, 6(75), 71550-71556, August 2016*
 - Covalently Grafted Graphene Oxide/Poly(Cn-acrylate) Nano-composites by Surface-initiated ATRP: An efficient anti-friction, anti-wear, and pour-point-depressant lubricating additive in oil media, *Arvind Kumar, Babita Behera, G D Thakre and S S Ray, Industrial & Engineering Chemistry Research, 55(31), 8491-8500, August 2016*
 - Promoting effect of CeO₂ and MgO for CO₂ reforming of methane over Ni-ZnO catalyst, *Rajib K Singha, Aditya Yadav, Astha Shukla, Zafar Iqbal, Chandrashekar Pendem, Konathala Sivakumar and Rajaram Bal, Chemistry Select, 1(12), 3075–3085, 2016*
 - An experimental study on *Jatropha*-derived alternative aviation fuel sprays from simplex swirl atomizer, *D Sivakumar, S K Vankeswaram, R. Sakthikumar, B N Raghunandan, J T C Hu and A K Sinha, Fuel, 179, 36-44, September 2016*
 - Embedded iron nano-particles in carbon nano-granules for direct synthesis of lower olefins, *Indrajit K Ghosh, Asgar Ali, Appasaheb Dukare, Umesh Kumar and Ankur Bordoloi, Chemistry Select, 1(15), 4736–4741 September 2016*
 - Heat transfer augmentation using twisted tape inserts: A review, *Varun, M O Garg, Himanshu Nautiyal, Sourabh Khurana and M K Shukla, Renewable and Sustainable Energy Reviews, 63, 193-225, September 2016*
 - Energy-efficient methane tri-reforming for synthesis gas production over highly coke-resistant nano-crystalline Ni–ZrO₂ catalyst, *Rajib Kumar Singha, Astha Shukla, Aditya Yadav, Shubhadeep Adak, Zafar Iqbal, Nazia Siddiqui and Rajaram Bal, Applied Energy, 178, 110-125, September 2016*
 - Facile synthesis of crystalline nano-porous Mg₃(PO₄)₂ and its application to aerobic oxidation of alcohols, *Suman Debnath, Sandeep K Saxena and N Viswanadham, Catalysis Communications, 84, 129-133, September 2016*
 - Alkylamine-functionalized hexagonal boron nitride nanoplatelets as a novel material for reduction of friction and wear, *Sangita Kumari, O P Sharma and O P Khatri, Physical Chemistry Chemical Physics, 18(33), 22879-22888, September 2016*
 - Micro-tribological properties of a spin-coated thin film of 1-butyl-3-(propyltrimethoxysilane) imidazolium bis(mandelato) borate ionic liquid, *Paramjeet S Bakshi and Rashi Gusain, O P Khatri, RSC Advances, 6(82), 78296-78302, September 2016*
 - Environmental bio-technology, *Joydeep Mukherjee and Debashish Ghosh, Chemical Engineering & Technology, 39(9), 1592, September, 2016*
 - Co-pyrolysis of *Jatropha curcas* seed cake and bituminous coal: Product pattern analysis, *D V Naik, Ranjan Kumar, Deependra Tripathi, Raghuvir Singh and Pankaj K Kanaujia, Journal of Analytical and Applied Pyrolysis, 121, 360-368, September 2016*
- Chapter(s) Published in Book(s)**
- Aviation Bio-fuels Through Lipid Hydroprocessing, *A K Sinha, Mohit Anand, Saleem A Farooqui, Bio-fuels for Aviation- Feedstocks, Technology and Implementation, Chapter 5, 85–108, 2016, Edited by Christopher Chuck, the Academic Press*
 - Graphene–Semiconductor Hybrid Photocatalysts and Their Application in Solar Fuel Production, *Pawan Kumar, Anurag Kumar, Chetan Joshi, Rabah Boukherroub, Suman L Jain, Advanced 2D Materials, Chapter 9, 353–386, 2016, Print ISBN: 9781119242499, Editor(s): Ashutosh Tiwari, Mikael Syväjärvi, Published by John Wiley & Sons*
- Patent(s) Sealed Abroad**
- An improved process and catalyst for single-step conversion of glycerol to acrylic acid, *Rajaram Bal, Bipul Sarkar, Rajib Kumar Singha, Chandrashekar Pendem, Shankha Shubhra Acharyya and Shilpi Ghosh, USA, Patent No. 9409847, dt. 09.08.2016*

- A process for production of tertiary butyl phenols, *Praveen Kumar Khatri, Suman L Jain and Indrajit Kumar Ghosh*, USA, Patent No. 9434668, dt. 06.09.2016

Patent(s) Sealed in India

- A vapour-phase adsorption process for desulphurization of transportation fuel, *Madhukar Onkarnath Garg, Amar Nath Goswami, Anshu Nanoti, Pushpa Gupta, Soumen Dasgupta, Vasudha Agnihotri, Yogendra Kumar Sharma, Tumula Venkateshwar Rao, Ivar Martin Dhal, Arne Karlsson, Michael Wilhelm Stocker, Elisabeth Tangstad and Vistad Ornulv Bjornsson*, Patent No. 274230, dt. 15.07.2016
- An improved preparation procedure for noble metal, three way, auto-exhaust catalyst, *Vijai Singh Dangwal, Amar Kumar Jain and Lakshmi Datt Sharma*, Patent No. 274547, dt. 28.07.2016
- A composition of bio-degradable gear oil, *Arun Kumar Singh and Aruna Chamoli*, Patent No. 275171, dt. 26.08.2016
- A process for conversion of low-cost and high FFA oils to bio-diesel, *Savita Kaul, Neeraj Atray and Ajay Bhatnagar*, Patent No. 275889, dt. 30.09.2016

Patent(s) Filed Abroad

- An improved process for production of γ -verolactone by hydrogenation of levulinic acid over Pt-hydrotalcite catalyst, *Rajaram Bal, Chandrashekar Pendem, Ankur Bordoloi, Laxmi Narayan Sivakumar Konthala, Manoj Kumar and Sandeep Saran*, USA, Application No. 15/207,312, dt. 11.07.2016
- Ni-Pt-ZrO₂ nano-crystalline oxide catalyst and process thereof useful for production of syngas by combining oxy-dry reforming of natural gas, *Rajaram Bal, Bipul Sarkar, Reena Goyal, Ankur Bordoloi, Chandrashekar Pendem and Laxmi Narayan Sivakumar Konthala*, USA, Application No. 15/233572, dt. 10.08.2016

Patent(s) Filed in India

- H₂ and Bio-Fuel Production from Renewable Feedstocks, *A K Sinha, Mohit Anand, Saleem Akthar Farooqui, Rakesh Kumar, R K Joshi, Rohit Kumar and Aditya Rai*, Application No. 201611023588, dt. 11.07.2016,

TRAINING PROGRAMMES ORGANIZED

Programmes on Petroleum Refining Technology

- For the Chemical Engineers of the Indian Oil Corporation Ltd., (IOCL), July 18–September 2, 2016
- For the Executives of the IOCL, New Delhi, September 19–30, 2016

- For the Executives of M/s Bharat Petroleum Corporation Ltd., (BPCL), Mumbai, September 19–October 7, 2016



Faculty & trainees of the training programme on Petroleum Refining Technology for the Executives of the IOCL, September 19-30, 2016



Faculty & trainees of the training programme on Petroleum Refining Technology for the Executives of the BPCL, September 19-October 7, 2016

Other Programmes

- Programme on 'Operation and Maintenance of CFR Engines' for the Executives of Different Refineries, August 29–September 9, 201

EXCHANGE OF KNOWLEDGE

Papers Presented in Conferences/Seminars/Symposia

20th Refinery Technology Meet (RTM), CHT, Gandhinagar, September 7-9, 2016

- Improved hydroprocessing using novel sulphur-resistant Pt@SOD incorporated inside conventional sulphided catalyst, *M G Sibi, Aditya Rai, Mohit Anand, Saleem A Farooqui and A K Sinha*
- A process for simultaneous production of high-purity benzene and US-grade gasoline from C₆ heart-cut of FCC gasoline, *M O Garg, Sunil Kumar, Prasenjit Ghosh, S M Nanoti and BR Nautiyal*
- Novel energy-efficient process for BTX processing: A techno-economic study, *Sunil Kumar, P Ghosh, Shreya Gupta, S M Nanoti and M O Garg*

- Partially open-loop S-I cycle to produce hydrogen from H₂S: A Joint Initiative of the CSIR-Indian Institute of Petroleum (CSIR-IIP) and the ONGC Energy Centre (OEC) to establish the proof of concept, *Subham Paul, Ankur Bordoloi, M O Garg, D Parvatalu and S Banerjee*
- Preparation of viscosity-grade bitumen from the bottom-of-the-barrel, *Anand Singh, Kamal Kumar, Manoj Srivastava and M O Garg*

National Conference on Alternate Energy Resources, Environment Protection and Global growth (NCAERG2016), DIT University, Dehradun, September 9-10, 2016

- Modified bio-lubricants based on environment-friendly raw materials, *Jyoti Porwal, Suman L Jain, Praveen K Khatri, Babita Behera, Harish Chandra and Savita Kaul*
- Fatty acids-modified phosphazene as multi-functional fuel additives, *Praveen K Khatri, Mounika Ailab, Raj K Singh and Suman L Jain*

Colloquia and Talks

- Prof. Ignacio Melia Cabrera, European Bio-energy Research Institute, School of Engineering and Applied Science, Aston University, UK, '*The role of materials engineering and reactor concepts in the development of heterogeneously catalysed (thermo-)chemical processes*', September 16, 2016

DISTINGUISHED VISITORS

- Mr Sanjay Goyal, Metal Oil Corporation, New Delhi, July 4, 2016.
- Mr Nilanjan Maiti, Sr. Manager-Product Management, M/s Fuchs Lubricants (India) Pvt. Ltd., Kolkata, July 8, 2016
- Mr Surendra Pratap, Director, Petroleum Conservation Research Association, New Delhi, July 13-14, 2016
- Mr R K Kashyap, Executive Director and Mr Sunil Haldar, Sr. Manager, GAIL, July 18-20, 2016
- Dr Yoginder Pal Sachdeva, Mr Bimal Bhagai and Dr Sanjay Mishra, M/s HPL Additives Limited, Faridabad, July 20, 2016.
- Mr Vivek Pandit, Director, M/s Abhitech Energycon Limited, Mumbai, July 21, 2016
- Mr V Ram, Director and Mr L Raghu Raman, Business Manager, M/s Sim Infosystems Private Ltd., Chennai, July 22, 2016
- Dr V Vijayabaskar, Chief Manager, M/s Balmer Lawrie & Co. Ltd., Manali, Chennai, August 4, 2016
- Mr Laxi Narasimhan, General Manager, M/s Shell India Markets Private Limited, Bangalore, August 8-9, 2016
- Mr Abhijit Sarkar, Sr. Manager, M/s Hindustan

Petroleum Corporation Limited, Mumbai, August 16, 2016

- Dr D Paul Singh, Chief Technical Officer, M/s Air Science Inc., Canada, August 22, 2016
- Mr Suresh Chandra Khetan, General Manager (R&D), Mrs Renu Sinha, Sr. Manager and Mr Arun Shukla, Chief Manager, GAIL India Limited, NOIDA, August 23-24, 2016
- Mr Manish Pandey, Director & CEO, M/s SynBiotech Consulting Pvt. Ltd., Mumbai, August 24, 2016
- Mr P K Singh, Scientist-E and Mr Vaibhav Verma, Scientist-D, Fuel Cell Division, NMRL, Ambernath, September 2, 2016
- Prof. Ignacio Melia Cabrera, European Bio-energy Research Institute, School of Engineering and Applied Science, Aston University, UK, September 15-16, 2016
- Dr Robert Berry and Mr Sudhakar Sagi, Aston University, UK, September 28-29, 2016

PARTICIPATION IN CONFERENCES/SEMINARS/WORKSHOPS/ BRAINSTORMING SESSIONS/ DISCUSSIONS

- Dr M O Garg, Scientist-H (Outstanding Scientist), Dr S M Nanoti, Chief Scientist, Dr A K Sinha, Principal Scientist, Dr Sunil Kumar, Senior Scientist, Mr Anand Singh, Principal Technical Officer and Mr. Subham Paul, Scientist, *20th Refinery Technology Meet (RTM)*, Gandhinagar, September 7-9, 2016
- Dr M O Garg, Scientist-H (Outstanding Scientist), Dr N Viswanadham and Dr Manoj Srivastava, Principal Scientists, *4th International Conference-Refining India-2016*, organized by PTQ-IDS, New Delhi, September 19-20, 2016

43rd RESEARCH COUNCIL MEETING

The CSIR-IIP organized its 43rd Research Council Meeting at CSIR-Science Centre, New Delhi, on July 25, 2016



The 43rd Research Council Meeting in progress

The following members were present : Prof D V Khakhar, Chairman; Members Prof I M Mishra, Mr Nilkanth S Avhad, Dr Vijayamohan K Pillai and Dr Ram A Vishwakarma, Director, CSIR-IIP, Dehradun, Mr A K Jain, Chief Scientist, Secretary, RC, CSIR-IIP.

IMPORTANT MEETINGS ATTENDED

Various meetings attended by Dr M O Garg, Scientist-H (Outstanding Scientist)

- Sub Group Meeting of the Traditional Hydrocarbon Feedstocks as part of the Task Forces of Alternative Feedstocks at the IOC Corporate Office, New Delhi, July 7, 2016
- Meeting of the Committee to Review the Purchase Rules at CSIR Headquarters, New Delhi, July 11, 2016
- Meeting of the Task Force on Alternate Feedstocks of the Ministry of Chemicals and Fertilizers, Govt. of India, New Delhi, July 12, 2016
- Meeting of the Screening-cum-Evaluation Committee at the Nagpur University, July 13, 2016
- Meeting at NITI Aayog, New Delhi, July 14, 2016
- 3rd meeting of the committee to revisit/review the existing CSRAP Rules, 2001, CSIR Headquarters, New Delhi, August 3, 2016
- 4th meeting of the committee to revisit/review the existing CSRAP Rules, 2001 including issues relating to Gr III, II & I (Tech & Support Staff), CSIR Headquarters, New Delhi, August 11, 2016
- 78th Meeting of the Scientific Advisory Committee (SAC) on Hydrocarbons, Ministry of Petroleum & Natural Gas at the Bhabha Chamber, Scope Complex, New Delhi, August 16, 2016
- Safety Award Committee meeting for the year 2014-15, OISD, NOIDA, August 16, 2016
- With Dr S M Nanoti, Chief Scientist and Mr S K Ganguly, Senior Principal Scientist, the meeting on trial runs at Merox Unit at ORPIC Refinery, Sohar, Oman, August 19-25, 2016
- Meeting of the Expert Group on Methanol & DME for Research & Development at INSA, New Delhi and Oil Industry Safety Awards Committee Meeting at the Oil Industry Safety Directorate, New Delhi, September 5, 2016
- 20th Refinery Technology Meet (RTM) organized by the CHT & IOCL, Gandhinagar, Gujarat, September 7-9, 2016
- Meeting on "Formation of Consortium to Demonstrate S-I Cycle", CSIR Science Centre, New Delhi, September

16, 2016

- BPCL Research Council Meeting, Mumbai, September 21, 2016

HRD/AWARENESS EVENTS

Programmes at the CSIR-HRDC, Ghaziabad

- Mr Madhuranjan Pandey, Section Officer, 'Training Programme on Taxation Laws: Direct and Indirect Taxes', July 7-8, 2016
- Mr Kalyan Singh, Senior Technical Officer and Mr Satya Niketan Yadav, Technical Officer, 'Training Programme on Capacity Building for Technical Officers', July 25-29, 2016
- Dr Jasvinder Singh, Principal Technical Officer and Mr Jagdish Kumar, Sr Technical Officer, Training programme on the 'Art of Public Speaking and Technical Writing Workshop', August 29-31, 2016
- Mr Surender Kumar, Administrative Officer, training programme on 'Managerial Effectiveness for Common Cadre Officers', September 15-17, 2016

Other Programmes

- Ms Sheetal Bandhu, SRF, 'Workshop on development and improvement of strains for bi-molecule production', ICGEB campus, New Delhi, September 8-10, 2016
- Mr Mukesh Sharma, Assistant Executive Engineer and Sarvanand Tiwari, Assistant Engineer, CSIR Platinum Jubilee Workshop on 'Advances on Repair and Rehabilitation of Concrete Structures', CSIR-CBRI, Roorkee, September 22-23, 2016

INTERNATIONAL VISITS

- Dr Thallada Bhaskar, Principal Scientist and Mr Jitendra Kumar, Technical Assistant, visited Spain for Factory Acceptance Test (FAT) under procurement order of "Continuous Hydrolysis Unit" from M/s PID Engineering & Technology, Spain, July 17-24, 2016
- Dr M O Garg, Scientist-H (Outstanding Scientist), Dr S M Nanoti, Chief Scientist and Mr S K Ganguly, Senior Principal Scientist, visited the ORPIC Refinery at Sohar, Oman, to provide technical support for successful commercialization of Thoxcat ES Catalyst developed by the CSIR-IIP, August 20-24, 2016
- Dr Ajay K Gupta, Principal Technical Officer, visited The Netherlands to attend ISO/TC 28 meeting at Delft, September 26-30, 2016

HONOURS & AWARDS

The Institute received the Best Innovation in R&D Award

under the caption “Energy Performance and Innovation Award” for the “Technology for simultaneous production of US-grade gasoline and high-purity benzene from unprocessed C₆ heart-cut of FCC gasoline” from the Ministry of Petroleum & Natural Gas and the Centre for High Technology. It was awarded at the Inaugural Session of the 20th Refinery Technology Meet on 7th September, 2016 at Gandhinagar, Gujarat.



Innovation Award Shield

The CSIR-IIP team included Dr M O Garg, Scientist-H (Outstanding Scientist), Dr S M Nanoti, Chief Scientist and Dr Sunil Kumar, Scientist. The Reliance Industries Ltd. was represented by Dr A V Sapre, Group President (Research & Technology).



CSIR-IIP team receiving the Innovation Award along with the RIL representative

EXPOSURE OF STUDENTS TO OUR SCIENTIFIC INTELLECT & INFRASTRUCTURE

Visits of students/different groups of students/cadets/trainers/trainees/faculty members etc. from the following institutions/ colleges/regions/states

- Cadets of the Rashtriya Indian Military College (RIMC), Dehradun, July 29, 2016
- Students of the Graphic Era University, Dehradun, August 12, 2016
- B.Tech. students from Sree Chitra Thirunal College of Engineering (SCTCE), Thiruvananthapuram, Kerala, along with faculty members, September 19, 2016
- 48 students of M.Sc. Microbiology and Bio-technology Departments, Shri A N Patel PG Institute, Sardarganj, Gujarat, along with faculty members, September 27, 2016



Students being shown around and being given a taste of the practical research work

PhD/D Phil DEGREE AWARDS

- Mr Pawan Kumar was awarded PhD degree by the Academy of Scientific & Innovative Research (AcSIR) on his thesis entitled 'Novel Catalytic Systems for Photo-reduction of Carbon-di-oxide to Fuels and Chemicals', done under the supervision of Dr Suman Lata Jain, Senior Scientist.

सीएसआइआर-आइआइपी स्टाफ क्लब की गतिविधियाँ

- 48वें शांति स्वरूप भटनागर स्मृति टूर्नामेंट (इनडोर)-ज़ोनल अंतिम स्पर्धा (19-21 अगस्त, 2016) में प्रतिभागिता

सीएसआइआर-राष्ट्रीय समुद्र विज्ञान संस्थान (CSIR-NIO), गोवा में आयोजित 48वें शांति स्वरूप भटनागर टूर्नामेंट (SSBMT-Indoors-Zonal), 19-21 अगस्त, 2016 में सीएसआइआर-भापेस स्टाफ क्लब के तत्वावधान में सीएसआइआर-भापेस से कुल 15 खिलाड़ियों ने विभिन्न प्रतियोगिताओं यथा - बैडमिंटन, टेबल टेनिस, ब्रिज, शतरंज एवं कैरम बोर्ड - में भाग लिया। इनमें से 6 खिलाड़ियों ने फाइनल में जगह बनाई। फाइनल के लिए स्थान बनाने वाले खिलाड़ियों के नाम इस प्रकार हैं :-

टेबल टेनिस (एकल) : डॉ० सौमेन दासगुप्ता एवं श्री एस सी भट्ट



टूर्नामेंट में संस्थान का दल

टेबल टेनिस (टीम) : डॉ0 सौमेन दासगुप्ता, श्री एस सी भट्ट एवं श्री एन के रावत

बैडमिंटन (टीम) : श्री बी बी डिमरी, मो. फरीद एवं श्री टीकाराम भट्ट

- संस्थान के कर्मचारियों के बच्चों के लिए स्वतंत्रता दिवस के अवसर पर एक चित्रकला प्रतियोगिता तथा एक निबंध प्रतियोगिता का आयोजन आइ आइ पी स्टाफ क्लब के तत्वावधान में दिनांक 5 अगस्त, 2015 को किया गया, जिनमें समग्रतः लगभग 150 बच्चों ने भाग लिया।

स्वतंत्रता दिवस समारोह, 15 अगस्त, 2016

- स्वतंत्रता दिवस समारोह का आयोजन 15 अगस्त, 2016 को किया गया। मुख्य भवन के प्रांगण में ध्वजारोहण के पश्चात संस्थान के प्रेक्षागृह में विस्तृत कार्यक्रम का आयोजन किया गया, जिसमें डॉ एम ओ गर्ग, वैज्ञानिक-एच (उत्कृष्ट वैज्ञानिक) ने बीते वर्ष की उपलब्धियों की चर्चा की। पारंपरिक रूप से केंद्रीय



विद्यालय, भापेसं के बच्चों ने उत्तम सांस्कृतिक प्रस्तुतियाँ दीं। इस अवसर पर डॉ गर्ग ने भापेसं स्टाफ क्लब द्वारा दिनांक 5 अगस्त, 2016 को आयोजित चित्रकला व निबंध प्रतियोगिताओं के विजेताओं, संस्थान के कर्मचारियों के उत्तम अंक पाने वाले बच्चों तथा केंद्रीय विद्यालय, भापेसं के हाईस्कूल व इंटरमीडिएट कक्षाओं के सर्वश्रेष्ठ विद्यार्थियों को भी छात्रवृत्तियाँ प्रदान कीं एवं उन्हें पुरस्कृत भी किया।



केंद्रीय विद्यालय, भापेसं द्वारा सांस्कृतिक प्रस्तुति

VISHWAKARMA POOJA

The annual celebration of the Vishwakarma Pooja was organized on September 17, 2016 in the Institute premises.



Dr M O Garg performing Viishwakarma Pooja

राजभाषा-संबंधी गतिविधियाँ

• 53वीं आंतरिक हिंदी वैज्ञानिक संगोष्ठी, 26 अगस्त, 2016

संगोष्ठी का उद्घाटन करते हुए डॉ एस एम नानोटी, मुख्य वैज्ञानिक ने कहा कि अबाध गति से आयोजित इन वैज्ञानिक संगोष्ठियों का लाभ यह है कि एक तो इससे वैज्ञानिकों को हिंदी में अपना शोधपत्र प्रस्तुत करने का अवसर मिलता है, दूसरा इससे हमारे हिंदी में लिखे गए वैज्ञानिक लेखों में वृद्धि होती है। उन्होंने वैज्ञानिकों का आह्वान किया कि वे राजभाषा अनुभाग द्वारा प्रकाशित चर्चित हिंदी पत्रिका 'विकल्प' के महत्वपूर्ण विशेषांकों को पढ़ें तथा रचनाओं के माध्यम से इसमें अपना सार्थक योगदान दें। संगोष्ठियों के इस महत्वपूर्ण मंच से युवा शोधार्थियों को यथासंभव लाभ उठाना चाहिए

संगोष्ठी का संचालन करते हुए संयोजक एवं राजभाषा अनुभाग के प्रभारी डॉ दिनेश चंद्र चमोला ने कहा कि तकनीकी विषयों की हिंदी व शब्दावली हमें इसलिए कठिन लगती है क्योंकि उसका उपयोग हम कम से कम करते हैं। भाषाएँ व शब्द विषयों से नहीं, बल्कि प्रयोग व व्यवहार से जीवित रहते हैं। हमें भरसक प्रयास करना चाहिए कि हम मौलिक रूप से हिंदी में लेखन करें। साथ ही साथ यह भी जानें कि सामान्य व पारिभाषिक शब्दों में अंतर क्या है। हिंदी में विज्ञान लेखन राष्ट्रीय महत्व का कार्य है।

इसके उपरांत क्रमशः 'अपशिष्ट जल से फीनॉल का अपनयन', डॉ बी आर. नौटियाल, 'संचरण इलेक्ट्रॉन सूक्ष्मदर्शी', डॉ मनोज कुमार, 'नीट कर्तन तैल हेतु जैव-निम्नीकरणीय एस्टर्स का विकास', डॉ. पी नागेंद्रम्मा तथा 'उन्नत जेट ईंधन प्रौद्योगिकी हेतु राष्ट्रीय सहायता संघ', डॉ. देवाशीष घोष ने संदर्भित प्रस्तुतियाँ दीं। अंत में धन्यवाद प्रस्ताव प्रशासन नियंत्रक श्रीमती सुशीला सिंघल ने ज्ञापित किया।

• हिंदी माह समापन समारोह, 28 सितंबर, 2016

सीएसआइआर-भारतीय पेट्रोलियम संस्थान, देहरादून में सितंबर माह-भर राजभाषा अनुभाग द्वारा चलाई गई गतिविधियों के बाद डॉ. लवराज प्रेक्षागृह में दिनांक 28.09.2016 को हिंदी माह समापन समारोह का आयोजन किया गया, जिसमें मुख्य अतिथि के रूप में डॉ एम आर सकलानी, भूतपूर्व उपनिदेशक (राजभाषा), मुख्यालय प्रशासन, आयकर निदेशालय, दिल्ली, पूर्व सचिव, उत्तराखंड हिंदी



हिंदी माह समापन समारोह का उद्घाटन

निदेशालय तथा पूर्व निदेशक, उत्तराखंड भाषा संस्थान सुशोभित थे। कार्यक्रम का प्रारंभ करते हुए श्री एम सी रतूड़ी, वरिष्ठ हिंदी अधिकारी ने मुख्य अतिथि का संक्षिप्त परिचय दिया। इसके उपरांत डॉ. एस एम नानोटी, निदेशक ने मुख्य अतिथि का स्वागत करते हुए कहा कि हिंदी में ओज अधिक है, उसका भविष्य उज्ज्वल है, वह अधिक हृदयों को स्पर्श करती है तथा उसका प्रभाव भी अधिक है।



डॉ एम आर सकलानी

इसके उपरांत डॉ एम आर सकलानी ने राजभाषा हिंदी की पृष्ठभूमि पर प्रकाश डालते हुए कहा कि भाषा के कई स्वरूप हैं, जैसे राजभाषा, संपर्क भाषा, राज्य भाषा आदि। स्वभाषा के विकास से ही स्वदेश की उन्नति हो सकती है। मुख्य अतिथि ने हिंदी की सांविधानिक स्थिति, उपबंधों आदि को स्पष्ट किया और कहा कि हिंदी राजभाषा के रूप में सर्वसम्मति से स्वीकार की गई है। हमारा केंद्रीय कार्यालयों में प्रशासनिक हिंदी से संबंध है और इसके लिए भारत सरकार का राजभाषा विभाग एक दिशा-निर्देशक का कार्य करता है। डॉ सकलानी ने हिंदी परिप्रेक्ष्य में अंग्रेजी के इतिहास पर भी चर्चा की। अब दक्षिण भारत में भी हिंदी स्वीकार की जा रही है। बल्कि हिंदी के विकास में अहिंदी भाषी क्षेत्रों का बड़ा योगदान रहा है। हिंदी विश्वस्तर पर भी पढ़ी और पढ़ाई जा रही है। हिंदी की देवनागरी लिपि सबसे अधिक वैज्ञानिक व तकनीकी है। मुख्य अतिथि का सुझाव था कि विशेषतः 'क' क्षेत्र में स्थित होने के कारण हमें 100 प्रतिशत कार्य हिंदी में करने के लक्ष्य को यदि प्राप्त करना है तो शब्दावली के लिए नहीं रुकना चाहिए। हिंदी किसी धर्म या संप्रदाय विशेष की भाषा नहीं है। इसे सम्मान दें और अपनी मानसिकता सुधारें। यह हमारे जीवन-मूल्यों और गौरव से जुड़ी है और विशेषतः

भारतीय पेट्रोलियम संस्थान जैसे वैज्ञानिक संस्थानों के लिए जब वैज्ञानिक शब्दावली उपलब्ध है, तब हमें अपने प्रयासों को निरंतर जारी रखना चाहिए।

कार्यक्रम के अंतिम भाग में मुख्य अतिथि ने हिंदी माह समापन समारोह के अवसर पर आयोजित विभिन्न प्रतियोगिताओं के विजेताओं तथा सरकारी कामकाज में मूल रूप से सर्वाधिक हिंदी प्रयोग करने वाले कर्मचारियों को पुरस्कृत भी किया। अंततः श्रीमती सुशीला सिंघल, प्रशासन नियंत्रक ने धन्यवाद ज्ञापित किया।

संस्थान-परिवार के समाचार

(क) संस्थान-परिवार से विदाई

(i) अधिवर्षिता पर / सेवा-विस्तारोपरांत सेवा-निवृत्ति

31 जुलाई, 2016

- श्री महिपाल, वरिष्ठ तकनीकी अधिकारी
- श्री विजय कुमार, सहायक—।

31 अगस्त, 2016

- लोक बहादुर, चाय / कॉफी निर्माता

30 सितंबर, 2016

- डॉ एम ओ गर्ग, वैज्ञानिक-एच (उत्कृष्ट वैज्ञानिक)
- श्रीमती सुशीला सिंघल, प्रशासन नियंत्रक
- श्री सी आर श्रीवास्तव, प्रधान तकनीकी अधिकारी (अधीक्षण इंजीनियर)
- श्री विजय सिंह, प्रयोगशाला सहायक

भावपूर्ण विदाई!

(ii) तकनीकी त्यागपत्र

डॉ दिनेश चन्द्र चमोला, वरिष्ठ हिंदी अधिकारी (एस जी) 08.09.2016

भावपूर्ण विदाई!

(ख) संस्थान परिवार में वृद्धि

(i) नई नियुक्तियाँ

- डॉ इन्दु शेखर, वैज्ञानिक 02.08.2016
स्वागत!

(ग) पदोन्नतियाँ

वरिष्ठ हिंदी अधिकारी से वरिष्ठ हिंदी अधिकारी (एस जी)

- डॉ दिनेश चन्द्र चमोला 09.06.2016
- सहायक (सामान्य) ग्रेड-II से सहायक (सामान्य) ग्रेड-I
श्री जस्सू कुमार 09.08.2016

बधाइयाँ!

असामयिक निधन पर हार्दिक शोक

श्री हरि सिंह, सुरक्षा गार्ड

जन्म : 15.10.1962

संस्थान में कार्यग्रहण : 21.07.1995

निधन : 18.09.2016

ईश्वर उनकी आत्मा को शांति प्रदान करे।



Published by : Director, CSIR-Indian Institute of Petroleum, Dehradun-248005, INDIA

Phone No. : +91-135-2660205, Fax : +91-135-2660098, E-mail: director@iip.res.in, Website : www.iip.res.in

Publication Team : Dr D C Pandey and M C Ratori Assistance : V S Rawat

Designed & Printed at : Saraswati Press, Dehradun, Ph. : 0135-2726694, 9897903096