



IIChE NEWSLETTER 2021

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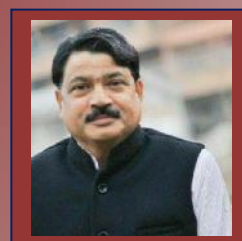
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President's Corner



Dear Members,

I begin with hearty greetings and gratitude to my fellow Council Members for providing me an opportunity to serve as President. I will look forward to a year of all round dynamism and vigour in IIChE which would enable us all to carry forward the plans and programmes we have already initiated and at the same time help us set new goals for IIChE to attain a new height. With active support of our members and expert advice from our seniors, I have no doubt that IIChE will continue to stride ahead.

The year 2020 brought unending misfortunes for the humanity in the form of Covid-19 pandemic. Although we have ushered in 2021 with new hopes and optimism, we are certainly not out of woods yet. Rather, at the time of writing this column, the new UK strain of Corona virus is proving to be a matter of grave anxiety in the Western world, triggering bouts of lockdowns in many countries. Nonetheless, with the rollout of vaccines against the virus already in the process in a few countries, including India, we have to keep our fingers crossed and hope for better days ahead.

As far as IIChE is concerned, notwithstanding the grim realities around, one has reasons to feel reassured and upbeat. The Institute managed to make commendable



accomplishments in the face of many adversities. Several digital initiatives were launched afresh, which attained impressive success. Along with the new drives, most of the customary activities and programmes went on during the past year even if in a somewhat different format. For the current year, the 'To-do-list' is being finalised and we are looking forward to a number of new initiatives, to be launched in the near future.

I would like to share my thoughts on some of the important issues with the IIChE Members which will need to be dealt with in the coming months.

OIP-2021: In continuation of the OSIP-2020, held last year, a four-week online internship programme (OIP-2021) will be conducted this year also during February-March 2021 for the UG students of Chemical Engineering and allied disciplines. The subjects to be covered will include Petroleum Refinery Engineering, Petrochemicals, Chemical Process Technology, 6-sigma (Yellow Belt) and Biochemical Engineering. Like the previous season, eminent academics and top industry personnel will be the subject experts and resource persons. Personnel from IIChE's Organisational Members will also join the initiative by offering expertise in their respective fields. Details about the program are available on the website of the Institute. Registration for the programme is underway now.

Entrepreneurship Cell: Entrepreneurship has attained a significant connotation in the present global scenario with Covid-19 wreaking havoc on economies across the globe. As jobs are few and far between, youths need to develop their own creative and innovative means for starting ventures of their own. To address this situation in its own small way, IIChE is working on plans to start an Entrepreneurship Development Cell to train Chemical Engineering students and young professionals for initiating start-ups. The Cell, to be operated in collaboration with industry, will be based at the Institute Headquarters in Kolkata. Hopefully, we will be able to come out with the details within the next few months.

Certificate Courses: IIChE is in the process of introducing Certificate Courses in collaboration with the industry in areas of engineering consultancy, industrial software and R&D. The courses are being designed for both the students as well as professionals. The nitty-gritty is being worked out presently. Soon we will finalise the program and the information will be available on the IIChE website.

Regional Centres: For IIChE, Regional Centres (RCs) are the most important organ to execute its programmes and fulfil its objectives. Presently IIChE has 42 RCs across the country. While certain states have more than one RCs, some other states still do not have even one. This year, our target will be to ensure that there is at least one RC of IIChE in every state. Additionally, we are considering opening RCs abroad. Initially, the effort will be to set up centres in ASEAN as well as SAARC countries, such as, Nepal and Bangladesh and other neighbouring countries, for instance, Dubai.

In recent years, a number of steps have been taken to synchronise the functioning of RCs with that of the IIChE Headquarters. Unless there is an overall harmony across the board between the Headquarters and the RCs, it becomes difficult for IIChE to carry out its programmes in a coherent manner. One major move towards establishing an integrated and sustainable working system would be to introduce a common accounting procedure for all the RCs. This will be a priority for us in the current year, which could be initiated only with active cooperation of all the RCs. Some of the RCs, in fact, have already done that. We would expect that other RCs will



follow suit and become more vibrant.

Student Chapters: For the last few years, in particular, the Institute has been increasingly concentrating on its Student Chapters (168 at present) at Engineering Institutes, Colleges and Universities to provide meaningful guidance to the students and shape their career. For the present year, our aim will be to ensure presence of Student Chapters (SCs) in each of the engineering institutes and universities in India that have the faculty of Chemical Engineering and/or allied subjects. In this aspect, RCs have a very crucial role to play as the Student Chapters (SCs) operates under the guidance of the RCs in their respective areas. I request fellow Members in each of the RCs to take an initiative and ensure presence of SCs in all the academic institutes of repute coming under the purview of the concerned RC. As a matter of fact, our RCs have a rich pool of human resources. Some of the RCs already maintain close liaison with the SCs under their wing to undertake comprehensive skill enhancement programmes for the students. Such initiatives on behalf of IIChE should become more regular and widespread in the academic institutes to establish a wider presence and credibility of the Institute.

Membership Drive: Last but not the least – members are the mainstay of IIChE. It is largely through the Individual and Organisational Members that the Institute pursues its diverse activities and sustains itself as a non-profit organisation. Hence, IIChE needs a constant drive to enlarge its family by welcoming more and more Members in its fold. I request all our existing Members to make an ardent effort to motivate fellow Chemical Engineers to become a part of the IIChE fraternity. Equally important would be to have a greater number of Chemical Engineering establishments and academic institutes to join the Institute and be part of a mutually beneficial collaboration between them and IIChE. It is a collective responsibility for all of us to explore newer ideas and possibilities so that a greater number of professionals and organisations find IIChE as a worthy institution to be involved with. Constructive and practical inputs from the Members in this regard will be welcome. We should encourage non-chemical Engineers also to become member as Chemical Engineering has crossed all the boundaries and its application in all the fields is clearly visible nowadays. Membership drive, specially, in those states where we do not have any RC, particularly, in the North- East, Jammu & Kashmir, etc. should be encouraged.

Thanking you,

M.K. Jha

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OBITUARY

With profound grief, we announce the sad demise of our following Members:

Prof. M.N Biswas (LM 09728). The late Prof. Biswas was a member since 1990.

Prof. Shyamalendu Bandopadhyay (LM 03199). The late Prof. Bandopadhyay was a member since 1972.

Prof. A.K Biswas (LM 04880). The late Prof. Biswas was a member since 1977.

Mr. K. K. Das (LM 15059). The late Mr. Das was a member since 1997.

Prof. M. Bhagwanth Rao (LF 02784). The late Prof. Rao was a member since 1981.

Prof S Basu (LF 00795). The late Prof. Basu was a member since 1960.

Dr. K.K. Sarkar (LF 01692). The late Dr. Sarkar was a member since 1967.

We offer our heartfelt condolence to the bereaved families of our respected departed Members.



CHEMCON 2020



The 73rd Annual Session of Indian Institute of Chemical Engineers (IICHE), i.e., Indian Chemical Engineering Congress (CHEMCON 2020), was jointly organized by the Headquarters of IICHE and the Hyderabad Regional Centre of IICHE during 27 - 29 December 2020 through digital mode. The central theme for this year's CHEMCON was 'Exploring Recent Trends in Chemical Engineering'.

CHEMCON 2020 was inaugurated by Prof. K. Vijay Raghavan, Principal Scientific Adviser to the Government of India, who was the Chief Guest for the event. The Guests of Honours for the Inaugural Programme were Prof. V. V. Basava Rao, President, IICHE; Padma Shri Prof. G.D. Yadav, former President and former Vice Chancellor, ICT Mumbai; Prof. S. Venkateshwar, former President, IICHE and Shri. Ch. Satyanarayana, Chairman, Inventaa Industries Pvt. Ltd.

An impressive award presentation function was held following the inauguration. The most prestigious National Awards of IICHE, namely, Dr. B P Godrej Life Time Achievement Award was conferred upon Mr. P.K.N. Panicker, former President, IICHE as well as Chemical Industries Association, distinguished Chemical Engineer and a Project Consultant. Lala Shriram National Award for Leadership in Chemical Industry was conferred upon Mr. D.M. Butala, a Corporate Management Expert, Consulting Engineer and a Senior Member of IICHE, who has been associated with the Institute in many capacities over the years. Other awardees included Prof. Bishnupada Mandal, IIT Guwahati; Mr. Tarun Naiya, IIT ISM, Dhanbad; Mr. Dhawal Saxena, Blast Carbo Blocks Pvt. Ltd., Mumbai; Prof. S.H. Sonawane, NIT, Warangal; Dr. Sundergopal Sridhar, CSIR-Indian Institute of Chemical Technology, Hyderabad; Prof. V.C Srivastava, IIT, Roorkee; Dr. Vineet Aniya, CSIR-Indian Institute of Chemical Technology, Hyderabad; Dr. Akshay Modi, Indian Institute of Technology Bombay, Mumbai; and Dr. Babul Prasad, Ohio State University, Columbus, USA. The awardees delivered lectures which was enlightening for all the participants.



The award presentation was followed by three prestigious Memorial Lectures. **Dr. H.L. Roy Memorial Lecture** was delivered by Prof. Bala Subramaniam, University of Kansas (KU) USA; **Aker Powergas's Prof. N.R. Kamath & Mrs. Ruzena Kamath Memorial Lecture** was delivered by Dr. R.R. Sonde, Vice President, Thermax and **Inventaa C K Murthy Memorial Lecture** by Prof. Debangsu Bhattacharya, West Virginia University, USA.

Technical sessions were conducted for two days (27 and 28 December 2020) under seven separate titles in multiple areas of Chemical Engineering, i.e., i) Nanomaterials and Nanotechnology, Polymers & Composites, ii) Energy and Environment: Solar/Biomass/Fuel Cell/Hydrogen Energy/Li-ion Battery/Conventional and Non-conventional Energy, Wastewater Treatment, iii) Bio-process Engineering, Biomedical Engineering, Food Technology, iv) Petroleum Refining & Petrochemicals, v) Process Modelling, Stimulation & Optimization, vi) Green Chemistry and Industrial Chemistry and vii) Other areas of Chemical Engineering, like Advanced Separation Processes, Catalysis Process Intensification & Process Automation. Around 300 registrants participated in CHEMCON 2020. Twenty-two technical sessions were conducted, which were chaired by 44 renowned personalities.

There were two panel discussions, held on 'Atma Nirbhar Bharat: Role of Engineers on Indigenization' and 'Vocal for Local: A Necessity for the Country's Growth'. Mr. Praveen Saxena was the moderator for both the sessions. Thirteen distinguished panellists participated in the discussions.

The Dhirubhai Ambani Commemoration day, another leading event under the CHEMCON umbrella, was observed on 28 December. Dr. Renu Swarup, Secretary, Department of Biotechnology, Government of India was the Chief Guest on the occasion. She made a presentation on 'New Emerging Technologies & Tools: Driving the Bioeconomy Growth'. The Guests of Honours, who were present online, were Prof. V. V Basava Rao, and Padma Shri Prof. G. D. Yadav.

CHEMCON 2020 came to an end with the Valedictory Address by Prof. Georges Belfort, Member, US National Academy of Engineering. The Guests of Honours for the session were Shri Raj Nair, Chairman, Avalon Consulting Ltd. and Dr. K Sainath, Managing Director, Clair Engineers Pvt. Ltd. Chairpersons were Prof V.V. Basava Rao, Prof. M.V Rao, Vice President, IChE and Mr. Praveen Saxena, Vice President, IChE. The Valedictory Session concluded with Vote of Thanks, given by the two Organizing Secretaries, Dr. Avijit Ghosh and Dr. Sanjay Bhardwaj.

CHEMCON-2020 was sponsored by leading industry houses and institutions of India, namely, Reliance Industries Limited, which was the 'Gold Sponsor' and Bhagiradha Chemicals & Industries Limited, which was the 'Silver Sponsor'. Inventaa Industries Pvt. Ltd; Clair; Blast Carboblocks Pvt. Ltd; Emerson; Asita Engineering Consultants; Maathrusri Engineers; NFC; Photon Life Sciences; Resil; Excel Tech; Ulhas V. Parlikar were the other co-sponsors.



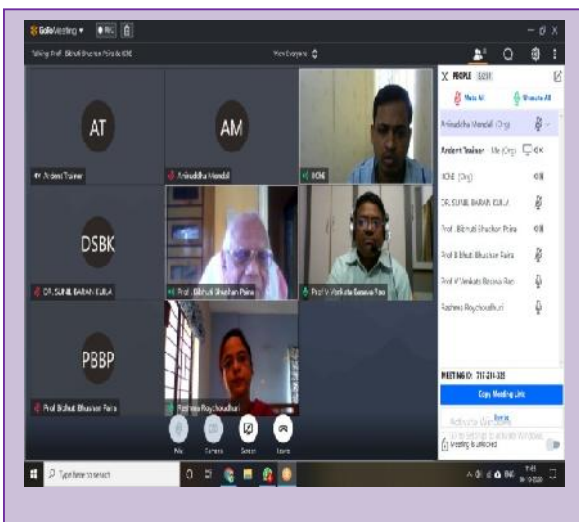
SCHEMCON 2020

Away from the customary format, the 16th Annual Session of SCHEMCON 2020 was organized by IIChE headquarters on 9 and 10 October 2020 in virtual mode due to the Covid-19 pandemic. The inauguration of the programme was marked by the address of the IIChE President, Prof. V. V. Basava Rao. The welcome address was delivered by the Guest of Honour, Mr. Biswanath Chattopadhyay, CEO, IVL Dhunseri Petrochem Industries Limited and Prof. G. D. Yadav, Past President, IIChE and former Vice Chancellor, ICT Mumbai.



The Chief Guest, Shri C.P. Gurnani, Chief Executive Officer and Managing Director, Tech Mahindra also spoke on the occasion. The event saw the launching of the IIChE app and the dynamic website of the Institute. The inaugural programme was also graced by Vice Presidents, Prof. M.V Rao, RVR & JC College of Engineering and Mr. P.K Saxena, Director & CEO Blast Carboblocks Pvt. Ltd. At the end of the inaugural function, vote of thanks was given by Dr. Avijit Ghosh, Honorary Secretary, IIChE, Assistant Professor, Heritage Institute of Technology, Kolkata and the Organising Secretary, SCHEMCON 2020.

Around 300 students participated in SCHEMCON 2020, many of whom presented papers in different sessions. There were 17 parallel technical sessions, two special sessions – on Covid-19 and on Emerging Trends on E-waste Management. The event also included one invited talk, two keynote addresses and one panel discussion and the M.P Chary Memorial Lecture. The end was marked by an award ceremony right after the valedictory session.



After the inaugural ceremony on 9 October 2020, 17 parallel Technical Sessions were conducted in the areas of Nanomaterial & Nanotechnology, Green & Sustainable Energy, Waste Management: Land/Water/Environment, Biochemical Engineering: Bioreactor, Biomedical Engineering, Process of Modeling, Stimulation & Optimization, Other Areas of Chemical Engineering: Advanced Separation Technologies, Catalysis & Reaction Engineering, Process Intensification, Food & Nutrition, Polymers & Composites, Petroleum Refining & Petrochemicals, Process Engineering Control & Automation. The



speakers who chaired and coordinated the Technical Sessions were: Prof.(Dr) Alpana Mahapatra, D J Sanghvi College of Engineering, Mumbai; Prof. Biswajit Mandal, HITH; Prof. Sunil Baran Kuila, HITH; Prof. S. K Gupta, HBTU, Kanpur; Prof. Monal Dutta, CIT, Uluberia; Prof. Sri Durga, OUCT; Prof. Amitava Bandopadhyay, Calcutta University; Prof. S. Ilaiyah, OUCT; Prof. Madhu Agarwal, MNIT Jaipur; Prof. R. Parthiban, SSN College of Engineering; Prof.(Dr). K. B. Radhakrishnan, SCT College of Engineering, Trivandrum; Dr. Deepshikha Datta, GMRIT; Dr. Somak Jyoti Sahu, HITH; Dr. Dwaipayan Sen, HITK; Jyothi Thati, OUCT; Prof. Abhoday Mallick, HIT Kolkata; Mr. Dhawal Saxena, Blast Carboblocks Pvt. Ltd; Prof. Bimal Das, NIT, Durgapur; Prof. Rajashimman, Annamalai University; Prof. Tarun Kumar Naiya, IIT, Dhanbad; Prof. Sutapa Roy, HITH; Prof. M. Mukunda Vani, Anurag University; Prof. Sanjib Barma, Calcutta University and Dr. Sujoy Bose Basantika Institute of Technology. The M.P Chary Memorial Lecture was chaired by Prof. Balasubramaniam, Anna University; Prof. Bishnupada Mandal, IIT Guwahati.

The Special Session on Covid-19 was chaired by Dr. T. L Prasad, BARC; Dr. C. Karthikeyan, Annamalai University and Dr. M. P. Jain, Retd. Scientist, BARC. Another Special Session on Emerging Trends on E-Waste Management had Prof. Saikat Maitra, Vice Chancellor, MAKAUT, WB, as the Chief Guest. Prof. T. K. Pariya, Director, School of Energy Science, MAKAUT was the Guest of Honour and Prof. B. B. Paira, Academic Advisor, MAKAUT was the Session Chair. Eminent Speakers present were Prof. R Roychoudhuri, Heritage Institute of Technology, Kolkata; Mr. B. Debnath, Split Site Scholar, Aston University and Mr. A. Potluri, Managing Director, Green Waves Environmental Solutions.

Dr. Sonal Majumdar, FDA, USA delivered an invited talk on 'Continuous Manufacturing –Key to Sustainable Manufacturing'. Globally renowned academic, Padma Bhushan Prof. Dr. J. B. Joshi, Emeritus Professor-J.C. Bose Fellow, delivered an illuminating lecture on 'Wealth Generation for India through Science and Technology'. It was followed by another educative lecture by Prof. Jayant Kumar Singh, IIT, Kanpur on 'Molecular Simulation: Past, Present & Future'.

A Panel Discussion was the next programme, for which Prof V.V. Basava Rao was the Chairperson and Mr. Praveen Saxena was the moderator. The theme of the discussion was 'Manufacturing Up-gradation by Artificial Intelligence'. The panelists comprised were Prof. V. K. Rattan, VC, GNA University; Dr. Sanjeev Katti, Director General Energy Centre ONGC ; Mr. Sushil Kumar, Past President IChE and Ex-Unit Head, RIL Dahej; Mr. R.G. Rajan, Ex-CMD, Rashtriya Chemicals & Fertilizers; Mr. Saurabh Srivastava, Google Research Center and Dr. U Kamachi Mudali, Ex-CMD, Heavy Water Board.

Mr. Dileep Thatte, National Institute of Standards and Technology (NIST), USA was the Chief Guest for the Valedictory Session. Guests of Honour were IChE Immediate Past President, Prof. S.V. Satyanarayana; Prof. V. S. R. K. Prasad, Director, IIPE, Visakhapatnam and IChE Past President, Mr. Shyam Bang. Prof. V.V. Basava Rao, and Prof. M. V. Rao were present for the award giving function.

During the valedictory sessions, names of the recipients for the IChE student awards (SCHEMCON 2019) were read out and the certificates of awards were displayed for the winners. The names of the winners from different Technical Sessions of SCHEMCON 2020 were also declared. The Valedictory Session came to an end with the Vote of Thanks, given by Dr. Avijit Ghosh.



IIChE FOUNDER'S DAY

The 132nd birth anniversary of Dr. H. L. Roy, the founding father of IIChE, was observed as the Founder's Day at the IIChE Headquarters with solemnity on 2 November 2020. As customary, Dr. H.L. Roy's bust at the Headquarters building was decked with flowers and garland with the Honorary Secretary, Dr. Avijit Ghosh; Chairman of the Calcutta Regional Centre (CRC), Prof. Chiranjib Bhattacharjee, Honorary Secretary of the CRC, Mr. Abhijit Mitra as well as the staff members of the Institute Headquarters paying floral tributes to him.

Unlike the other years, there was no physical gathering of Institute members for the occasion. Instead, to commemorate the Founder's Day, an online session was organised, which was graced by Prof. V.K. Srivastava, Past President, IIChE; IIChE President, Prof. V. V. Basava Rao; Vice Presidents, Prof. M.V. Rao and Mr. Praveen Saxena as well as Honorary Secretary, Dr. Avijit Ghosh.

Two distinguished speakers, Mr. D.M. Butala, Council Member and former Vice President, IIChE and Dr. S. Sridhar, Principal Scientist, IICT-Hyderabad presented enlightening lectures, respectively on 'Challenges in Chemical Engineering' and 'Innovative Chemical Engineering for Mitigation of Covid-19 and Provision of Safe Drinking Water'.

A few Regional Centres also observed the occasion online.

Please see Regional Centre Activity Reports

ONLINE INTERNSHIP PROGRAM 2021

Following resounding success of Online Summer Internship Program (OSIP 2020), conducted last year, the IIChE flagged off the next edition of the internship program, namely, **Online Summer Internship Program (OIP 2021)** on 15 February 2021 at 4 pm. To continue till June 2021, OIP will cover four subjects under the umbrella of Chemical Engineering, i.e., **Petroleum Engineering, Chemical Process Technology, 6-Sigma Yellow Belt and Biochemical Engineering**.

The inaugural program was graced by Chief Guest, Mr. Subhashendu Chatterjee, Whole-time Director, Haldia Petrochemicals Ltd., Kolkata; Guests of Honour, Prof. Gopal Mugeraya, NIT, Goa and Dr. Dhansukh M. Gandhi, Vice President, M&O, Lupin Ltd.; IIChE President, Prof. M.K. Jha; Past President, Prof. V.V. Basava Rao; Vice Presidents, Mr. Praveen Saxena and Prof. N. Balasubramanian. Like the last session, Dr. Avijit Ghosh, Honorary Secretary is the Convenor of OIP 2021.

Over 700 Chemical Engineering students are participating in the program from across the country. A few students from abroad have also registered for the internship course. As many as 16 industry professionals from 15 industries will be the resource persons for the OIP 2021.



PRODUCTION OF FUELS AND CHEMICALS IN NEW WORLD: CRITICAL ANALYSIS OF CHOICE BETWEEN CRUDE OIL AND BIOMASS

GANAPATI D. YADAV*, VIKRAMADITYA G, YADAV & SAURABH C. PATANKAR

We publish below summary of an article, which dwells on the Energy Policy of the government. It also explains importance of the Hydrogen Economy and discusses carbon neutral as well as carbon negative energy policy.

Energy and the environment are intimately related and hotly debated issues. Today's crude oil-based economy for the manufacture of fuels, chemicals and materials will not have a sustainable future. The over-use of oil products has done a great damage to the environment. Faced with the twin challenges of sustaining socio-economic development and shrinking the environmental footprint of chemicals and fuel manufacturing, a major emphasis is on either converting biomass into low-value, high-volume biofuels or refining it into a wide spectrum of products. Using carbon for fuel is a flawed approach and unlikely to achieve any nation's socio-economic or environmental targets. Biomass is chemically and geographically incompatible with the existing refining and pipeline infrastructure, and biorefining and biofuels production in their current forms will not achieve economies of scale in most nations. Synergistic use of crude oil, biomass and shale gas to produce fuels, value-added chemicals, and commodity chemicals, respectively, can continue for some time. However, carbon should not be used as a source of fuel or energy but be valorized to other products. In controlling CO₂ emissions, hydrogen will be a critical role. Hydrogen is best suited for converting waste biomass and carbon dioxide emanated from different sources, whether it is fossil fuel-derived carbon or biomass-derived carbon, into fuels and chemicals as well as it will also lead, on its own as energy source, to the carbon negative scenario in conjunction with other renewable non-carbon sources. This new paradigm for production of fuels and chemicals not only offers the greatest monetization potential for biomass and shale gas, but it could also scale down output and improve the atom and energy economies of oil refineries.

The full article is available on <https://doi.org/10.1007/s10098/-020-01945-5>.

*Former Vice Chancellor, R.T. Mody Distinguished Professor and Tata Chemicals Darbari Seth Distinguished Professor of Leadership and Innovation at the Institute of Chemical Technology (ICT), Mumbai.



Robert Byron Bird

1924 - 2020



Robert 'Bob' Byron Bird, who passed away on 13 November 2020, was one of the most influential chemical engineers in the history of the field. But for his colleagues in the University of Wisconsin-Madison Department of Chemical and Biological Engineering, he was more: a mentor, a friend and a source of endless inspiration.

A native of Bryan, Texas, Bird didn't begin his academic career focused on engineering; in 1941 he enrolled at the University of Maryland, intent on studying foreign languages. His father, however, convinced him that engineering might lead to a better living, pointing out that there were big opportunities in the emerging. His son decided to give it a try.

World War II paused Bird's education for several years. He served in Europe as a second lieutenant in the 90th Mortar Battalion where he saw action from eastern Belgium to the Austrian border. He liked to remark that the U.S. Army helped him improve his French, Dutch and he self-taught German.

On returning to the United States, he enrolled at the University of Illinois at Urbana-Champaign, completing his bachelor's degree in 1947 before earning his PhD in physical chemistry at UW-Madison in 1950. He then completed postdoctoral work in Madison and at the University of Amsterdam, during which time he co-authored his first textbook the 1,200-page *Molecular Theory of Gases and Liquids*, along with his advisor Joseph O. Hirschfelder and UW-Madison professor Charles F. Curtiss.

After teaching for a year at Cornell University, Bird was invited by chemical engineering pioneer Olaf A. Hougen to join the UW-Madison chemical engineering faculty in 1953. Over the next 40 years, Bird's contributions were foundational to modern chemical engineering. He conducted groundbreaking research in fluid dynamics, transport phenomena, the kinetic theory of polymers and the rheology of polymeric liquids. He was a prolific textbook writer, including the seminal text *Transport Phenomena*, co-authored with UW-Madison chemical engineering colleagues Warren Stewart and Edwin Lightfoot, which has been used in engineering curricula worldwide for six decades now. He also authored texts on polymeric liquids and polymer science. And he never lost his love for languages: he was fluent in eight of them and published books on beginner's Dutch and in technical Japanese.

Bird received countless honours for his work, including, nine honorary doctorates, a knighthood from Queen Beatrix of the Netherlands and election to the National Academy Engineering, National Academy of Sciences, the American Academy of Arts and Sciences, and the Wisconsin Academy of Sciences Arts and Letters. In 1987, he received the National Medal of Science from President Ronald Reagan for his profoundly influential books and research on kinetic theory, transport phenomena, the behaviour of polymeric fluids, and foreign language study for engineers and scientists



He received the Bingham Medal, the highest honour from the Society of Rheology as well as numerous national awards from the chemical engineering professional society AIChE and the American Society for Engineering Education.

Bird officially retired from UW-Madison in 1992 but he was a familiar face on the engineering campus for almost the rest of his life. In February 2014, the Department of Chemical and Biological Engineering hosted a symposium and banquet to celebrate his 90th birthday. In 2019, thanks to generous donors, the department established the Robert Byron Bird Department Chair in Chemical and Biological Engineering in his honour.

Bird was an avid outdoorsman and loved hiking and canoeing; in fact, Madison's relative closeness to the wild Quetico Provincial Park in Ontario was one factor in his decision, way back when, to join the University. He took an annual trip into the wilderness every year he was able.

Outside of engineering, Bird had many other interests. He was an amateur genealogist, writing several books on his family heritage as well as a writer of limericks and lover of puzzles. He was fond of opera and classical music and was an accomplished pianist, organist and composer.

And true to his nature, instead of a funeral, Bird requested an organ concert to be held in Madison, when conditions allow.

Collected from: <https://www.engr.wisc.edu/news/chemical-engineering-pioneer-robert-byron-bird-passes-away-at-96/>



IIChE AWARDS 2020

Following is the list of IIChE Awards and the Awardees. These Awards were presented on the occasion of SCHEMCON 2020 and CHEMCON 2020 in recognition of eminence, excellence and talents in various spheres of chemical engineering profession and education.

Dr.B.P.Godrej Life Time Achievement Award

Mr P. K. N. Panicker, Past -President, IIChE

Lala Shriram National Award for Leadership in Chemical Industry

Mr. D. M. Butala, Corporate Management Executive and Consulting Engineer, Vadodara

ICI India Ltd Award for Excellence in Process or Product Development

Dr Sundergopal Sridhar, Senior Principal Scientist, Membrane Separations Group, Indian Institute of Chemical Technology, Hyderabad

Herdillia Award for Excellence in Basic Research in Chemical Engineering

Prof. Bishnupada Mandal, Indian Institute of Technology, Guwahati

NOCIL Award for Excellence in Design or Development of Process Plant and Equipment

Mr. Dhawal Saxena, Executive Associate Director Blast Carbo Blocks Pvt Ltd, Navi Mumbai

ONGC Award for Excellence in Design and Development of Oil/Gas Related Process Plant and/or Chemicals

Dr. Tarun Kumar Naiya, Associate Professor, IIT (ISM), Dhanbad

Hindustan Dorr-Oliver Award for Excellence in Use of Science & Technology in Rural Development

Prof. Shirish Hari Sonawane, National Institute of Technology, Warangal (TS)

Hindustan Lever Biennial Award for the most Outstanding Chemical Engineer of the Year (Under the Age of 45 Years)

Prof. Vimal Chandra Srivastava, Indian Institute of Technology, Roorkee

Amar Dye-Chem Award for Excellence in Research and Development (Under the Age of 35 Years)

Dr. Vineet Aniya, CSIR – Indian Institute of Chemical Technology, Ministry of Science & Technology, Govt of India Hyderabad

Prof Shyamal Kanti Sanyal Memorial Award for the best PhD Thesis in the Area of Membranes Research with Significant Commercial Potential

Dr. Akshay Modi, Research Associate Indian Institute of Technology of Bombay, Powai, Mumbai



Dr A V Rama Rao Fndn Best Ph D Thesis and Research in Chemical Engineering/Technology
Dr. Babul Prasad, Post Doctoral Researcher, The Ohio State University, Columbus, USA
& his research guide
Prof. Bishnupada Mandal, Indian Institute of Technology, Guwahati

The Chemical Weekly Prize for Best Research Paper published in a High Impact Factor International Journal by an Undergraduate Chemical Engineering Student (First and Second Prizes)

1st Prize

Mr. Ashin Antony Sunny
Institute of Chemical Technology, Mumbai

2nd Prize

Mr P Ravi Teja, UPES, Bidholi, Deradun, Uttarakhand

Chemical Weekly Award for the Best Paper Published in the Institute's Journal (ICE-2018)

Dr Ashwini Sood and **Dr Tulika Gaur**, Harcourt Butler Technical University, Kanpur

IICChE NRC Award Best Paper in "Indian Chemical Engineer" 2018

Dr Ashwini Sood and **Dr Tulika Gaur**, Harcourt Butler Technical University, Kanpur

The Kuloor Memorial Award to the best technical paper published in the journal of the Institute in the issues of the preceding year

Dr Ashwini Sood and **Dr Tulika Gaur**, Harcourt Butler Technical University, Kanpur

Sisir Kumar Mitra Memorial Award to the second best technical paper published in the journal of the Institute in the issues of the preceding year

Dr Shaik Shadulla, **Dr K Satish Raj** and **Dr S V Naidu**, AU College of Engineering, Andhra University, Visakhapatnam

IICChE NRC Award 2nd Best Paper in "Indian Chemical Engineer" 2018

Dr Shaik Shadulla, **Dr K Satish Raj** and **Dr S V Naidu**, AU College of Engineering, Andhra University, Visakhapatnam

IICChE NRC Award 3rd Best Paper in "Indian Chemical Engineer" 2018

Dr Vivek Nigam, **Dr S Narasimha Reddy** and **Dr P S T Sai**, Institute of Chemical Technology Madras, Chennai

M P Chary Memorial Award

Ms Harsha Nagar, Chaitanya Bhrathi Institute of Technology, (CBIT), Hyderabad

Late Lakshmi Nandakumar Award of the Institute for best presentation in Schemcon 2017 by a Lady Student

Ms Jasneet Kaur Pala, BITS Pillani, Goa Campus, Goa



Gouri Dutta Award for the Best Paper presentation in Schemcon 2017 of the Indian Institute of Chemical Engineers

Mr. Yash Patel, G H Patel College of Engineering & Technology, Gujarat

Ambuja's Young Researcher's Awards for doing Post-Graduate Studies in India after GATE Examination (10 Prizes)

Mr Akash Gupta, ICT, Mumbai; Ms Avni Singh, ICT, Mumbai; Mr Naman Kukreja, ICT, Mumbai and Ms Mamta Gwala, NIT, Durgapur

Lupin Industries Best Chemical Engineering Teacher Award for the Faculties in Private Colleges below the age of 50 years

Dr Mukunda Vai Medal, Anurag Univrtidity, Hyderabad

Padmashri Professor G D Yadav and Dr (Mrs) Vasanti G Yadav Award for the Most Versatile Chemical Engineering below 25 years of age

Mr Pingali Sai Praneeth, Indian Institute of Technology, Hyderabad and Ms Aindrila Indra, Heritage Institute of Technology, Kolkata

Ambuja's Best Student Chapter Award (2 Prizes)

1st Prize

IIChE Student Chapter, Sri Venkateswara College of Engineering, Pennalur, Sriperumbudur, and

2nd Prize

IIChE Student Chapter, SSN College of Engineering, Kalavakkam

Pidilite's Best Student Chapter Award

IIChE Student Chapter, Shroff S R Rotary Institute of Chemical Technology, Bharuch

Best Regional Centre Award (3 Prizes)

Category "A" Best

Calcutta Regional Centre, IIChE

Category "B" Best

Amaravati Regional Centre, IIChE

Category "B" Second Best

Trivandrum Regional Centre, IIChE

Prof.P.Sen Gupta Award for Best Employee of the Year

Mr Anirban Ghosh, IIChE, Kolkata



Acharya P C Ray Award for the Best Home Paper at the Final Degree Examination (2 Prizes)

1st Prize

Mr Amogh Sandip Nagarkar, ICT, Mumbai

2nd Prize

Ms Dharani S

SASTRA Deemed to be University, Thanjavur

Ambuja's Best Home Paper or Design Project Report Awards (3 Prizes) Ambuja's Best Home Paper or Design Project Report Awards (3 Prizes)

1st Prize

Mr Arjav Utpal Shah, IIT, Bombay

2nd Prize

Ms Madhangi R, SASTRA Deemed to be University, Thanjavur

3rd Prize

Ms Petchetty Sirisha, Anurag Group of Institution

Pankaj P Patel Trust Essay Competition Prize

Mr Rakshit Rajkumar Raikar, KLE Dr M S Sheshgiri College of Engineering & Technology, Karnataka

VICAL Award for best Students Activities for the Best Paper Presentation during the previous SCHEMCON (3 Prizes)

1st Prize

Mr Gaurav Jadhav and Mr Sunny Kalekar, Gharda Institute of Technology, Maharashtra

2nd Prize

Mr Saurabh G Kalghatgi, ICT, Mumbai

3rd Prize

Mr M H Halashankar Swamy, Mr K Sadashiva Patil, Mr Abhishek B and Hemantha Raj K, SIT, Karnataka



ANNOUNCEMENT FOR AWARD NOMINATIONS

NOMINATIONS FOR SOME IICHE AWARDS/PRIZES FOR 2021

The Institute invites nominations for IICHE Awards/Prizes for 2021, which are given in recognition of meritorious work in the field of Chemical Engineering in India. The awards/prizes are:

- Lala Shriram National Award for “Leadership in Chemical Industry”
- Herdillia Award for “Excellence in Basic Research in Chemical Engineering”
- NOCIL Award for “Excellence in Design or Development of Process Plant and Equipment”
- Jubilant Award for “Outstanding Contribution in the area of Chemical Process Design”
- IPCL Award for “Safety/Hazard Management in Petrochemical Industry”
- ONGC Award for “Excellence in Design and Development of Oil/Gas related Process Plant and/or Chemicals”
- Hindustan Dorr-Oliver Award for “Excellence in Use of Science and Technology in Rural Development”
- ICI India Limited Award for “Excellence in Process or Product Development”
- Amar Dye-Chem Award for “Excellence in Research and Development” – for Chemical Engineer below the age of 35 years as on 31st December 2020
- Lupin Industries Best Chemical Engineering Teacher Award for the Faculties in Private Colleges below the age of 50 years as on 31.12.2020
- Dr A V Rama Rao Foundations Best Ph.D. Thesis and Research Award in Chemical Engineering/Technology for the Year 2021
- Prof Shyamal Kanti Sanyal Memorial Award for the “Best PhD Thesis in the area of Membranes Research with Significant Commercial Potential”
- The Chemical Weekly Prize for “Best Research Paper Published in a High Impact Factor International Journal by an Undergraduate Chemical Engineering Student”
- (First and Second Prize)
- Padmashri Professor G D Yadav and Dr (Mrs) Vasanti G Yadav Awards for the most versatile Chemical Engineering/Technology Students in India”.
- Professor Ashutosh Sharma Award for the Best Research Paper Published in a National/ International Journal by an Undergraduate Chemical Engineering Student (Male/Female alternative year).

The forms, duly filled-in, should reach the IICHE Office on or before 30th June 2021.



- Ambuja's Young Researcher's Awards for Doing Post-Graduate Studies in India for the Year 2021 (10 awards)

The forms, duly filled-in should reach the IIChE Office on or before 31st August, 2021

- Shah-Schulman Award 'for the best Ph.D. thesis in the area of Colloid and Interface Science'.
- Dr K Anji Reddy Innovator of the Year in Chemical Engineering and Technology in India by publishing in Reputed International Journal in Chemical Engineering & Biotechnology/ Patents of merit.

Both the forms, duly filled-in should reach the IIChE Office on or before 31st May 2021.

The Institute also invites nominations for:

- Acharya P C Ray Award (First and Second Prize) Ambuja's Best Home Paper or Design Project Report Award (First, Second and Third Prize)
- **Nomination Forms for these two awards have to be endorsed by the Head of the Department of Chemical Engineering, of the concerned institution. Forms, duly filled-in along with the Project Report should reach the IIChE Office on or before 17th July 2021.**



REGIONAL CENTRE ACTIVITIES

Due to the Pandemic, nearly all programmes were held on the virtual platform.

Baroda Regional Centre

A training programme on **HAZOP study** was conducted during **2 – 4 February 2021** for personnel of Sud-Cheme Industries. The training was provided by **Mr. D.M. Butala**, former ED, Consulting Engineer and a Senior Council Member of IIChE.

The training highlighted PHA, theories of HAZOP study, PHA Pro software, etc. The training also comprised HAZOP exercise. Participated by 20 personnel from Sud-Cheme, the programme was highly successful.

Chandigarh Regional Centre

On the occasion of **Rajiv Gandhi Akshay Urja Diwas** on **20 August 2020**, a **webinar** was conducted, titled, '**Energy and Environment: A New Paradigm**'. **Prof. S.K Sharma**, Professor Emeritus, Energy Research Centre, Panjab University gave a presentation highlighting the present energy scenario and the energy potential from various sources. A large number of students and faculty members of the University as well as the IIChE members participated in the highly enlightening webinar session.

The Founder's Day was celebrated through a webinar on **2 November 2020** through a webinar on '**The role of Chemical Engineering in MSMEs**'. The Student Chapter of **Dr. Shanti Swarup Bhatnagar University Institute of Chemical Engineering and Technology (SSBUICET)** was the joint organiser. **Mr. Rakesh Rattan Aggarwal**, an alumnus of SSBUICET, Panjab University and an industrialist was the honorable speaker for the day. Starting with a general introduction and his personal experience, **Dr. Aggarwal** dwelt on the role of a chemical engineers, job opportunities, etc. His talk was followed by a question-answer session, participated by a large number of students. They appreciated the programme and found the webinar to be very informative.

Dhanbad Regional Centre

A **webinar** on '**COVID-19 and its Socio-economic Impact**' was organised on **6 July 2020**. **Dr Zyta Ziara** from University of Queensland, Australia spoke on the subject. More than 300 participants throughout India participated in the online programme.

Another **webinar** was held on **18 July 2020**, titled, '**The Skills and Knowledge that Oil Industry Will Need from Its Future Engineers**'. A presentation was made by **Mr. Abhijeet Anand**, Commercial Engineer, Schlumberger.



Chennai Regional Centre

Prof. Dr. M.A. Govinda Rau Memorial Lecture was delivered by **Mr. R. Dorairaj**, Associate Project Director, ISRO (Retd.) on the topic, **ISRO Functions, Rocket Types and Technical Information** on **6 February 2020**. The lecture was delivered at the Dept. of Chemical Engineering, Sathyabama Institute of Science & Technology, Chennai, which has a Students Chapter under the Chennai RC.

Prof. Dr. B. Jagannathaswamy Memorial Lecture was delivered by **Dr. Santhoji Katare**, Technical Leader and GM, Ford Motor Pvt. Ltd., on the topic, **Data Analysis** on **22 February 2020**. The lecture was delivered at the Dept. of Chemical Engineering, S. S. N. College of Engineering, Chennai, which has a Students Chapter under the Chennai RC.

Prof. Dr. Kailasantha Chandrasekaran Memorial Lecture was delivered by **Mr. V. Sriram**, Deputy GM, Chennai Petroleum Corporation Ltd. on the topic, **Refinery Processes** on **7 March 2020**. The lecture was delivered at the Dept. of Chemical Engineering, Sri Venkateswara College of Engineering, which has a Students Chapter under the Chennai RC.

Guwahati Regional Centre

Dr N. V. Choudary, Scientist Emeritus, HPCL R&D presented a **talk** online on **26 November 2020** on '**Petroleum Refining: Past, Present and Future**'. The programme was held in association with IIT Tirupati. Dr. Choudary's talk covered the history of petroleum refining, how it evolved, particularly the technological advances to meet the changing requirement. He also discussed present challenges and the future outlook.

Prof. W.S. Winston Ho, Distinguished Professor of Engineering, William G. Lowrie Department of Chemical and Biomolecular Engineering, Department of Materials Science and Engineering, Ohio State University, presented a **talk** on '**New Amine-Based Membranes for H₂ Purification and CO₂ Capture**' on **14 December 2020**. Prof. Ho covered a whole range of issues from new advances in amine-based polymeric membranes for hydrogen purification for fuel cells and CO₂ capture from flue gas in coal- and/or natural gas-fired power plants.

Hyderabad Regional Centre

The **13th M.P. Chary Memorial Lecture** was delivered digitally by **Dr. Sanjeev S. Katti**, Director General, ONGC Energy Centre on **20 August 2020** on the topic **Green Energy, Clean Energy – Challenges and Opportunities**. Over 190 participants, comprising academics, R&D experts and industry personnel, attended the lecture.

A **seminar** was organised on **20 September 2020** in association with QLeap Academy Pune and IIT Bombay Alumni Association – Hyderabad, titled, '**Understanding Industry 4.0 and Its Applications**'. **Mr. S.M. Rao**, Past Chairman of the Hyderabad RC was the Chief Guest. **Mrs. Sheila**, Deputy Chief Executive, Nuclear Fuel Complex, Dept. of Atomic Energy, Government of India was the Guest of Honour. She was felicitated for her positive contribution to IIChE. **Mr. Gaurav Kataria**, Vice President, Cyient Limited, was the Keynote Speaker. Other speakers were **Dr. Aravind Chinchure**, Founder CEO, QLeap Academy and **Mr. Ashutosh Parasnis**, Director, QLeap Academy. The talks were followed by an interactive session.



The IIChE Founder's Day was observed on **2 November 2020** to pay homage to Dr. H.L. Roy on his 132nd birth anniversary.

A **Webinar** was organised on **14 March 2021** in association with **Technip FMC** and **Progressive Process Chemical Engineering Solutions** on **Effect of Deviations of Process and Quantity of Production, Its Impact on Environment**. **Ms Blessy Stella**, Eindhoven University, The Netherlands was the principal speaker.

A **Lecture**, titled, **Eternal Wisdom – Transforming Challenges into Solutions**, was delivered by **Sri Vinay Ji**, founder of Wisdom Foundation and self-management expert, on **29 August 2020**.

Northern Regional Centre

A four-session series on the topic of **Heat Transfer** was held on **26 September, 10 October, 24 October and 7 November, 2020** under the banner of '**Learning with Leaders Online**'. The sessions were held in collaboration with **Heat Transfer Society of India (HTSI)**. Each of the four sessions comprised Technical session and Student Mentor session. The technical session included talks on commonly used equipment, their principle, design philosophy and maintenance issues. Advanced topics, such as, Advanced Process Control, Industry 4.0 and application of AI were also discussed. There were also discussions on a number of case-studies.

The Student Mentor sessions dealt with the issue of professional needs in order to make students ready for their future career. There were career advice, interview tips, information on job opportunities and professional resources.

Senior industry personnel from a number of renowned organisations were speakers and mentors for the sessions.

Speakers for the four sessions were **Mr. Rajiv Narang**, (IHS-Markit); **Mr. Haresh Sippy**, Tema India Ltd.; **Mr. Kartik Suryanarayanan**, Honeywell-UOP; **Ms Lakshmi Venkatesh**, Petrofrac India; **Mr Abhinay Sangwai**, Petrofrac, Mumbai; **Mr Ugrasen Yadav**, Technip FMC; **Dr Shubhangi Jaguste**, Reliance India Ltd.; **Mr Amey Kuber**, Honeywell-HCI; **Mr Rajan Desai**, Secretary – HTSI and **Mr N Nagarajan**, iFluid Technologies.

The concluding session (Session 4) on 7 November 2020 was held in commemoration of the birth anniversary of Dr. H.L. Roy as part of the Founder's Day celebration.

Padma Bhushan **Mr. K.V. Kamath**, President, New Development Bank delivered the **Lovraj Kumar Memorial Lecture** on **Indian Economy – Recover and Recreate** on **4 December 2020**. The lecture was organised in association with Lovraj Kumar Memorial Trust.

Northern RC observed its **Foundation Day** on **20 February 2021** with two Lectures. The first presentation on **Recycling of Petrochemicals** was made by **Dr. Anjan Ray**, Director, CSIR-Indian Institute of Petroleum, Dehradun and the second presentation was made by **Prof. Anup K. Ghosh**, Dept. of Materials Science and Engineering, IIT, Delhi.

Under the series '**Learning with Leaders Online**', two lectures were organised on **20 March 2021**. **Dr. Hari Om Yadav**, Senior Principal Scientist, CSIR, Ministry of Science and Technology, Government of India delivered a lecture under the title of **R&D in PPP Mode** and **Dr. Somnath Ghosh**, Assistant Professor, Dept. of Chemical Engineering, IIT Delhi delivered a lecture under the title of **Colloidal Dynamics and Functional Colloids for Self-assembly**.



Kochi Regional Centre

The 12th **K. Unnikrishnan Memorial Lecture** was delivered on **25 January 2021**. **Mr. S.B Bhide**, CMD, HOCL delivered the lecture on the topic **Present Scenario of Chemical Industries in India**. He was also the Chief Guest. Earlier, the Welcome and Presidential Address was delivered by the Chairman of Kochi RC, **Mr. K.F. Sajo**. **Mr. K.Jayachandran**, GM (Corporate Planning-FACT) and **Mr. Chacko M Jose**, CGM (Operations)-BPCL-Kochi Refinery, were felicitated on the occasion. Vote of thanks was offered by **Mr. Koya Venkata Reddy**, Hony. Secretary, Kochi RC.



Mr. R. Venugopal, Past Chairman, Kochi RC and Deputy Chief Controller of Explosives, PESO, Kerala, Karnataka and Lakshadweep, was conferred upon the **Samoohya Suraksha Award 2020** by the National Safety Council, Kerala Chapter on **27 January 2021**. Mr. Venugopal was the only chemical engineer to receive the award.

Lote Regional Centre

A webinar was organised on **24 January 2021** on the topic of **Static Electricity**. **Mr. Vidyadhar Rao**, who is an authority in this field, was the main speaker. A training session was also held as part of the programme.

Sriharikota Regional Centre

On 8 November 2020, the Sriharikota Regional Centre was inaugurated through virtual mode in the presence of Mr. A. Raja Rajan, Director, Satish Dhawan Space Centre, Sriharikota as the Chief Guest. Padma Shri Prof. G.D, Yadav, Former VC, Institute of Chemical Technology, Mumbai; President, Indian Chemical Association and former President, IIChE was one of the two Guests of Honour. Prof. Yadav also delivered the Keynote address under the title of Going to Outer Space: Importance of Chemical Engineering. Prof. V.V. Basava Rao, President (2020), IIChE also graced the occasion as a Guest of Honour.



STUDENT CHAPTER ACTIVITIES

Anil Neeukonda Institute of Technology & Sciences, Visakhapatnam

A **Webinar** was organised on **5 June 2020** on **Role of Technocrats in Safeguarding Biodiversity**. As part of the event, **Prof. V.S.R.K. Prasad**, Director, IPE, Visakhapatnam spoke on the topic, **Role of Technocrats in Safeguarding Biodiversity**. The second Speaker, **Mr. S. Ravikanth Reddy**, Senior Manager, CSV, Fluentgrid, Visakhapatnam spoke on **Sustainable Living**.

Chemical Engineering IMPACT Lecture Series I was held in **August 2020** under the central theme of **Current Trends in Chemical Engineering**. **Dr. Naveen**, Dept. of Chemical Engineering, KU Leuven, Belgium; **Mr. S. Ramappa**, Asst. Environmental Engineer, TSPCB, Hyderabad; **Dr. Uma Namburi**, Senior Systems Engineer, Philips India Ltd., and **Mr. Gopi Bisetti**, Senior Process Engineer, HPCL Visakhapatnam spoke on different aspects of career as a Chemical Engineer.

Calcutta Institute of Technology, Uluberia

The 73rd **Foundation Day** anniversary of IChE was observed on **18 May 2020** through a webinar. The President of IChE, **Prof. V.V. Basava Rao**; Honorary Secretary, IChE, **Dr. Avijit Ghosh** and the Principal-In-Charge of Calcutta Institute of Technology, **Dr. Priyabrata Sarkar** participated in the webinar along with other faculty members and students of the Department of Chemical Engineering. The introductory speech was delivered by Dr. Sarkar. Dr. Ghosh spoke about the roles and functions of the Student Chapters. The key-note address was delivered by Prof. Basava Rao.

An online **Lecture** programme was organised on **1 June 2020**, titled, **Separation Operations in Process Industry**. The lecture was delivered by **Prof. V. V. Basava Rao**, President, IChE.

The following Webinars were conducted in 2020:

10 May 2020: On **Overview of CO₂ Capture from Industry Perspective**. **Mr. Ayan K. Bhar**, Linde India Ltd. was the Speaker.

17 May 2020: On **Claus Process (Split Flow)**. **Mr. Saugata Roy**, Jindal Steel and Power Ltd. was the Speaker.

28 May 2020: On **Overview of Sulphur Recovery Unit**. **Mr. Pritam Kumar Panja**, Chennai Petroleum Corporation Ltd. was the Speaker.

1 June 2020: On **Separation Operations in Process Industry**. **Prof. V.V. Basava Rao**, President, IChE was the Speaker.

4 June 2020: On **Fundamentals of Cryogenic Nitrogen Generation**. **Mr. Gourab Roy Chowdhury**, Associate Manager, Commissioning, Linde India Ltd. was the Speaker.



5 June 2020: On **Nucleation and Growth of Particles – Looking into Crystallization**. **Dr. Sulalit Bandyopadhyay**, Researcher, Dept. of Chemical Engineering, Norwegian University of Science and Technology, Trondheim, Norway was the Speaker.

14 June 2020: On **Application of Automation and Machine Learning in Chemical Engineering and Chemistry Research**. **Dr. Sourav Chatterjee**, Max Planck Institute of Colloids and Interfaces, was the Speaker.

20 June 2020: On **Waste Water Treatment – Application of Chemical Engineering**. **Dr. Mehabub Rahman**, Asst. Professor, Dept. of Chemical Engineering, Jadavpur University, Kolkata.

Gayatri Vidhya Parishad College of Engineering, Vishakapatnam

On **2 July 2020**, a multi-event programme, **Aurora**, was held. Events under it included scramble, mini quiz, cross word puzzle, etc.

On **15 July 2020**, a **Tri-quiz series** was organised. As the title of the programme suggests, it consisted of three rounds, i.e., i. Unit processes, ii. Unit operations, and iii. Basic science.

On **17 October 2020**, **Mr. Mohammed Abu Talib Shaik**, a graduate student, Dept. of Chemical Engineering & Petroleum Engineering, Schlich School of Engineering, Calgary, Canada presented a Talk on **Opportunities for Higher Studies in Foreign Universities**.

On **23 October 2020**, **ChemExplora**, a quiz programme on Chemical Engineering and chemical industries, was held.

On **23 January 2021**, **Mr. Karthik Kota**, Deputy Manager, R&D, Coramandal International Ltd. and a former student of the college, presented a talk on **Research Areas in Fertiliser Industries**.

Indian Institute of Technology, Roorkee

The 4th **Prof. J B Lal Memorial Lecture** was delivered by **Prof. Edward Cussler Jr.**, Emeritus Professor, University of Minnesota and Former President, American Institute of Chemical Engineers (AIChE) on **2 March 2021**. The topic of the lecture was **The Future of Chemical Engineering Teaching**.



Indian Institute of Technology ISM, Dhanbad

The following webinars were held in collaboration with the Dhanbad Regional Centre:

7 August 2020: On Floating Storage and Regasification Unit and its Advantage over Land-based LNG Facilities. Mr. Ashanendu Mandal, Former Chief General Manager, Oil & Natural Gas Corporation was the speaker.

21 August 2020: On Exploration and Development of CBM in India and its Prospects. Mr. Uday Paswan, Chief General Manager, Oil & Natural Gas Corporation was the speaker.

11 December 2020: On Devising Standard Methodology, Procedure and Surface Facilities for Testing of CBM Wells. This was held in collaboration with ONGC Bokaro office.

19 – 21 March 2021: A workshop was held on **Future of Chemical Engineering (FCE 2021)** with the support of TEQIP-III.

Madan Mohan Malavya University of Technology, Gorakhpur

The following Webinars were held:

23 May 2020: On New Horizons in Sustainable Development.

8 July 2020: On Improving Your Resume, Cover Letter & Interview Skills. It was organised in association with WiseUp Communications.

26 November 2020: On Process Simulation Software. It was organised in association with Edu-Vitae Services.

1 December 2020: On Frontiers in Chemical and Sustainable Engineering.

During **21 – 25 September 2020**, an Online Skill Development **Workshop on Risk Assessment & Management in Process Industries** was organised.

On **15 December 2020**, a **Workshop on DWSIM** was held in association with **Edu-Vitae Services**.



Manipal University, Jaipur

A **Short Term Online Course**, titled, **Process Design and Development: Transformation of Industry** was conducted during **15 – 19 February 2021**. Besides IIChE Jaipur Regional Centre, Indian Chemical Council and Taledge Solutions were the associates for the programme.

Dr. S S Bhatnagar University Institute of Chemical Engineering & Technology, Panjab University Chandigarh

On **25 November 2020**. A virtual **Orientation Programme** was held for the new members of the Student Chapter, which was conducted by the Chandigarh RC. The students were informed in details about IIChE in general and about the Student Chapters and Regional Centres, their roles and activities with special emphasis on the Chandigarh RC.

Skill Cart: Unfurl the Job Market, a programme for skill development, was organised during **8 – 10 January 2021** in collaboration with **Hitbulls Eye under TEQIP-III**. The focus was on developing three essential skills that are essential for developing a career, namely, i. communication skill for writing; ii. Oral communication skill, and, iii. interview skills.

Sant Longowal Institute of Engineering and Technology, Longowal

A **Symposium** was organised on **Opportunities & Challenges for Chemical Engineers** on **7 August 2020**. The response from students was very encouraging. Besides SLIET, students from several engineering colleges and universities registered for the programme. Speaker were **Mr. HIRAK DUTTA**, formerly with OISD and IOCL; **Dr. MAHESH MURTHY**, SABIC; and **Mr. BHARAT GOENKA**, Director, Strategic Customers, Shell Catalysts and Technologies.

Sri Sivasubramaniya Nadar College of Engineering, Chennai

STEER 2021, the 7th National Conference on **Sustainable Trends in Energy and Environmental Resources**, was organised on 26, 27 March 2021. Events under STEER 2021 included paper presentation, poster presentation, Chemquiz and ChemJAM. A Webinar was also held. Winners of competitions received cash prize.



Government Engineering College, Valsad

An online **Career Counselling** session, namely, **Career Opportunities for Chemical Engineers**, was held on **29 May 2020**. **Mr. Ramesh Prajapati**, former Chairman, Vapi Regional Centre was the main speaker.

The following **Webinars** were held:

13 October 2020: On **Startup and Entrepreneurship Development for Chemical Engineers**. **Mr. Rohit Dave**, motivational speaker and soft skill trainer, was the speaker.

24 October 2020: On **Transformation in Field and Life by 360⁰ Improvement**. **Mr. Japan Trivedi**, author, trainer and coach, was the speaker.

3 June 2020: On **Energy Fundas**. **Mr J. R. Shah**, an expert in energy sector, was the speaker.

22 August 2020: On Energy Conservation. **Mr. C.R. Rao**, an expert in energy sector, was the speaker.

e-industry visits were organised on 8 June 2020 at **Industrial Boiler Ltd.**, Vapi and on 27 June 2020 at **Pidilite Industries Ltd.**, Vapi.

Anurag Group of Institutions, Hyderabad

An **Industry Visit** was undertaken on **13 March 2020** to **Punya Herbals**.

National Institute of Technology, Warangal

A **Rally** was organised in Collaboration with **Indian Oil Corporation Ltd.**, (IOCL) on **2 February 2020** to promote awareness on energy conservation and sustainability. The Rally was part of a week-long convention, titled, **CONSERVECKA**.

A **Workshop** on **MATLAB** on **13 March 2020**. The workshop was conducted by **Prof. A.K. Tangirala**, IIT, Madras and officials from MathWorks, Bengaluru.



B V Raju Institute of Technology, Hyderabad

An **Industry Visit** to **Ganapati Sugars**, Sangareddi was organised on **9 January 2020**.

A **Seminar** on career opportunities was held on **11 February 2020**.

Another **Lecture** on **Chemical Engineering abroad** was presented on **20 February 2020** by a Faculty Member of University of New Brunswick, Canada.

BITS Pilani, Hyderabad

A **Student Membership drive** for IICChE was launched in **February 2020**. Students were briefed about what is IICChE and what are its activities. The benefits of the membership were also explained. A total of 28 students applied for membership.

Vishwkarma Government Engineering College, Chandkheda

Mr. Gautam Pradhan, Technical Director of Innovent Process Solutions Pvt. Ltd., presented a **Talk** on **18 December 2020** on the theme of '**Exposure of CHEMCAD software for Chemical Engineering Students**'. BE and ME students as well as faculty members of the Chemical Engineering Department participated in this online session.

A C College of Technology, Chennai

As part of its celebration of CHEMFLUENCE for the 25th year on 24, 25 February 2020, the Department of Chemical Engineering in the college organised a Workshop on Process Equipment Design on the second day. It was conducted by Mr. N. Nagarajan, Chairman, Chennai Regional Centre. Students from over 10 engineering colleges in and around Chennai participated in the workshop.

Vishwakarma Government Engineering College, Ahmedabad

A **Talk** was organised on '**Exposure of CHEMCAD software for Chemical Engineering Students**' on **18 December 2020**. The talk was presented by **Mr. Gautam Pradhan**, Technical Director, Innovent Process Solutions Pvt. Ltd.



IIChE UPDATES

- **ACMS-2022:** The year 2022 is going to be the Platinum Jubilee year for IIChE. Plans are underway to celebrate the occasion year long with several high-profile events. The inauguration of the Platinum Jubilee celebration will commence with an International Conference in Kolkata from **24 to 26 February, 2022** under the title of **Advances in Chemical and Materials Sciences (ACMS-2022)**. The event will be organized in association with Heritage Institute of Technology, Kolkata; NIT Jalandhar and Osmania University College of Technology, Hyderabad. **Details are available on the IIChE website.**
- **GATE Coaching offer by Vani Institute:** IIChE has formed collaboration with the Hyderabad-based Vani Institute of Engineering & Technology for GATE and ESE coaching at the IIChE Headquarters in Kolkata. The IIChE Student Members will get an additional 5 – 10 per cent discount. The Recommendation Form is available on the IIChE website. **Please see the details on the IIChE Website.**
- **Online Internship on Skill Development:** IIChE in collaboration with Academy of Skill Development, Kolkata will offer **Online Skill Development and Internship 2021**. The six-week programme of Live Sessions will be held on weekends or in the evening of weekdays. Registration fees for the IIChE Members: Rs. 2200/- and for others: Rs. 2,500/-. Last day of Registration: 20 April 2021. **Details are available on the IIChE website.**
- **Collaboration with SIT:** A collaboration is underway between **IIChE** and **Siddaganga Institute of Technology (SIT)**, Tumkuru in the areas of Human Capital Development (Training and Competency), Research & Development (Joint Industry Partnership) support and Professional Outreach. As part of the collaboration, SIT will impart training on Process Safety and Risk Management through its Centre of Excellence in Risk Management to students and professionals under the aegis of IIChE.
- **Congratulations:** IIChE applauds **Prof. V. V. Basava Rao**, immediate Past President of the Institute, on becoming the Principal of Osmania University College of Technology, Hyderabad. We wish that Prof. Basava Rao reaches many new heights in his professional career.
- **Achievement:** We are happy to share with our members the news of a novel feat, achieved by renowned academic, **Prof. G.D. Yadav**, former VC, Institute of Chemical Technology, Mumbai, Past President of IIChE and President, Indian Chemical Society. Recently, under the tutelage of Prof. Yadav, his **101st** doctoral student has earned Ph.D. This is a record for any Professor in any field of Engineering in India.



BOOK INFORMATION

Environmental Impact Assessment: Concepts and Practice

Cambridge Scholars Publications, UK has recently published this book, authored by **Prof. Dr A K A Rathi**, former Professor, CEPT University and former Director (Environment) to the Government of Gujarat. The following link gives glimpses of the book:

<http://cambrigescholars.com/product/978-1-5275-6664-4/>

Due to rapid economic growth and enhancing employment opportunities, manufacturing and infrastructural projects play a vital role, especially in developing countries. Even though voluminous literature is available on environmental impact assessment (EIA), guidelines on conducting good quality assessment are lacking. It may be recognized that good EIA reports can only facilitate government decision-making with sustainability considerations.

The book is the result of the review of more than 150 EIA reports and the analysis of shortcomings observed by the author and research on different aspects of the EIA system. It will serve to bridge the gap in the limited understanding of EIA concepts by practitioners and practical aspects by fresh graduates. The book describes output and salient features of a typical good quality EIA report, and case studies to facilitate professionals preparing and appraising these reports. It will also help an EIA consulting organization a great deal in preparing an EIA manual, and project proponents in understanding the complexities involved and potential future environmental liabilities. The book will thus be of immense use to project proponents, environment ministries, EIA practitioners, EIA appraisal authorities, academics, and NGOs, particularly in emerging economies.

Information about the book has been provided by the author, Prof. Dr A K A Rathi



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