



INDIAN INSTITUTE OF CHEMICAL ENGINEERS **(NORTHERN REGIONAL CENTRE)**

ANNUAL REPORT 2019-20

(This report covers the Activities of the IICChE (NRC) during the period 1st July 2019 to 30th June 2020)

August 07, 2020

This year has seen devastating effects due to COVID-19 pandemic in the country, all activities of life, institutions, businesses etc had a setback, the economy of the country is impacted seriously. Northern Regional Centre has not been spared and due to long shut down no activities could be conducted in NRC from April onwards.

However, Indian Institute of Chemical Engineers took an initiative to conduct Online Summer Internship Program (OISP-2002) during this period. This internship program was conducted in three batches and 9 subjects. Each subject matter was covered by one or more subject matter experts – a mix of academicians and industry experts. Total 1900+ students participated in this 4 week internship program. From NRC there were 3 subject matters expert and two presenters, who participated in this program.

The Executive Committee formed for the year 2018-2020 was:-

Chairman	Prof. Anil K. Saroha	Vice Chairman	Dr. Sachchida Nand
Honorary Secretary	Mr. Abhijit B. Pal	Honorary Joint Secretary	Mr. Rajiv Narang
Honorary Treasurer	Dr. Anil Verma		
Members	Prof. S.S. Sambhi	Prof. K. K. Pant	Dr. S.N. Chakravarty
	Prof. V. K. Srivastava	Mr. R.A. Sinha	Mr. Umesh Goel
	Mr. Subodh Sarin		
Co-opted Members	Mr. D.D. Maheshwari	Mr. Shyam Bang	

Activities of NRC

This account covers the period from 1st July, 2019 to 30th June, 2020.

In the year 2019-20, we have been able to organize number of activities on behalf of IChE (Northern Regional Centre) and jointly with other organizations as mentioned below.

S. No.	Date	Venue	Title
1	13/07/2019	Auditorium, IChE (NRC), New Delhi	46 th AGM of Northern Regional Centre
			TOPIC
			SPEAKER
			Developments in Ammonia Production Technology
			Dr. S. Nand, Deputy Director General, Fertiliser Association of India
			Performance of Indian Ammonia Plants
			Mr. Manish Goswami, Chief Technical, Fertiliser Association of India
2	03 – 13/09/2019	Exam Hall, IChE (NRC), New Delhi	IChE Associate Membership Examinations, September 2019
3	12 – 21/03/2020	Exam Hall, IChE (NRC), New Delhi	IChE Associate Membership Examinations, March 2020

Foundation Day of Indian Institute of Chemical Engineers (Northern Regional Centre), New Delhi -

The Foundation Day program was held on 15th February, 2020 in the Auditorium at IChE (NRC). During this occasion two lectures were organized.

Dr. J.P. Gupta, Distinguished Scientist & Chairman, Environmental Impact Assessment, Ministry of Environment, Forests & Climate Change, Government of India presented a paper on “Process Safety is one of the key driver to achieve Five Trillion Dollar Economy”.

Dr. Soumitro Nagpal, Technical Director-Refining, Process Economics Program, IHS Markit presented a paper on “Refinery Configurations for Maximizing Crude Oil to Chemicals Conversion”.

During the foundation day celebration, merit-cum-means scholarships were distributed to 20 students from AMU Aligarh, BCET Gurdaspur, DCRUST Murthal, IIT Delhi and IIT BHU.

CHEMCON - 2019

Indian Institute of Chemical Engineers (Northern Regional Centre), Chemical Engineering Department, IIT Delhi, Indian Oil Corporation Ltd (Industry Partner) and European Federation of Chemical Engineering (International Partner) jointly organised Indian Chemical Engineering Congress ‘CHEMCON-2019’ from 15th to 19th December, 2019 at IIT Delhi.

The Indian Chemical Engineering Congress coincided with Shri Dhirubhai Ambani Commemoration Lecture by Padma Vibhushan Prof. M. M. Sharma, FRS, Emeritus Professor of Eminence, ICT Mumbai.

The conference was Inaugurated on 15th December, 2019 by Shri Dharmendra Pradhan, Hon’ble Minister of Petroleum and Natural Gas and Ministry of Steel, Government of India in the presence of distinguished guests Director, IIT Delhi, Director (Refineries), Indian Oil Corp. Ltd., President, IChE, Head, Petrochemical Academy, Reliance Industries Ltd. The highlight of Inaugural Session was Shri Dhirubhai Ambani Commemoration Lecture on “Innovation for Economic Growth with respect to Chemical Industries: Retrospect & Prospect” by Prof. M.M. Sharma. The Hon’ble Minister inaugurated the function by lighting of lamp and gave Inaugural Address.

The ‘CHEMCON-2019’ was sponsored by leading industries and institutions of India. The European Federation of Chemical Engineering (EFCE) was the International Partner and Indian Oil Corporation Limited was Industry Partner of the event. ‘Platinum Sponsor’ Reliance Industries Limited was represented by Dr. Sanjay Kumar Verma, Head, Petrochemical Academy, RIL. Industry Partner Indian Oil Corporation Limited was represented by Shri S.M. Vaidya, Director (Refineries). ‘Gold Sponsor’ IFFCO and ‘Bronze Sponsors’ FAI, GAIL and HMEL and other ‘Co-Sponsors’ Jubilant Life Sciences Ltd, Bharat Petroleum Corp. Ltd., India Glycols Ltd. and Blast Carboblocks Pvt. Ltd. actively participated by sponsorship delegates from their organisation. More than 400 delegates participated in the event spread over four days of Technical festival on Chemical Engineers topics of current issues and innovative future issues and solutions to respond to major societal changes.

Our International Partner European Federation of Chemical Engineering (EFCE) was helpful in organising Indo-European Symposium by the participation of eminent speakers like Prof. Flario Manenti, Milano, Italy, Prof. Anton Kiss, University of Manchester, UK, Dr. Dietmar Hueglin, Vice-President, BASF, Dr. S. Nand, Deputy Director General, FAI, Prof. G.D. Yadav, ICT Mumbai.

There were five lectures during this session on the following topics:

- CO₂ Utilisation: A Pioneering Pathway
- Rethinking Energy Use for a Sustainable Chemical Industry
- Sustainability & Chemical Recycling at BASF
- Sixty years of Ammonia production in India
- Novel Catalytic Selectivity Engineering in Valorization of Biomass, CO₂ and Water into Chemicals, Materials and Energy

The Congress activities commenced with the following Plenary Lectures:

- 1) Dr. H.L. Roy Memorial Lecture by Prof. K. Vijayraghavan, Principal Scientific Advisor, Government of India on the topic “Fertilizers: Their Chemical Engineering history and their future”

- 2) Prof. C.K. Murthy Memorial Lecture by Prof. Ashutosh Sharma, Secretary, Dept. of Science & Technology, Government of India on the topic “Navigating Complexity in Science”
- 3) Prof. N.R. Kamath & Mrs. Ruzena Kamath Memorial Lecture by Dr. SSV Ramakumar, Director (R&D), Indian Oil Corporation Limited on the topic “Emerging Energy Scenario – Low Carbon Imperatives”

This was followed by IChE Awards distribution of the following Awards to the nominated members:

- 1) Lata Sriram National Award
- 2) Hardillia Award
- 3) Prof. Shyam Kanti Memorial Award
- 4) Dr. A.V. Rama Rao Award
- 5) Shah-Shulman Award

The Technical Sessions were the key functions of the Congress. The theme of the Congress was “Advances in Chemical Engineering for Industrial Applications”. The Technical Sessions were divided into following topics:

- 1) Crude to Chemicals
- 2) Process Safety
- 3) Process Intensification
- 4) Resources, Recycle and Reuse
- 5) Energy and Environment

There were 15 lectures on these topics delivered by subject experts and eminent speakers shared their knowledge and experiences during the event.

Parallel Sessions were held spread over two days wherein technical presentations by the authors were organised. There were more than 180 presentations during these sessions and was well attended.

Poster Sessions had presentations from 38 participants and it was well attended and keen involvement of delegates.

The CHEMCON-2019 was concluded by Valedictory Address by the President of IChE and summarised the proceedings during the event. “The feedback by the participants and active participation by industry and institutions made this mega event a grand success and highly appreciated Congress during the recent past.

The organisers are thankful to the Indian Oil Corporation Limited (IOCL), Reliance Industries Limited (RIL), Indian Farmers Fertiliser Cooperative Limited (IFFCO), GAIL (India) Limited, HPCL-Mittal Energy Limited (HMEL), Fertiliser Association of India (FAI) and other Co-sponsors namely Jubilant Life Sciences Ltd, Bharat Petroleum Corporation Limited, India Glycols Limited and Blast Carboblocks Private Limited for their financial and moral support for organising this mega event.

We also express our gratitude to the European Federation of Chemical Engineering (EFCE) for agreeing to be the International Partner and nominating speakers during Indo-European Symposium.

Programme with Lovraj Kumar Memorial Trust (LKMT):

LKMT has conducted two annual events in association with IChE (NRC). This included an annual lecture and a workshop.

ANNUAL LECTURE -

The annual lecture of Lovraj Kumar Memorial Trust was conducted on 31st October, 2019 at India International Center. It was delivered by Padma Vibhushan Prof. M.M. Sharma, Emeritus Professor of Eminence, Institute of Chemical Technology, Mumbai, on “Imperatives in Chemical, Petrochemical and Petroleum Refining Industries”.

SEMINAR/WORKSHOP –

The Lovraj Kumar Memorial Trust Workshop on “**Changing Energy Paradigm - Challenges and Opportunities**” was organized on 15th & 16th November, 2019 at India International Centre, New Delhi.

The following five plenary sessions were covered in the workshop:

- Refining to Petrochemicals
- Bio-fuels
- Waste to Energy
- Hydrogen
- Solar and other forms of Energy

Following were the topics and presenters for the seminar:

Speaker	Topic
Dr. Anjan Ray Director, CSIR-Indian Institute of Petroleum	Pathways to scalable deployment of bio-fuels in India
Dr. Sean Simpson CSO, LanzaTech USA	Industrial Offgases to Ethanol
Mr. Swadhin Banerjee General Manager – Business Development & Licensing Services, Business Line Biofuels & Derivatives, M/s Clariant	2G Ethanol technology
Dr. S K Puri CGM and Centre Coordinator of Bio-Energy Research Centre, DBT-IOC Centre, Indian Oil Corporation Limited	Biotechnological Interventions for CO ₂ Capture and Utilization
Mr. Daniel Gillis, Technology Director, Chevron Lummus Global	The Role of Residue Processing in the Optimization of Crude to Chemicals Projects

Mr. Samir Saxena, Chief Technical Advisor -Process, KBR	Higher Margin with an Integrated Cost – effective Refinery Scheme
Ms. Indrani Krishnan Senior General Manager, Engineers India Limited	Opportunities in Refinery & Petrochemical Integration - A New Paradigm
Dr. Madusudan Sau CGM (Refining Technology) Indian Oil Corporation R&D	Kero valorization to Chemicals
Dr. Manoj Kumar Upreti Senior Research Manager (Biotechnology), Indian Oil Corporation R&D	Efficient Bio-methantion of Organic waste
Dr. Sanat Kumar Senior Principal Scientist CSIR-Indian Institute of Petroleum	Waste Plastic to Liquid Fuels
Mr. Sagar Shukla Haldor Topsoe	Innovative Solution: Tapping four times more energy from Acid Gases compared to that from SRU
Mr. Saurabh Agarwala Senior Manager (R&D), Engineers India Ltd	EngCryo- A novel technology for Hydrogen Recovery from Refinery Off-Gases
Prof. S. Dasappa Centre for Sustainable Technologies, Indian Institute of Science, Bangalore	Thermo-chemical of biomass for generating bio-hydrogen and bio-fuels
Mr. Alok Sharma CGM (Alternative Energy) Indian Oil Corporation Limited	H-CNG Technology : An Interim Pathway Towards a Green Mobility
Mr. Chandrashekhar Chincholkar KPIT Technologies Limited	Relevance of Hydrogen Fuel Cell based transportation for India
Dr. Ashvini Kumar Senior Director, Renewable Energy Technologies, The Energy and Resources Institute (TERI)	Solar Power: Perspective for India
Dr. Anil Misra National Project Manager, United Nations Industrial Development Organisation (UNIDO)	Solar Thermal Technologies
Dr. Sanjeev S. Katti & Mr. Bharat Mendhe, ONGC Energy Centre	Geothermal Energy

Student Chapters

During recent year, IChE has taken a decision that the Regional Centres will be the mentor and guide of the student's chapters. Based on that, IChE-NRC takes keen interest in the student's chapters. Following are the details of the student's chapters in NRC:

Sl. No	Student Chapter	Coordinator	Activity Report
1.	DCRUST, Murthal	Dr. Manju Rani	N/A
2.	Delhi Technological University	Dr. Manish Jain	N/A
3.	Shiv Nadar University	Dr. Yamini Sistla	N/A
4.	USCT - GGSIPU	Dr. Dinesh Kumar	N/A
5.	AMU Aligarh	Dr. Sadaf Zaidi	N/A
6.	Galgotias University	Ms. Maham Malik	N/A

AMIChE Examinations

We have conducted two AMIChE Examinations - one in **September 2019** and the other one in **March 2020**.

Publications

- 26th Lovraj Kumar Memorial Lecture
- All the events presentations, photographs and videos are available on our website www.iichenrc.org which is continuously updated.

New Members

An updated list of members' directory is available on our website.

Get-together

The following get-togethers were organized in 2019-2020:-

1. 13th July, 2019 - 46th AGM
2. 15th February, 2020 - Foundation Day Celebration of NRC

Scholarship

In response to our circular inviting applications from Government colleges in the northern region, we received 51 applications and out of this, 20 students (16 B. Tech/ B.E. Students and 4 M. Tech/M.E.

Student) were awarded the Golden Jubilee Scholarship for the year 2019-20. Out of this, one scholarship** has been instituted by G. J. Samaj Kalyan Nyas. Scholarship cheques of Rs. 20,000/- each and certificates were distributed by senior members of IICChE (NRC) during the Foundation Day celebration of NRC held on 15th February, 2020 to the following students:-

Sl. No.	Student Name	Year	University / Institute
1	Ms. Jeba Jameel	3 rd year B.Tech	Aligarh Muslim University, Aligarh
2	Ms. Anushka Gupta	3 rd year B.Tech	Aligarh Muslim University, Aligarh
3	Mr. Nadmaan Fazeel	4 th year B.Tech	Aligarh Muslim University, Aligarh
4	Mr. Umar Iqbal	3 rd year B.Tech	Aligarh Muslim University, Aligarh
5	Ms. Sugra Khatoon	2 nd year M.Tech	Aligarh Muslim University, Aligarh
6	Ms. K. M. Diksha	2 nd year M.Tech	Aligarh Muslim University, Aligarh
7	Mr. Utkarsh Tripathi	2 nd year B.Tech	University Institute of Engineering and Technology, Kanpur
8	Ms. Naina	3 rd year B.Tech	Dr. B.R. Ambedkar National Institute of Technology, Jalandhar
9	Mr. Ayush Mishra	2 nd year B.Tech	Dr. B.R. Ambedkar National Institute of Technology, Jalandhar
10	Mr. Amrendra Kumar	3 rd year B.Tech	Dr. B.R. Ambedkar National Institute of Technology, Jalandhar
11	Mr. Ashish Kumar	2 nd year B.Tech	IIT, Kanpur
12	Mr. Sutonu Sadhukhan	2 nd year M.Tech	IIT, Kanpur
13	Mr. Anmol Bawa	4 th year B.Tech	Beant College of Engineering & Technology, Gurdaspur
14	Mr. Dinesh Kumar	3 rd year B.Tech	IIT, Roorkee
15	Mr. Rishabh Khandelwal	4 th year B.Tech	IIT, Roorkee
16	Mr. Akshay Kumar	4 th year B.E	Sant Longowal Institute of Engineering and Technology, Longowal
17	Mr. Deepu Kumar Jha	4 th year B.E	Sant Longowal Institute of Engineering and Technology, Longowal
18	Mr. Neetan Kumar Lalotra	3 rd year B.Tech	Indian Institute of Technology Delhi
19	Mr. Abhishesh Kumar**	3 rd year B.Tech	Indian Institute of Technology Delhi
20	Mr. Milan Goswami	5 th year Dual Degree	Indian Institute of Technology Delhi

Other activities

IChE (Northern Regional Centre) Award

IChE NRC has been giving award for best paper presentation during Student Chemcon. The same was continued in 2019 by awarding Rs. 8,000/- to the best student.

Sponsorship for Aligarh Muslim University Student Chapter programme on “Advances in Chemical and Petroleum Engineering ACAPE 2020”

IChE NRC has sponsored the International Conference organized by AMU Aligarh Student Chapter on “Advances in Chemical and Petroleum Engineering ACAPE 2020” held on 22nd to 24th February, 2020 by sponsoring an amount of Rs. 25,000/-.

Forthcoming Events:

S. No.	Event	Date
1	Annual General Meeting of Northern Regional Centre	Aug 8, 2020

We were able to conduct all the above stated activities because of the hard work and untiring efforts of all the employees of IChE NRC, participating members and EC members of IChE NRC. Finally, I thank all of you for your past support and I solicit your guidance and support for the growth of our Institute in future.

Thank you to all.



(Abhijit Bikas Pal)
Honorary Secretary