



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

July 6, 2021

ANNUAL REPORT 2020-21

Dear Members,

It is a great honour to serve this esteemed institute as the Honorary Secretary and for bestowing the responsibility to take it to its new height. This will be my sixth report presentation as the Honorary Secretary of this Institute. I would like to inform you about our recent surge in activities of the Indian Institute of Chemical Engineers, Northern Regional Centre. Northern Regional Centre has been working wholeheartedly to fulfill the objectives of IICChE. Also, this year saw the continuation of the existing Executive Committee from previous year, as we could not hold the elections for new executive committee due to prevailing pandemic condition. New committee was formed for 2021-23. On behalf of outgoing Executive Committee, we welcome the new Executive Committee.

In continuation of the Online Summer Internship Program (OSIP-2020), held last year, a six-week Online Internship Programme (OIP-2021) was conducted by IICChE this year also for the UG students of Chemical Engineering and allied disciplines. The subjects covered include Petroleum Refinery Engineering, Petrochemicals, Chemical Process Technology, 6-sigma (Yellow Belt) and Biochemical Engineering. From NRC there were 2 subject matter experts and four presenters, who participated in this program. Details about the program are available on the website of the Institute. Registration for the OIP -2021 (Batch-3) is underway now.

The working of Executive Committee formed for the year 2018-2020 was extended for the year 2021 (outgoing) as per the communication received from HQ due to pandemic situation.

Chairman	Prof. Anil K. Saroha	Vice Chairman	Dr. Sachchida Nand
Honorary Secretary	Mr. Abhijit B. Pal	Honorary Joint Secretary	Mr. Rajiv Narang
Honorary Treasurer	Prof. 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	

The new Executive Committee formed for the year 2021-2023, which is formed is

The new Executive Committee list for the year 2021-2023 is as below:

1.	Dr. S. Nand	Chairman
2.	Prof. Anil Verma	Vice-Chairman
3.	Mr. C.P. Srivastava	Honorary Secretary
4.	Dr. Dhiraj Kumar Garg	Honorary Joint-Secretary
5.	Mr. Anshuman Agrawal	Honorary Treasurer
6.	Prof. A.K. Saroha	Member
7.	Mr. Abhijit Bikas Pal	Member
8.	Prof. S.S. Sambi	Member
9.	Prof. V.K. Srivastava	Member
10.	Mr. Subhash Tandon	Member
11.	Dr. Siddhartha Mukherjee	Member
12.	Dr. Anomitra Chakravarty	Member
13.	Mr. Amit Jain	Member
14.	Dr. S.N. Chakravarty	Co-opted Member
15.	Mr. Shyam Bang	Co-opted Member

Activities of NRC

This account covers the period from 1st July, 2020 to 30th June, 2021.

In the year 2020-21, 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	08/08/2020	Online via GoToMeeting application	47 th AGM of Northern Regional Centre
2	26/09/2020	ONLINE via GoToMeeting application	LECTURE SERIES – “LEARNING WITH LEADERS ONLINE” (HEAT TRANSFER SESSION - DAY 1) (Jointly with Heat Transfer Society of India – HTSI)

			<p>During the AGM of NRC, it was decided to start the seminars using online platform. The Programme Committee of NRC looked into this option and changed the popular "Learn With Leader" lecture series program to online series i.e. Learning With Leaders Online (LWLO-2020). The LWLO program was jointly organized with Heat Transfer Society of India (HTSI).</p> <p>The LWLO sessions were specifically focused to meet the requirements of students and faculty Coordinators with its Student Chapters.</p> <p>Each session have both Technical sessions, as well as Student Mentor sessions. The technical session includes commonly used equipment, its principle, design philosophy and maintenance issues. We also includes some of the advanced topics like Advanced Process Control, Industry 4.0 and application of AI as well as some discussion on mechanical aspects. There were specific discussions on various application case-study in real-life industry.</p> <p>The Student Mentor sessions addressed the professional needs, in order to make students ready for their future career. This includes career advice, interview tips, job opportunities and professional resources.</p> <p>Each session was attended by about 75-80 participants as an average)</p>
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		TOPIC	SPEAKER
		Process Simulation Criteria	Mr. Rajiv Narang (IHS-Markit)
		Manufacturing Lesson Learned – Heat Exchanger	Mr. Haresh Sippy (Tema India Ltd)
		Chemical Mentor - Interview	Mr. Kartik Suryanarayanan - Honeywell-UOP; Coordinated by Mr Rajiv Narang (IChE-NRC)

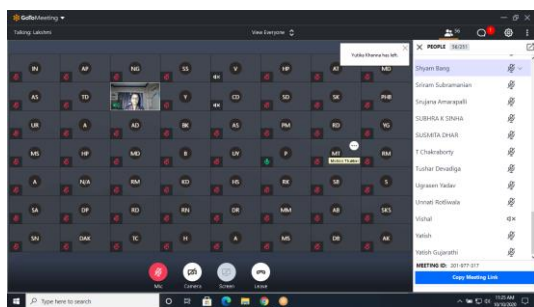
Some photographs during the online program –



3	10/10/2020	ONLINE via GoToMeeting application	LECTURE SERIES – “LEARNING WITH LEADERS ONLINE” (HEAT TRANSFER SESSION - DAY 2)
		TOPIC	SPEAKER

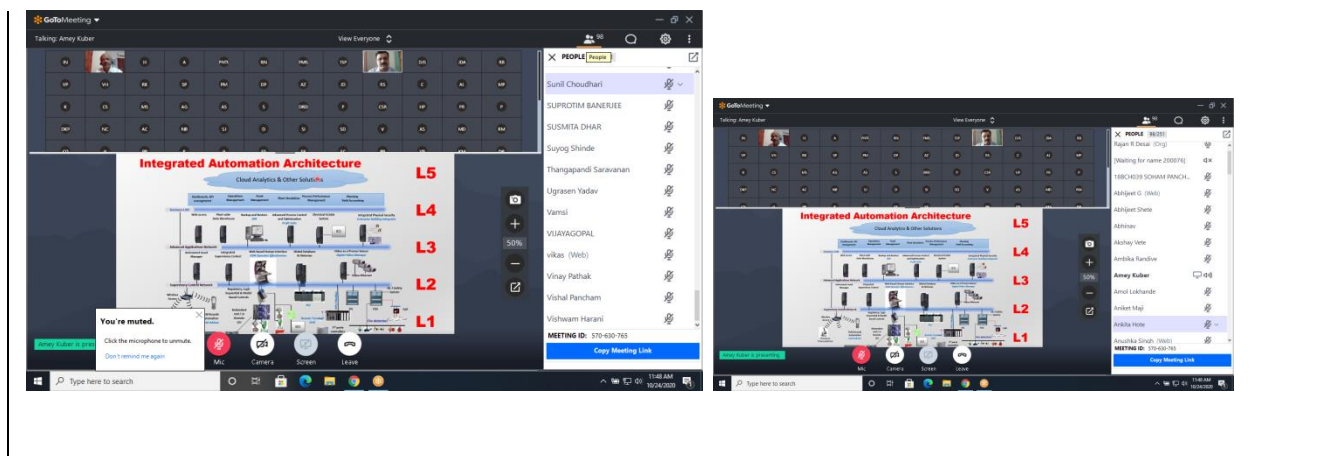
	Keynote Address	Ms Lakshmi Venkatesh (Petrofrac India)
	Dimensionless Number in Exchanger Design	Mr Abhinay Sangwai (Petrofrac, Mumbai)
	Air Cooler Design and Application	Mr Ugrasen Yadav (TechnipFMC)
	Chemical Mentor - Business Writing	Mr Abhijit Pal – Honeywell-UOP Coordinated by Mr Rajiv Narang (IChE-NRC)

Photograph during the online program –

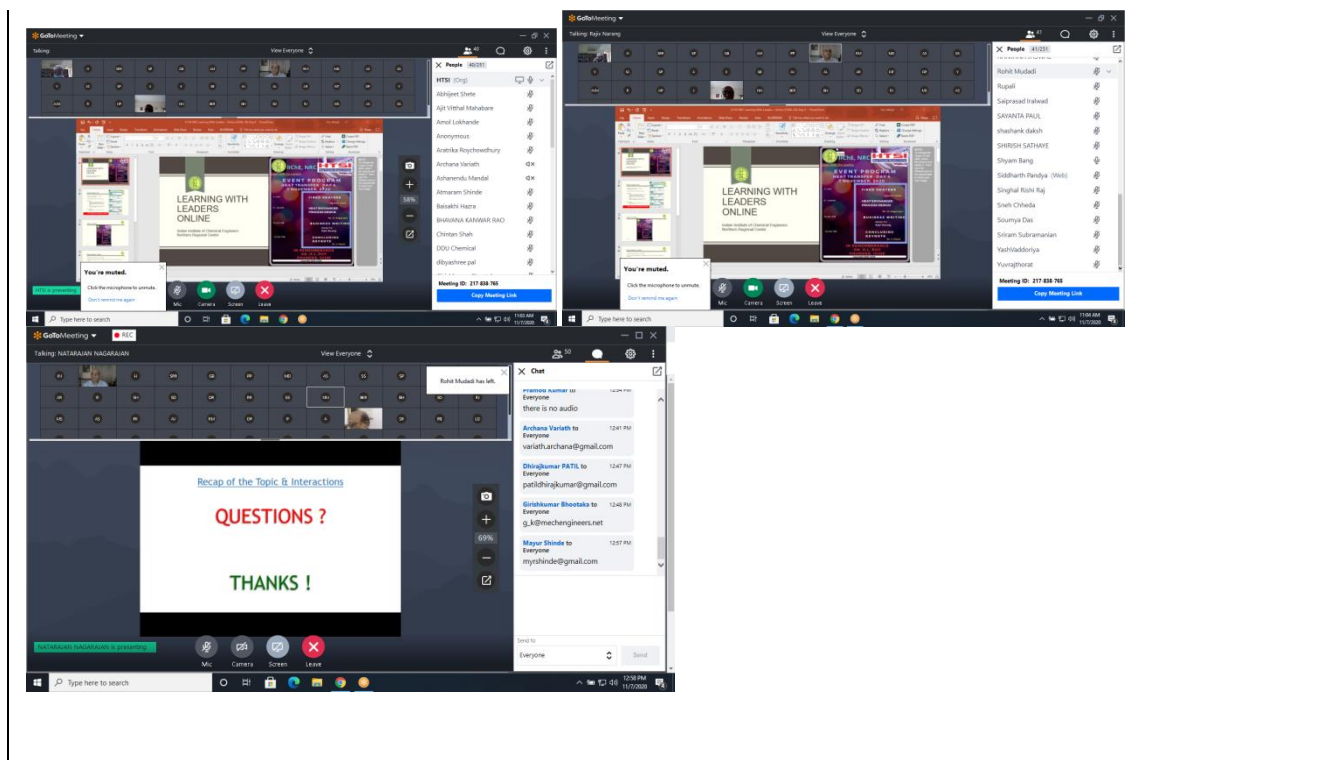


4	24/10/2020	ONLINE via GoToMeeting application	LECTURE SERIES – “LEARNING WITH LEADERS ONLINE” (HEAT TRANSFER SESSION - DAY 3)	
			TOPIC	SPEAKER
			Keynote Address	Dr Shubhangi Jaguste (Reliance India Ltd)
			Advanced Process Control and Industry 4.0 – Heat Exchanger	Mr Amey Kuber (Honeywell-HCI); Mr Rajan Desai (Secretary - HTSI)
			Fired Heater Design and Application	Mr Ugrasen Yadav (TechnipFMC)
			Chemical Mentor - Career Path for Chemical Engg	Mr Manas Banerjee (ExIOCL) & Mr Rajan Desai (HTSI) Coordinated by Mr Rajiv Narang (IChE-NRC)

Some Photograph during the online program –

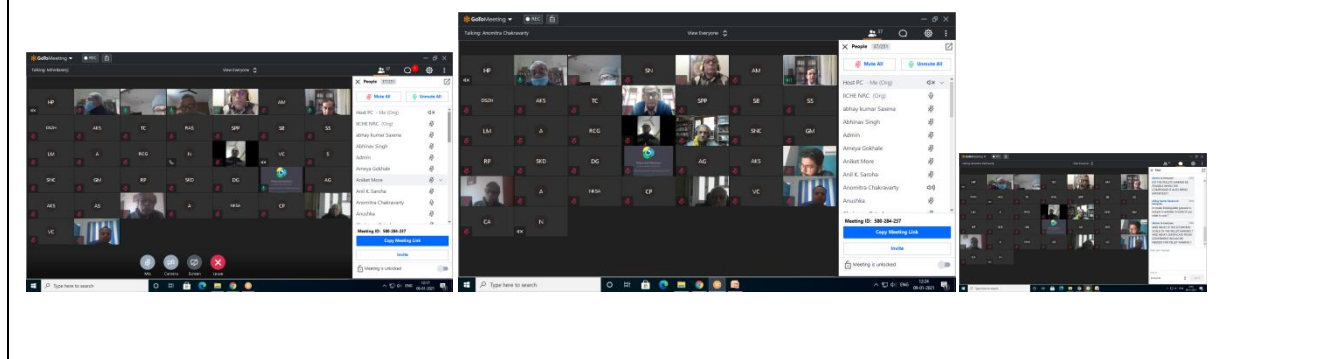


5	07/11/2020	ONLINE via GoToMeeting application	<p>LECTURE SERIES – “LEARNING WITH LEADERS ONLINE” (HEAT TRANSFER CONCLUDING SESSION - DAY 4)</p> <p>The Concluding Session of the "Learning With Leaders Online" (LWLO-2020) of Indian Institute of Chemical Engineers - Northern Regional Centre & HTSI was held on Saturday, November 7, 2020 - 11:00 AM to 01:00 PM. This session was in remembrance of Dr. H.L. Roy, the founding father of IChE. Late Dr. H. L. Roy introduced Chemical Engineering in curriculum as early on 1921 in then Bengal National College, the present Jadavpur University. His great vision not only pioneered the Chemical Engineering education in India but created the profession body. His birth anniversary falls on November 2, and IChE celebrates it as our Foundation Day.</p>										
			<table border="1"> <thead> <tr> <th data-bbox="646 1249 1083 1301">TOPIC</th> <th data-bbox="1083 1249 1493 1301">SPEAKER</th> </tr> </thead> <tbody> <tr> <td data-bbox="646 1301 1083 1397">Fired Heater Design and Application</td> <td data-bbox="1083 1301 1493 1397">Mr Ugrasen Yadav (TechnipFMC)</td> </tr> <tr> <td data-bbox="646 1397 1083 1494">Heat Exchanger Process Design</td> <td data-bbox="1083 1397 1493 1494">Mr N Nagarajan (iFluid Technologies)</td> </tr> <tr> <td data-bbox="646 1494 1083 1664">Chemical Mentor - Business Writing</td> <td data-bbox="1083 1494 1493 1664">Mr Abhijit Pal Honeywell-UOP Coordinated by Mr Rajiv Narang (IChE-NRC)</td> </tr> <tr> <td data-bbox="646 1664 1083 1758">Concluding Keynote</td> <td data-bbox="1083 1664 1493 1758">Dr S Nand, Vice Chairman - IChE NRC</td> </tr> </tbody> </table>	TOPIC	SPEAKER	Fired Heater Design and Application	Mr Ugrasen Yadav (TechnipFMC)	Heat Exchanger Process Design	Mr N Nagarajan (iFluid Technologies)	Chemical Mentor - Business Writing	Mr Abhijit Pal Honeywell-UOP Coordinated by Mr Rajiv Narang (IChE-NRC)	Concluding Keynote	Dr S Nand, Vice Chairman - IChE NRC
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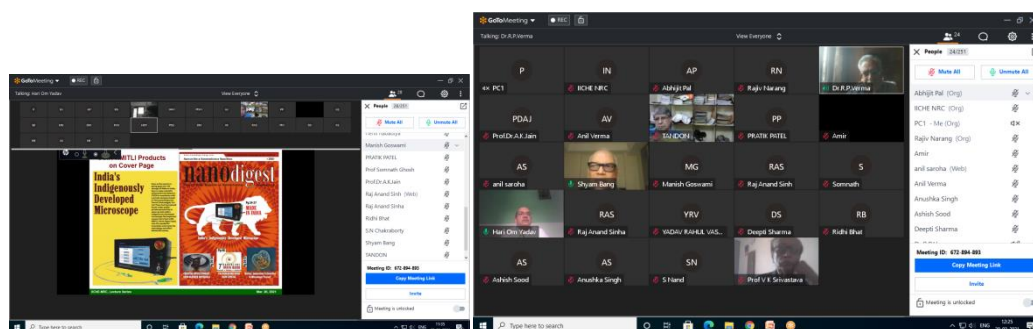
6	09/01/2021	ONLINE via GoToMeeting application	LECTURE SERIES – “LEARNING WITH LEADERS ONLINE”	
			TOPIC	SPEAKER
			Chemistry of Photo Degradation	Mr. Mihir Banerji, Ex-President, Indian Plastics Institute (IPI)
			Corn Starch based Bio-degradable Polymers	Dr. Anomitra Chakravarty, Managing Director, KPS Consultants & Impex Pvt. Ltd

Some Photograph during the online program –



7	20/03/2021	ONLINE via GoToMeeting application software	LECTURE SERIES – “LEARNING WITH LEADERS ONLINE”
			TOPIC
			SPEAKER
			R&D in PPP Mode
			Dr. Hari Om Yadav, Senior Principal Scientist, Council of Scientific & Industrial Research (CSIR), Ministry of Science & Technology, Govt. of India
			Colloidal dynamics and functional colloids for self-assembly
			Dr. Somnath Ghosh, Assistant Professor, Dept. of Chemical Engineering, IIT Delhi

Some Photograph during the online program –



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

The Foundation Day program was held on 20th February, 2021 via online. During this occasion two lectures were organized.

Dr. Anjan Ray, Director, CSIR- Indian Institute of Petroleum, Dehradun presented a paper on “Recycling of Petrochemicals”.

Prof. Anup K. Ghosh, Dept. of Materials Science and Engineering, IIT Delhi presented a paper on “Life Cycle Analysis and Recyclability of Packaging in the Materials Value Chain”.

During the foundation day celebration, merit-cum-means scholarships were distributed to 14 students from DCRUST Murthal, IIT Delhi, IIT Kanpur, IIT Roorkee, MNIT Jaipur and SLIET Longowal.

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 webinar series.

ANNUAL LECTURE -

The annual lecture of Lovraj Kumar Memorial Trust was conducted on 4th December, 2020 through online. It was delivered by Padma Bhushan Shri K.V. Kamath, President, New Development Bank; Former Chairman, ICICI Bank, on “Indian Economy – Recover and Recreate”.

WEBINAR –

The LKMT Workshop (as Webinar) on “O2C (Oil to Chemicals) strategy for refiners – Increasing petrochemicals intensity, Reducing Carbon emission intensity” was organized in association with Indian Institute of Chemical Engineers (Northern Regional Centre) and Federation of Indian Petroleum Industry (FIPI). It was a two day event of around 3 hours duration on each day to be conducted in the months of December-2020, January-2021.

1st webinar: The 1st of the webinar series was held on 19th December 2020 which was addressed by 5 leading Licensors / Technology providers and the event was well attended by 350+ people from Refining / Petrochemical fraternity joining in on-line mode.

Speaker	Topic of presentation
Mr. Mike Banach UOP India	Refinery of the future & how to increase Petrochemical yeild from Refineries
Mr. Rajesh Samarth Lummus Technology	Technologies and Solutions to Shift Products from Transportation Fuels to Petrochemicals
Mr. Siddhartha Saha Axens India	Solutions for enhanced yield of petrochemical feedstock from refineries
Mr. Satyam Mishra & Mr. Partap Vijay Singh KBR	Refinery-Petrochemical Integration – Repurpose Assets, Maximize Profitability, and Pivot to the Future
Mr. Rajiv Aggarwal Engineers India Ltd	Technical challenges and key issues involved in a COTC project - A case Study

2nd webinar: The 2nd webinar was held on 22nd January 2021. The webinar showcased the skills and strategies of the EPC/EPCM (Engineering, Procurement, Construction and Project Management) Companies to complete the execution of O2C projects in the most optimum time and cost frame work, meeting all the statutory and safety protocols for giving confidence to Owner companies about the implement-ability of an O2C facility, adequately substantiated with their proven track record.

Speaker	Topic of presentation
Mr. Rajesh Joshi Aker Solutions	Influencing EPC Success through Strong Engineering Execution
Ms. Prema Suresh Technip India Limited	Strategies for smooth EPC Execution
Mr. Rajeev Gupta Engineers India Ltd	EPCM Execution Challenges in Mega Projects

Mr. P. Balaramakrishna Larsen & Toubro Hydrocarbon Engineering Ltd	LTHE - EPC + Value Proposition for Oil to Chemical (O2C) Projects
Mr. Neelesh Borkar Worley	Transformation from Services to Sustainable Solutions in Mega project execution
Mr. Satheesh M. Pillai Fluor Daniel India Pvt Ltd	Implementation Strategies for O2C Projects

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	Attached
3.	Shiv Nadar University	Dr. Priyanka Katiyar	No activity reported
4.	USCT - GGSIPU	Dr. Dinesh Kumar	Attached
5.	AMU Aligarh	Dr. Parvez Khan	N/A
6.	Galgotias University	Dr. Gagnesh Sharma	N/A

AMIChE Examinations

Due to COVID-19 pandemic, no examinations were conducted during the year 2020-21.

Publications

- Dr. S.N. Chakravarty had proposed the publication of Technical literature and books etc by IChE-NRC, which was deliberated in the EC Meeting and as a first initiative a book on **“Encyclopedia for Rubber Products Manufacturing”**, authored by Dr S N Chakravarty was proposed to be published and it was agreed mutually to go ahead with this. The proposal was approved EC as per terms and conditions given below:
 - The author will solely responsible for the contents of the book. IChE-NRC will not be the publisher.
 - IChE-NRC and the author will share 50% each the surplus generated by the sale of 200 copies.

- IChE-NRC will provide the financial assistance of ₹ 80,000/- and the financial assistance should be duly acknowledged.

The book is being printed and would be published by end-July 2021.

- 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.

Scholarship

In response to our circular inviting applications from Government colleges in the northern region, we received 16 applications and out of this, 14 students (13 B. Tech/ B.E. Students and 1 M. Tech/M.E. Student) were awarded the Golden Jubilee Scholarship for the year 2020-21. Out of this, one scholarship** has been instituted by G. J. Samaj Kalyan Nyas. Scholarship cheques of Rs. 20,000/- each and certificates were awarded to the following students during the Foundation Day celebration of NRC held on 20th February 2021 via online:-

Sl.No.	Student's Name	University	Year in which studying
1	Garima	DCRUST Murthal	IV (B.Tech)
2	Vijay	DCRUST Murthal	IV (B.Tech)
3	Ajay Kumar	IIT Delhi	IV (B.Tech)
4	Rahul Mirdha	IIT Delhi	IV (Dual Degree)
5	Ganesh L. Naik	IIT Delhi	II (Dual Degree)
6	Achyut Kumar Verma	IIT Kanpur	IV (B.Tech)
7	Ravi Kumar	IIT Kanpur	II (B.Tech)
8	Ashutosh Kumar Sharma	IIT Roorkee	II (B.Tech)
9	Abhijit Rathi	IIT Roorkee	IV (B.Tech)
10	Prateek Gupta	IIT Roorkee	III (B.Tech)
11	Dinesh Kumar	IIT Roorkee	IV (B.Tech)

12	Sunny Nilesh Agrawal	MNIT Jaipur	IV (B.Tech)
13	Ajit Kumar	SLIET Longowal	IV (B.E.)
14	Richa Aggrawal ** **(Awarded to G. J. Samaj Kalyan Nyas Scholarship)	DCRUST Murthal	II (M.Tech)

Other activities (IChE-NRC as co-participant)

Short Term Course on "Process Design and Development: Transformation of Industry"

The Department of Chemical Engineering, Manipal University Jaipur has organized a short term course on "Process Design and Development: Transformation of Industry" on February 15-19, 2021 in association with ICC and Indian Institute of Chemical Engineers.

The following topics were covered in this programme:

- Industry 4.0
- Modeling and Simulation
- Industrial Columns
- Industrial Heat Transfer Equipment
- Process Control and Optimization
- Corrosion in Industries

Eminent Speakers:

- Mr. Sunil Saxena, Executive Director (Technical), Engineers India Ltd.
- Mr. C. K. Mukhopadhyay, Ex-Chief General Manager, Indian Oil Corporation Ltd.
- Dr. Sharad Bhartiya, Professor, IIT Bombay
- Dr. Jaya Rawat, Deputy General Manager (R&D), Bharat Petroleum Corporation Ltd.
- Mr. Janardhan Parthasarathy, Director, Taledge Solutions
- Mr. Shailesh Tallur, Ex-Consultant, Honeywell Automation India
- Mr. Abhijeet Singha, Project Manager, Arnova, Australia
- Dr. Shashi Bhushan Arya, Assistant Professor, NIT Surathkal
- Mr. Jagpreet Walia, Research Fellow, Murdoch University, Australia

Online Internship Programme (OIP-2021)

IChE NRC members coordinated two courses for OIP-2021. Each of the courses consisted of 12 sessions (1 – 1.5 hrs each). Each batch had enrolment of about 220 students

Sl. No.	Date	Venue	Title
1	May-June 2021	Online via Google Meet application	<p>Petroleum Refinery Engineering</p> <p>Crude Oil, CDU/ VDU, FCC, Hydrocracking, Gasoline technologies – Reforming, Isomerization, Alkylation, Diesel Technologies, Green Diesel/ Jet, Resid Processing, Introduction to Hazop and Future of Oil.</p> <p>Course Coordinator – Abhijit Bikas Pal with guest lecturer Sreemanta Goswami, Rajiv Narang and Rajan Desai.</p>
2	May-June 2021	Online via Google Meet application	<p>Petrochemical Engineering</p> <p>Petrochemicals, Aromatics BTX technologies, Aromatics derivatives like Phenol and Styrene, Ethylene, Propylene, Butylene, Methanol, Refinery of the Future.</p> <p>Course Coordinator – Neeru Gupta with guest lecturer Parul Thakur and Hitesh Motiramani.</p>
3.	18 th June, 2021	Online via Microsoft Teams application	Online lecture to Madan Mohan Malaviya University of Technology on “Future of Oil”, by Abhijit Bikas Pal

Modernization of Lift

Northern Regional Centre placed the order for replacement of our lift with new to M/s KONE Elevators at total cost of Rs.14,72,080/-. The work of installation of lift and civil work associated with this is in progress but got delayed due to lockdown impact. Now it is likely to be completed by the end of July, 2021.

IICChE (Northern Regional Centre) Award

IICChE NRC has been giving award for best paper presentation during Student Chemcon. The same was continued in 2020 by awarding Rs. 8,000/- to the best student.

Forthcoming Events:

S. No.	Event	Date
1	Annual General Meeting of Northern Regional Centre	July, 2021

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