



**INDIAN INSTITUTE OF CHEMICAL ENGINEERS**  
**AMARAVATI REGIONAL CENTRE**  
**JKC College Campus, Ring Road,**  
**GUNTUR-522 006 (AP)**



25.06. 2023

**ANNUAL REPORT: 2022-2023**

Respected dignitaries and esteemed members, a very good morning and warm welcome to you all. On behalf of the Executive Committee of IChE- ARC, I take this opportunity in extending hearty welcome to you all to this 9<sup>th</sup> Annual General Meeting (AGM) of IChE Amaravati Regional Center in hybrid mode. It is my privilege to place the annual report for the year 2022-2023 before you for discussion and approval. The 8<sup>th</sup> AGM for the year 2021-2022 was held on 10.07.2022 in hybrid mode.

**I. 8<sup>th</sup> AGM on 10.07.2022**

Dr. V.Govardhana Rao Chairman, IChE-Amaravati Regional Centre expressed his inability to preside over the meeting (at the time of AGM he is in USA), Sri J. Murali Mohan, Immediate past chairman presided over the meeting and conducted the proceedings

The AGM unanimously elected the following members as Office Bearers and Executive Committee members of IChE Amaravati Regional centre for the years 2021-2023.

1.	LM 53476	Dr.V.Govardhana Rao, Chairman
2.	LM.18811	Sri. J. Murali Mohan (immediate past Chairman, Ex-Officio)
3.	LM 53757	Dr. N. Sambasiva Rao, Vice Chairman
4.	LM 6492	Dr M.Venkateswara Rao, Honorary Regional Secretary
5.	LM 53479	Sri R. Benerjee Babu. Honorary Regional Joint Secretary
6.	LM 53478	Dr .J. Srinivasa Rao (immediate Honorary Joint Secretary Ex-Officio)
7.	LM 32022	Dr. K.Ramesh Chandra, Honorary Regional Treasurer
8.	LM 32020	Dr. C.V Subrahmanyam
9.	LM 53477	Sri. M. Raghavaiah
10.	LM 8273	Mr G.Ranga Rao
11.	LM 53485	Ms. P. Vijetha Chowdhary
12.	LM 53760	Dr. P.Bangaraiah
13.	LAM 56569	Dr. Vinoth Kumar Raja
14.	LM 66136	Mr.G.Venu Babu
15.	LM 54715	Mr.Mindi Rama Krishna

**Co-opted members**

1.	LM 9292	Dr.T.Subbaiah
2.	LM 53480	Sri N.Jani Bhasha
3.	LM 32588	Dr.P.Venkateswar

## Invitees

1.	LM 27678	Dr.K.B.K.Rao
2.	LM.03406	Dr. A. Suryanarayana
3.	LM 53475	Mr.Enjumuri Pardhasaradhi
4.	LM 53483	Sri K.Siva Prasada Rao

As for the IChE National Council decision, all the student chapter coordinators and Industrial Consultancy Committee members are included as invites to the EC for better coordination in organizing the Regional Center activities.

## II. ENDOWMENT FUND

Dr. M. Venkateswara Rao informed to the members in the 8<sup>th</sup> EC meeting held on 16.05.2023 that the following persons/organizations generously donated to the Endowment fund in the name of Prof. M. Venkateswara Rao.

- a) M/s Jocil Limited, Dikiparru, Guntur : Rs. 25,000/-
- b) Vadlamudi Kotaiah Chowdary Charitable trust : Rs. 15,000/-
- c) Dr. M. Venkateswara Rao, Honorary Regional Secretary : Rs. 10,000/-

All the EC members expressed their appreciation and conveyed their sincere thanks and happiness to Sri J Murali Mohan Managing Director, M/s Jocil limited Dikiparru & immediate past Chairman, IChE ARC, Dr. V.Govardhana Rao Managing trustee, Vadlamudi Kotaiah Chowdary Charities, Tenali & Chairman IChE ARC, Dr. M.Venkateswara Rao Honorary secretary IChE ARC for their generous contributions. With the addition of Rs.50, 000/- (rupees fifty thousand only), the total amount of the Endowment fund in the name of Prof. M. Venkateswara Rao becomes Rs.5, 50,000/- (Rupees five lakh and fifty thousand only). A fixed deposit for Rs.5,00,000/- of the Endowment fund in the name of Prof. M. Venkateswara Rao was made for two years three months for which the rate of interest is 5.3%. It is decided to deposit Rs. 50,000/- (rupees fifty thousand only), as contributed above, also in the bank towards Endowment fund. The existing Fixed Deposit for Rs.5,00,000/- was cancelled on 12.06.2023 and a Fixed Deposit for Rs.5,50,000/- (Rupees five lakh and fifty thousand only) of the Endowment fund in the name of Prof. M. Venkateswara Rao was made for 399 days for which the rate of interest is 7.0%.

## III. RENOVATION OF IChE ARC OFFICE ROOM

Sri Talluri Purnachandra Rao, an out-going graduate of 1973 batch from Chemical Engineering Department, Andhra University, did his MBA in USA and settled in USA. Recently when he visited his home town Karamchedu, Bapatla (Dist.), he showed interest to meet the members of IChE ARC. Accordingly, an informal meeting was arranged in the Committee room, JKC College, Guntur. He had informal discussions with the members of IChE ARC and with some of his old friends sharing his professional activities and achievements in USA, recollecting the memories of his association with Department of Chemical Engineering, Andhra University and also his life in Visakhapatnam.

The members expressed the need to have a well-furnished office room for IChE ARC. Impressed about the activities organized over the years and the awards achieved, he promised to help the ARC. After

going back to USA, he informed to Dr. M. Venkateswara Rao that he wants to donate Rs.1,00,000/- (Rupees one lakh only) for the renovation of IChE ARC office room which is provided by JKC College Management.

All the EC members specially expressed their appreciation and conveyed their sincere thanks and happiness to Sri Talluri. Purnachandra Rao for his liberal donation. The Executive Committee members requested Sri Jagarlamudi Murali Mohan, Secretary & Correspondent of JKC College, Guntur and immediate past Chairman of IChE ARC to get the renovation work done through their management. The following persons also donated/promised cash/kind for the IChE ARC:

S.No.	Name	Amount in Rs.
1	Sri M. Raghavaiah, Director, Srinivasa Cotton & Oil Mills Pvt. Ltd	10,000/-
2	Dr. V. Govardhana Rao	5,000/-
3	Dr. A. Suryanarayana: to purchase office table or Steel cupboard for the IChE ARC office	10,000/-
4	Dr. M. Venkateswara Rao promised to donate a Laptop for the IChE ARC office	35,000/- (approximate)

All the EC members expressed their appreciation and conveyed their sincere thanks and happiness for their contribution.

#### IV. ACTIVITIES OF THE YEAR 2022-23

With the co-operation and support of all the EC members, **Nine Executive Committee meetings** have been organized during this period. The Executive Committee in its first meeting held on 19.09.2022 at 06.30 p.m. in the Committee room, JKC College, Ring Road, Guntur, discussed about the activities to be organized during the year 2022-23.

##### Details of the IChE ARC meetings

S.No.	EC Meeting	Date
1	1 <sup>st</sup> meeting	19.09.2022
2	2 <sup>nd</sup> meeting	20.10.2022
3	3 <sup>rd</sup> meeting	05.12.2022
4	4 <sup>th</sup> meeting	23.01.2023
5	5 <sup>th</sup> meeting	20.03.2023
6	6 <sup>th</sup> meeting	17.04.2023
7	7 <sup>th</sup> meeting	25.04.2023
8	8 <sup>th</sup> meeting	16.05.2023
9	9 <sup>th</sup> meeting	25.06.2023

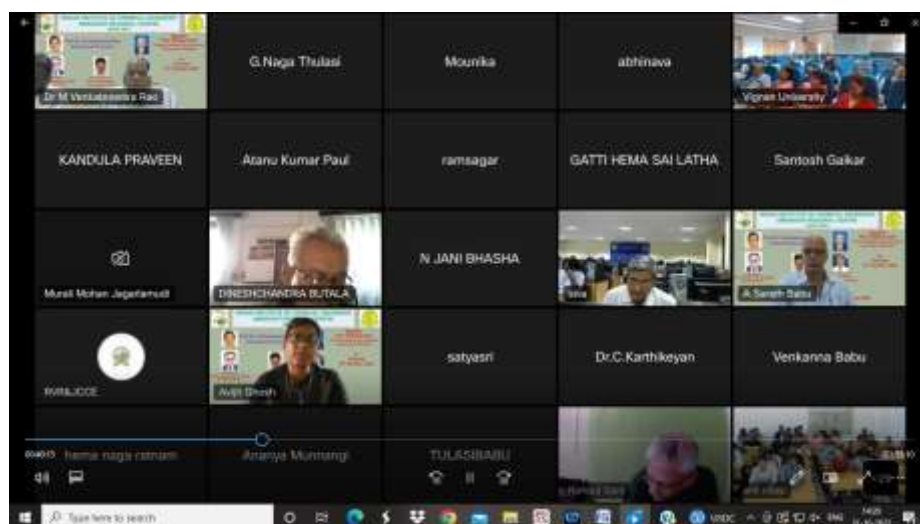
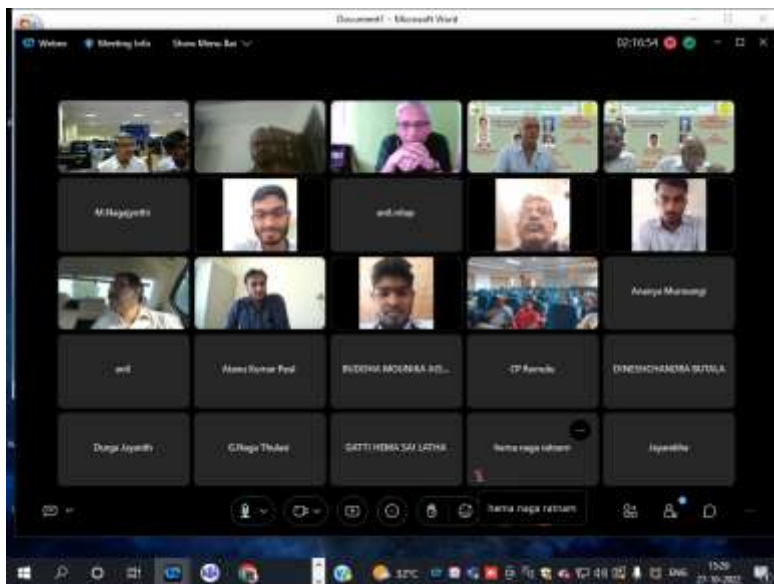
#### V. ENDOWMENT LECTURE

The Endowment Lecture in name of Prof. M. Venkateswara Rao was successfully organized on 27th October, 2022 by IChE Amaravati Regional Center in association with all student chapters under IChE ARC as a part of Platinum Jubilee celebrations of IChE. Dr. Rafiqul Gani, former Professor, the

Technical University of Denmark delivered the 1<sup>st</sup> Endowment lecture on “**Process Systems Engineering and its Applications in Chemical Engineering**”.

Mr .Mohan Krishna a final year Chemical Engineering student from RGUKT, Nuzvid invited the guests on the dais and requested Dr. V .Govardhana Rao, former professor IIT Bombay & Chairman IChE ARC to preside over the function and to conduct the proceedings.

Ms. G.Jyothrmai and Ms.P.Meghana students of Chemical Engineering from Vignan's Foundation for Science, Technology & Research (Deemed to be University), Vadlamudi Guntur started the event with a prayer.



Presiding over the inaugural function, Dr. V .Govardhana Rao, former professor IIT Bombay & Chairman IChE ARC warmly welcomed the dignitaries & participants for Endowment Lecture. He said the IChE ARC has been active in conducting conferences, seminars; National student’s meets relevant to

the current needs round the year. He reported the events conducted from June 2021 till the current date in association with student chapters. Besides these activities, the student chapters organize the invited lectures, industrial visits in their respective departments, he said. He further brought to the knowledge of the participants the importance of chemical & pharmaceutical industry as key sectors in the economic activity of the country, the growth potential of these sectors in the next decade in the context of the government favorable policy decisions, the supply chain disruption in China and the trade conflicts among the USA, Europe and China and the employment potential according to the Economic Survey 2021.

The Chief Guest Sri Dineshchandra M. Butala, President, IChE inaugurated the event. He informed briefly about the history of IChE and the significance of Platinum Jubilee celebrations of IChE. He introduced the importance of Process systems engineering in Chemical engineering and the rapid advances that have taken place in the era software development. He also mentioned the changes that have taken place in the process control rooms from simple manual operation to computer based operation systems.

Prof. C. Karthikeyan, Department of Chemical Engineering, Annamalai University, Annamalai Nagar, Tamil Nadu & Vice-President, IChE graced the occasion as a Guest of Honour. In his address he mentioned about the challenging opportunities for career oriented chemical engineering students and also appreciated the programmes being organized by Amaravati Regional Centre.

Dr. Avijit Ghosh, Department of Chemical Engineering, Heritage Institute of Technology, Anandapur, Madurda, Kolkata & Honorary Secretary, IChE graced the function as Guest of Honour. In his message he mentioned about the various activities being organized by IChE for the benefit of the chemical engineering students, especially placing the final year students in various companies for internship which is a very useful programme to gain knowledge in the concerned area and know the work culture in the industry. He also said about the incentives being offered to encourage the students and working professionals to become members of IChE. He also mentioned appreciating the activities being organized by Amaravati Regional Centre year round.

Prof. M. Venkateswara Rao briefly explained the purpose of establishing the endowment Lecture with the support of ARC members as one of the annual events of IChE ARC to motivate Chemical & allied Engineering student community especially in Amaravati Regional Centre and expose them to the emerging technological developments and practices of Chemical Engineering and Chemical Industry. He briefly mentioned about his journey from a rural background to the university level education in a city and the social technological challenges he faced and how he overcame them. It is with this background, he said, that the endowment has been initiated that the advanced technological developments in chemical engineering are to be exposed to the students at regular intervals through this endowment lecture. He also expressed his gratitude to all Guests for gracing the occasion and the Speaker Prof. Gani for accepting to deliver the Endowment Lecture.

Prof. A. Sarath Babu, Department of Chemical Engineering, NIT Warangal & Member IChE ARC introduced the Endowment speaker Prof. Rafiqul Gani as a pioneering researcher and thought leader in the field of process systems engineering (PSE), and sustainability has been an integral component of his work for more than 30 years. He further said that Prof. Gani has made seminal contributions in both education

and research through his scholarly papers/presentations as well as tools/software, which continue to impact chemical engineering students and practitioners worldwide.

Delivering the Endowment Lecture Prof. Rafiqul Gani systematically introduced the multi layered view of Chemical Engineering and Process Systems Engineering. He has demonstrated a flexible framework for the solution of many problems and highlighted the role of property estimation, process synthesis, modeling, design, optimization and simulation. The examples and problems that he has demonstrated are very useful.



Finally the participants were able to visualize the scope of Process Systems Engineering in meeting the future challenges through this lecture.

At the end, Sri K. Siva Prasada Rao, Asst. Professor, Department of Chemical Engineering, RVR & JC College of Engineering (A) & Executive Committee member of IChE ARC proposed the vote of thanks.

Total number of participants = 409 (students 360 plus faculty and working professionals 49). The huge response of the participants across many regions of the country is the testimony how curious and enthusiastic the participants are to listen to the Endowment Lecture.

As per the feedback from the participants, Prof. Gani delivered a highly informative, inspiring and thought provoking lecture on PSE. The participants suggested the organizers to conduct many more events in future.

## VI. SYMPOSIUM ON IDEATION, INNOVATION, DEVELOPMENT, AND TECHNOLOGY TRANSFER OF INDUSTRIALLY SCALABLE PROCESSES

Symposium on **Symposium on Ideation, Innovation, Development, and Technology Transfer of Industrially Scalable Processes** organized by the Department of Chemical Engineering, National Institute of Technology Andhra Pradesh, Tadepalligudem in Association with the Institution's Innovation Council (IIC) and Indian Institute of Chemical Engineers Amaravati Regional Centre (IChE-ARC) was successfully organized on 27.01.2023.

**Symposium on "Ideation, Innovation, Development, and Technology Transfer of Industrially Scalable Processes"**

**Events:** Expert Talks & Invited Lectures, National Energy Conservation Day Celebrations

**Date:** 27-01-2023, Time: 9:00 AM to 5:30 PM  
**Venue:** SRK Academic Complex, NIT Andhra Pradesh

**Registration Link:** [https://docs.google.com/forms/d/e/1FAIpQLS47L\\_Ae0giprHkzIe55dI\\_yeUZsI\\_Dg5mUdTKTJ0-0a3w/viewform](https://docs.google.com/forms/d/e/1FAIpQLS47L_Ae0giprHkzIe55dI_yeUZsI_Dg5mUdTKTJ0-0a3w/viewform)

**Speakers:**

- Prof. Pramod M. Padole, Director (In-Charge), NIT Andhra Pradesh
- Prof. Thamidha Sunil Kumar, IIT Tirupati
- Mr. S. Chiranjeevulu, MRPI, Mangalore
- Prof. G. Arthanareeswaran, NIT Tiruchirappalli
- Prof. M. Venkateswara Rao, RVR & JC CE(A), Guntur

**Coordinators:**

- Dr. Vinoth Kumar Raja, Asst. Prof., Chemical Engg.
- Dr. Dinesh P. Sankar Reddy, Asso. Prof., Chemical Engg.
- Dr. Gourhari Chakraborty, Member, IIC, Department of Chemical Engineering, NIT Andhra Pradesh. Email: [fdp\\_chem@nitandhra.ac.in](mailto:fdp_chem@nitandhra.ac.in)

**Organised by** Department of Chemical Engineering, NIT Andhra Pradesh  
 in Association with Institution's Innovation Council (IIC), and  
 Indian Institute of Chemical Engineers - Amaravati Regional Centre (IICHe-ARC)

Ms. Ganga Bhavani, a final year Chemical Engineering student from NIT AP, Tadepalligudem, invited the guests to the dais and requested Dr. Vinoth Kumar Raja, Head of the Department of Chemical Engineering, to preside over the function and to conduct the proceedings.

The event started with a prayer by Mr. Adithya Ashok, Ms. Nidiganti Gayathri Reddy, and Ms. Seeredy Gana Sai Sri Students of Chemical Engineering from NIT AP, Tadepalligudem.



Presiding over the inaugural function, Dr. Vinoth Kumar Raja, warmly welcomed the dignitaries & participants for the Symposium. He said the NIT AP & IICHe ARC have been active in conducting conferences, seminars; National student's meets relevant to the current needs round the year. The Chief Guest Prof. Dinesh Shankara Reddy in-charge Registrar of NIT AP inaugurated the event along with other guest by lighting the lamp.



Prof. G. Arthanareeswaran, NIT Tiruchirappalli, Dr. T. SunilKumar, IIT Tirupathi & Mr. S. Chiranjeevulu Mangalore Refinery and Petrochemicals Limited (R) graced the occasion as a Guests of Honour. Prof. M. Venkateswara Rao, Dean Examinations, RVR& JC College of Engineering (A) and Honorary Secretary, IICHe Amaravati Regional Center (IICHe ARC) graced the inaugural function as Distinguished Guest. The IICHe Students Chapter and Chemical Engineering Association at NIT Andhra Pradesh's 2<sup>nd</sup> edition of magazine "ABSORB" was released by all dignitaries.





During the tea break, the Poster Presentation session was held.



After tea break, the following speakers delivered the expert talks and invited lectures.

S.No.	Time	Names of the Speaker	Topic
1	11.00 am to 12.00 Noon	Dr. Thamida Sunil Kumar IIT, Tirupati	Prototype development and scaling up of technology readiness level
2	12.00 Noon to 01.00 pm	Dr.G. Arthanareeswaran NIT Tiruchirappalli	Translational research and technology commercialization through a academia-industry collaborations



After Lunch break

3	02.30 to 04.00 pm	Dr. M. Venkateswara Rao Honorary Regional Secretary IChE, Amaravati Regional Centre	Chemical Engineering-present scenario and future opportunities
4	04.00 to 05.00 pm	Mr. S. Chiranjeevulu Mangalore Refinery and Petrochemicals Limited (R)	Crude oil processing and manufacturing of finished petroleum products as per the latest specifications



In addition to the above expert talks and invited lectures, the student activities like poster presentation and photography competitions were also organized. Following are the winner in the student activities.

#### Poster presentation

S.No.	Name	Category	Title
1	K.V.V. Satyannarayana	Ph.D.	Clarification of Citrus Fruit Juices using Tubular Ceramic Membranes
2	Sahana.S.Sringari	M.Tech.	Poster Title: Treatment of Wastewaters Generated by Food Industries using Indian Based Clay
3	Padmashree R	M.Tech.	Enzyme Immobilization on Robust Ceramic Membrane
4	Tarsem Singh	M.Tech.	Computational Analysis on Performance Improvement of Thermal Energy Storage Systems using Phase Change Materials
5	Meghali Bhattacharjee	II B.Tech.	Decarbonisation
6	Abhiram Kalluri	III B.Tech.	Exploring Oxygen Enrichment in IC Engines
7	Bandi Girish	IV B.Tech.	A statistical experiment design approach for optimizing biodegradation of Hydro Carbon in Natural Soil



### Photography competitions

S.No.	Name of the student	Year
1	Mankala Karthik	III B.Tech.
2	Amit Kumar	IV B.Tech.
3	Siddant Patel	II B.Tech.

The activity came to an end by the Valedictory function at 05.00 p.m. Prof. G. Arthanareeswaran, NIT Tiruchirappalli was the Chief Guest. Mr. S. Chiranjeevulu Mangalore Refinery and Petrochemicals Limited (R) and Prof. M.Venkateswara Rao, Dean Examinations, RVR& JC College of Engineering (A) and Honorary Secretary, IChE Amaravati Regional Center (IChE ARC) graced the Valedictory function as Guests of Honour. Presiding over the Valedictory function, Prof. Dinesh Shankara Reddy in-charge Registrar of NIT AP narrated the facilities available in NIT AP. Dr. Vinoth Kumar Raja Head, Department of Chemical Engineering NIT AP summed up the webinar proceedings highlighting the relevance of the webinar and the important points made by the speakers and proposed the vote of thanks.

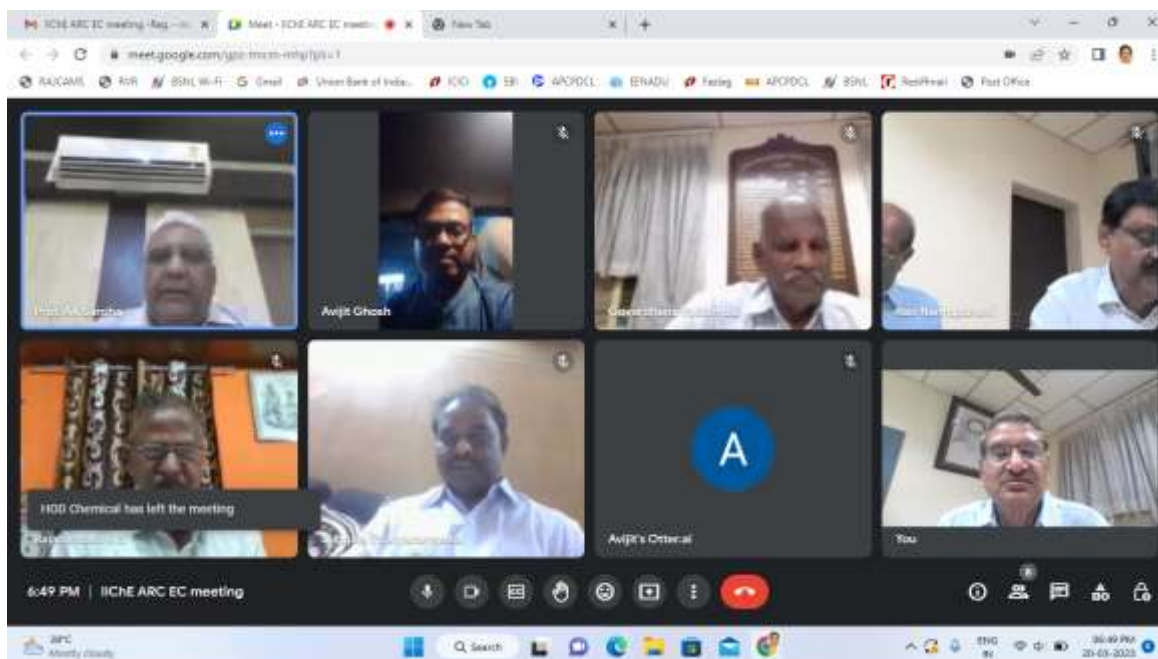
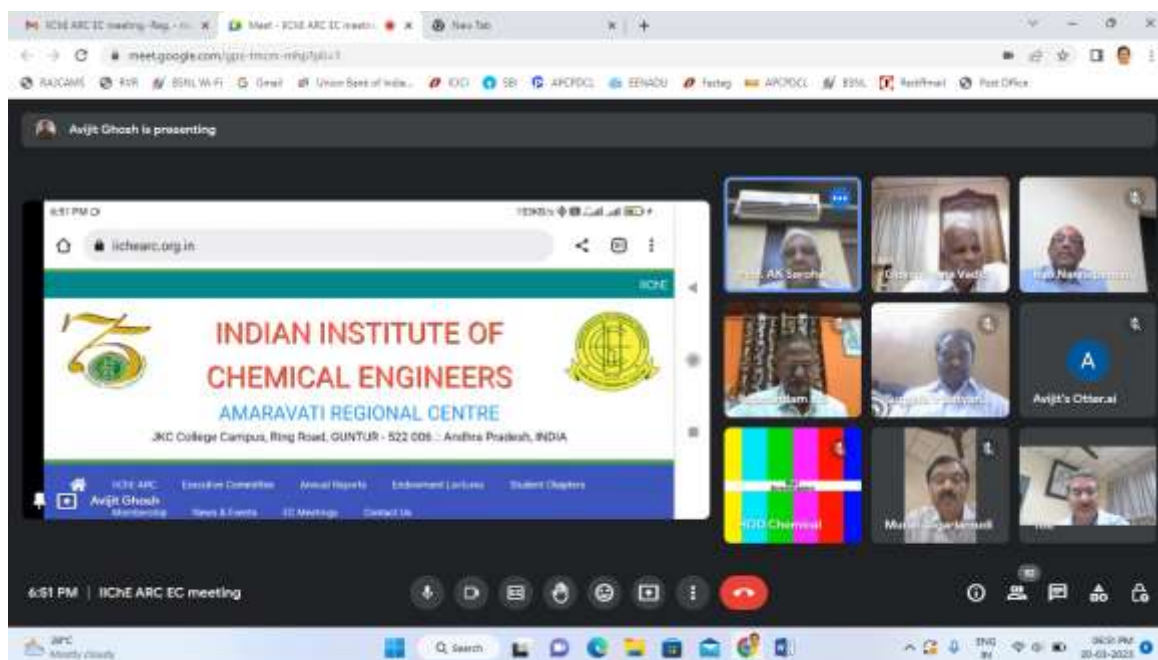
About 200 people including students, faculty and working professionals were participated in the event. The huge response from the participants across many regions of the country is the testimony how curious and enthusiastic the participants are to listen to the expert lectures.



As per the feedback from the participants, all the speakers delivered highly informative, inspiring and thought-provoking lectures. They suggested the organizers to conduct many more symposiums/seminars/webinars future.

## VII. INAUGURATION OF IChE ARC WEBSITE (iichearc.org.in)

The website (iichearc.org.in) was inaugurated on 20.03.2023. Welcoming the guests, Dr. V.Govardhana Rao, Chairman, IChE ARC introduced the Chief Guest Prof. Anil Kumar Saroha president IChE and requested him to inaugurate the IChE ARC website.



Prof. Anil Kumar Saroha inaugurated the IChE ARC website. In his inaugural speech, he spoke about activities which are going to be organized by IChE during the year 2023 and hoped that IChE ARC will be organizing many more activities in future. Dr Avijit Ghosh the Honorary Secretary, Prof. K.S.Rajanandam Vice President, Prof.S.V.Satyanarayana IChE President -2019 and Prof. Anil Verma Editor in Chief, Journal of “Indian Chemical Engineer” participated in the inaugural program as guests and gave their messages. Dr.M.Venkateswara Rao Honorary Regional Secretary proposed the vote of thanks.

## VIII. SYMPOSIUM ON ASPEN PLUS AND ITS SIGNIFICANCE IN CHEMICAL ENGINEERING

Two day workshop on **Aspen plus and its significance in chemical engineering** organized by the Department of Chemical Engineering, National Institute of Technology Andhra Pradesh, Tadepalligudem in Association with the Institution’s Innovation Council (IIC) and Indian Institute of Chemical Engineers Amaravati Regional Centre (IChE-ARC) was successfully organized during 14th & 15th April, 2023.

Department of Chemical Engineering  
NIT Andhra Pradesh

**LET'S LEARN FROM THE GUEST SPEAKERS**

**Dr. Saratbabu Anne**  
Professor  
Department of Chemical Engineering  
National Institute of Technology,  
Warangal - 508004, Telangana, INDIA

**Dr. V. Ramsagar**  
Associate Professor  
Department of Chemical Engineering  
National Institute of Technology,  
Warangal - 508004, Telangana, INDIA

**Dr. Manohar Kakunuri**  
Assistant Professor  
Department of Chemical Engineering  
National Institute of Technology,  
Warangal - 508004, Telangana, INDIA

**14,15 APRIL 2023**

**aspen Plus**  
Technology That Loves Complexity

**WORKSHOP On**  
**Aspen plus and its significance in Chemical Engineering**

**PATRON**  
Prof. Pramod M. Padole  
Director (in-charge)

**COORDINATORS**  
Dr. Vinoth Kumar Raja  
Head & Assist. Prof., Chemical Engg.  
Dr. Dinesh P. Sankar Reddy  
Asso. Prof., Chemical Engg.  
Dr. Gourhari Chakraborty  
Faculty Advisor (CheA), Chemical Engg.

Chemical Engineering Association  
NIT Andhra Pradesh

IChE Student's Chapter  
NIT Andhra Pradesh  
Amaravati Regional Centre

### On 14th April 2023:

Ms. Ganga Bhavani, a final year Chemical Engineering student from NIT AP, Tadepalligudem, invited the guests to the dais and requested Dr. Vinoth Kumar Raja, Head of the Department of Chemical Engineering, to preside over the function and to conduct the proceedings. Prof. Sarathbabu Anne, Dr. V Ramsagar and Dr. Manohar Kakunuri graced the occasion as a Guests of Honour.

The event was started with praying tribute to Dr. B.R Ambedkar on his 132 birthday. Dr. Vinoth Kumar Raja, warmly welcomed the dignitaries & participants for the workshop. He said the NIT AP & IChE ARC have been active in conducting conferences, seminars; National student's meets relevant to the current needs round the year.



Presiding over the inaugural function, the Chief Guest Prof. Dinesh Shankar Reddy in-charge Registrar of NIT AP inaugurated the event along with other guest by lighting the lamp.

After tea break, the following speakers delivered the expert talks and invited lectures.

Date & Day	Time	L/P	Topic
April 14, 2023 Friday	10:00 to 11:30	L1	Introduction to Process Simulation - Dr A Sarath Babu
	11:30 to 13.00	P1	Problem solving session: Simulation of simple units, Sensitivity analysis and Design specification tools - Dr A Sarath Babu & Dr V Ramsagar
April 14, 2023 Friday	14:00 to 15.30	P2	Problem solving session: Fluid Mechanics and Heat Transfer Dr A Sarath Babu & Dr V Ramsagar
	15:30 to 17:00	P3	Problem solving session: Reaction Engineering - Dr A Sarath Babu & Dr V Ramsagar



**On 15th April 2023:**

The following speakers delivered the expert talks and invited lectures on second day of the workshop.

April 15, 2023 Saturday	09:00 to 10.30	L2	Design and Development of Sustainable Battery Systems Dr Manohar Kakunuri
	10:30 to 12:30	P4	Problem solving session: Material and Energy Balances Dr A Sarath Babu & Dr V Ramsagar
April 15, 2023 Saturday	14:00 to 15.00	P5	Problem solving session: Material and Energy Balances - Dr A Sarath Babu & Dr V Ramsagar
	15:00 to 16:30	P6	Problem solving session: Mass Transfer - Dr A Sarath Babu & Dr V Ramsagar



The two activity came to an end by the Valedictory function at 04.30 p.m. Prof. Sarath babu Anne, Dr. V Ramsagar and Dr. Manohar Kakunuri graced the Valedictory function as Guests of Honour. Presiding over the Valedictory function, Prof. Dinesh Shankara Reddy in-charge Registrar of NIT AP narrated the facilities available in NIT AP. Dr. Vinoth Kumar Raja Head, Department of Chemical Engineering NIT AP summed up the workshop proceedings highlighting the relevance of the workshop and the important points made by the speakers and proposed the vote of thanks.





About 60 people including students, faculty and working professionals were participated in the event. The huge response from the participants across many regions of the country is the testimony how curious and enthusiastic the participants are to listen to the expert lectures.



As per the feedback from the participants, all the speakers delivered highly informative, inspiring and thought-provoking lectures. They suggested the organizers to conduct many more symposiums/seminars/webinars future.

## IX. NATIONAL SEMINAR ON HYDROGEN-CAN IT BE THE SAVIOUR OF THE EARTH FROM GLOBAL WARMING?

Two day National Seminar on “**Hydrogen-Can it be the saviour of the Earth from Global warming?**” was successfully organized during 28<sup>th</sup> & 29<sup>th</sup> April, 2023 by IChE Amaravati Regional Center in association with all student chapters under IChE ARC. On 28.04.2023 at 09.15 am, the National Seminar was inaugurated by **Padmashri Prof G D Yadav** Former Vice Chancellor, Institute of Chemical Technology, Matunga, Mumbai and **Dr S S V Ramakumar** Director (R&D) & Board Member, Indian Oil Corporation Limited, Faridabad.



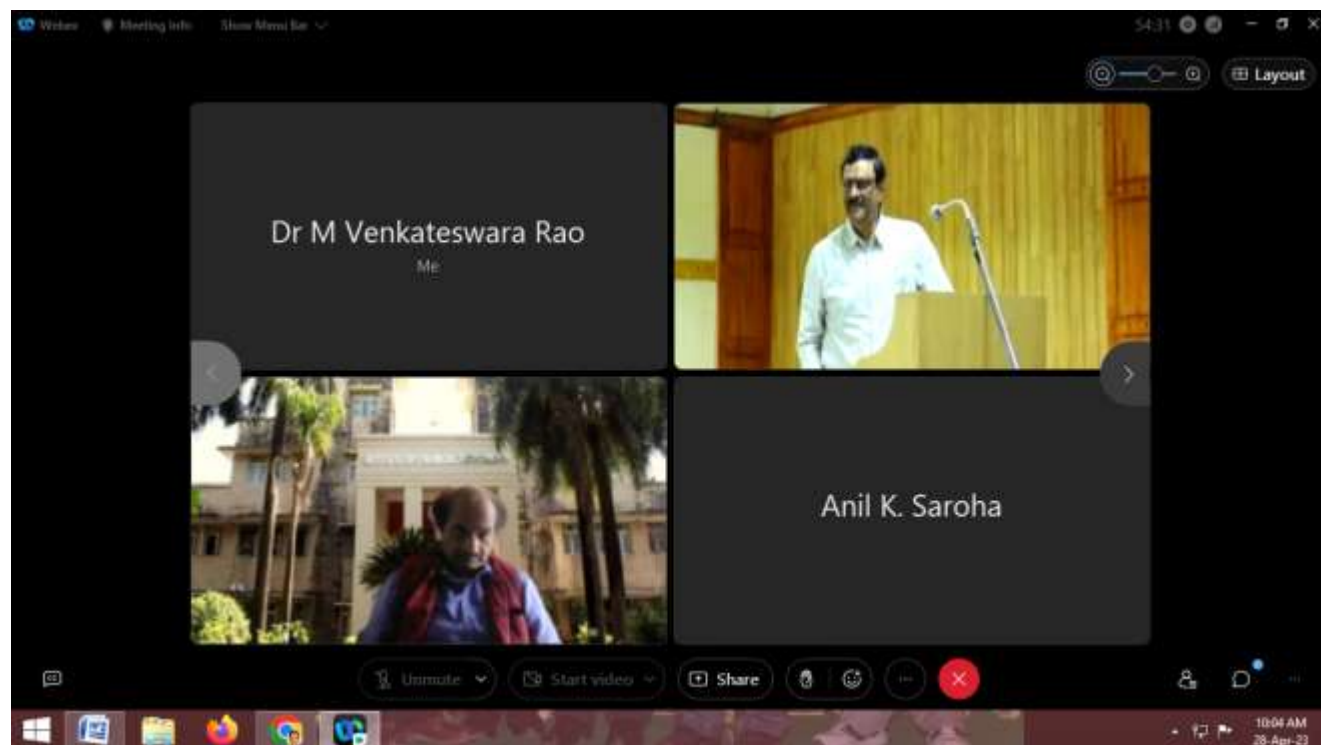
**Dr. V. Govardhana Rao**, former professor IITB & Chairman IChE ARC presided over the inaugural function, spoke about the importance and relevance of organizing the series of webinars in his opening remarks and conducted the proceedings. **Dr M Venkateswara Rao** Professor in Chemical Engineering & Dean Examinations RVR&JC CE and Honorary Regional Secretary, IChE ARC welcomed the guests and participants.. **Sri J Murali Mohan** Vice President, RVR & JC College of Engineering (A) & Immediate post Chairman, IChE ARC narrated the programs organized by IChE ARC. **Dr Kolla Srinivas** Principal, RVR & JC College of Engineering (A) blessed the inaugural function as guest of honour. **Dr G Ranga Rao** Professor, Department of Chemistry. IITM, Chennai and **Dr C V V Satyanarayana** former Chief Scientist CSIR-National Chemical Laboratory, Pune graced the Inaugural function as special Guests.



The following speakers delivered the expert lectures.

<b>S.No.</b>	<b>Date and time</b>	<b>Names of the speakers</b>
1	28.04.2023 9.15 am to 10.10.00 am	Inaugural Function
2	10.00 am to 11.00 am	<b>Padmashri Prof G D Yadav</b> Former Vice Chancellor, Institute of Chemical Technology, Matunga, Mumbai. <b>Title:</b> The Net Zero Goal & Sustainability: Adoption of Green Hydrogen Technologies, CO <sub>2</sub> Refineries, Biomass Valorization & Plastic Recycling.
	11.00 am to 12.00 Noon	<b>Dr S S V Ramakumar</b> Director (R&D) & Board Member, Indian Oil Corporation Limited, Faridabad. <b>Title:</b> Decoding Hydrogen Ecosystem – Indian Oil’s Initiatives.
	12.00 Noon to 01.00 pm	<b>Dr C V V Satyanarayana</b> Former Chief Scientist CSIR-National Chemical Laboratory, Pune. <b>Title:</b> Current methods of Hydrogen production from fossil fuels-How to turn this Grey H <sub>2</sub> to Blue H <sub>2</sub> .
	02.30 pm to 3.45 pm	<b>Dr Santhoshkumar D Bhat</b> Sr Principal Scientist, CSIR- Central Electrochemical Research Institute, CSIR Madras complex, Chennai <b>Title:</b> Research opportunities and technology challenges in hydrogen utilized polymer electrolyte fuel cells
3	03.45 pm to 05.00 pm	<b>Dr K Selvaraj</b> Principal Scientist CSIR-National Chemical Laboratory, Pune. <b>Title:</b> Sustainable Electrolyzer Technology: A key to global decarbonization.
4	29.04.2023 10.00 am to 11.30 am	<b>Prof A M Kannan</b> Professor, The Polytechnic School, Ira A Fulton Schools of Engineering PRLTA 335A, Arizona State University USA. <b>Title:</b> Batteries and their role in advancing renewable H <sub>2</sub> initiatives.
	11.30 am to 01.00 pm	<b>Dr C S Gopinath</b> Outstanding Scientist and Deputy Director, CSIR-National Chemical Laboratory, Pune. <b>Title:</b> Hydrogen Economy - India's ambitions
5	02.00 pm to 03.00 pm	<b>Dr R R Sonde</b> Visiting Professor, IIT Delhi, Former Executive Vice President, Research, Technology & Innovation, Thermax Ltd. <b>Title:</b> Energy Transition: Biggest challenge to globe.
	03.00.00 pm to 04.00 pm	<b>Dr G Ranga Rao</b> Professor, Department of Chemistry. IITM, Chennai <b>Title:</b> Hydrogen production by photochemical and thermo-chemical methods.

	04.00.00 pm to 05.00 pm	<b>Sri S R Udayan</b> Vice-President, Reliance Industries Ltd., Jamnagar. Title: Green Hydrogen role as clean fuel: Opportunities, Challenges, and Safety.
6	5.00 pm onwards	Valedictory Function





The following members of IChE were chaired the technical sessions

S.No.	Date and time	Names of the Chair Person
1	28.04.2023 09.15 am 01.00 Noon	<b>Dr. V. Govardhana Rao</b> , Former Professor, IITB & Chairman, IChE ARC.
	02.30 pm to 5.00 pm	<b>Dr. P. Dinesh Sankara Reddy</b> , Professor in Dept. of Chemical Engineering and in charge Registrar, NIT AP.
2	29.04.2023 10.00 am to 01.00 pm	<b>Dr C V V Satyanarayana</b> Former Chief Scientist CSIR- National Chemical Laboratory, Pune.
	02.00 pm to 5.00 pm	<b>Dr Subbaiah Tondepu</b> Professor, Dept. of Chemical Engineering & Research Adviser, Vignan University (deemed to be University), Vadlamudi, Guntur.

The Two Day activity came to an end by the Valedictory function at 05.00 p.m. on 29.04.2023. **Dr G Ranga Rao** Professor, Department of Chemistry. IITM, Chennai and **Dr C V V Satyanarayana** Former Chief Scientist CSIR- National Chemical Laboratory, Pune graced the

function as Guest of Honours. **Dr. V. Govardhana Rao** Chairman, IChE ARC presided over the Valedictory function.

The speakers covered a wide range of issues in respect of energy transition from fossil fuels based economy to hydrogen economy as described below:

The basic favorable properties of hydrogen such as its density, ignition temperature in the context of safety as compared to other fossil fuels, the codes and standards for hydrogen facility and safety aspects of hydrogen handling in storage and transportation were presented. The renewable energy share in the world energy utilization will have to increase from current 27% to 51% by 2035 and to 73% by 2050 to reduce carbon emissions. The world hydrogen demand is expected to be 600 to 800 MT by 2050. The important message is the access to technology instead to access to resources for hydrogen economy as hydrogen is produced from natural renewable resources. World hydrogen investments would go up to about \$125 trillion by 2050. As India is concerned, the transition to hydrogen economy from fossil fuels to renewables is gradual and it is expected to be carbon neutral by 2070. Indian government is putting a road map for green hydrogen to turn India a global green hydrogen hub and the energy production target from renewable sources is 500 GW by 2030. The Indian government, under the National green hydrogen mission, is expected to spend Rs. 20,000 crores in the coming years, of which about Rs. 400 crores are committed to spend on R&D on various kinds of electrolyzers to produce hydrogen from renewable power with ultimate goal of producing hydrogen less than US\$ 2/kg of hydrogen by 2050 and on Different kinds of fuel cells which can be operated in a temperature range between 160 °C to 1000 °C with their applications for vehicle operation at lower temperature in combination with battery and stationary applications at high temperature. The speakers suggested strategy on hydrogen energy transition: a) maximize energy from solar PV, b) reinvent through gasification and integrate with carbon capture utilization and petrochemicals etc d) use of fuel cells with battery in transport vehicles, e) maximize nuclear energy via small modular reactors(SMR), f) implementing circular economy. Other important point mentioned was STEM based education with experimental methods of education with ethics.

The transition to hydrogen economy encounters many challenges that include large scale infrastructure for refilling stations, the cost of hydrogen production, storage and transport. These challenges can be sorted out by partnerships among companies, continue collaborative research to develop technology for production of sustainable hydrogen commercially.

The speakers clarified the doubts and the questions raised by the participants and encouraged them to be in touch with them if they need know more on the concerned topics. At the end of the valedictory function **Dr. M. Venkateswara Rao**, Honorary Regional Secretary, IChE ARC summed up the National Seminar proceedings highlighting the relevance of the Seminar and the important points made by the speakers and proposed the vote of thanks.

Total number of registered participants = **699** including 200 offline participants (students, faculty and working professionals). The huge response from the participants across many regions of the country is the testimony how curious and enthusiastic the participants are to listen to the expert lectures.

As per the feedback from the participants, all the speakers delivered highly informative, inspiring and thought provoking lectures on the potential of hydrogen energy to replace fossil fuel based economy, the current developments in electrolyzers for production of hydrogen and

hydrogen fuel cells. They suggested the organizers to conduct many more such webinars in future.

#### **X. ENROLLMENT OF NEW IChE LIFE MEMBERSHIP**

The following 11 members were enrolled as IChE life members from ARC

1	LM-73446	Anand Mohan Jaldu
2	LM-73447	Pusuluri Basavapurnaiah
3	LM-73448	Karuna Kumar Karri
4	LM-73449	Ramesh Babu Pamidi
5	LM-73450	Pamidi Venkateswarlu
6	LM-73451	Nagaboiana Renu Babu
7	LM-73452	Jogi Srinivasa Rao
8	LM-73453	Munnangi Hanumantha Rao
9	LM-73454	Mohammad Mia Shaik
10	LM-73455	Tulasi Babu Inkollu
11	LM-73489	Pasumarthy Sambasiva

#### **XI. UPDATION OF INFORMATION IChE ARC MEMBERSHIP INFORMATION**

All the member's information related to IChE ARC is updated with mail IDs and mobile numbers except the following five members for whom the data is not available (Annexure V).

1	LM 20798	Mr. S.S. Mallikharjuna	
2	LAM 28105	Mr V.B.V.Ramana Murthy, Tanuku	
3	LAM 59485	Dr. B. Venu Babu	
4	LM 70969	Dr Ravi Kumar Madugula	
5	LM 9288	Mr. Palli Sita Rama Reddy	<b>He is no more</b>
6	LAM 28114	Mr B. Ramesh Babu	

#### **XII. ENROLLMENT OF STUDENT MEMBERSHIP**

- a) RVRJCCE Student Chapter - **42**
- b) Vignan's Foundation for Science, Technology and Research (Deemed to be University) Student Chapter – **31**

#### **XIII. STUDENT CHAPTER ACTIVITIES.**

##### **RVRJCCE Student Chapter**

##### **Guest Lectures Organized**

- a) SrinivasaRao P, Professor, Department of Mathematics and Computing, Indian Institute of Technology (ISM), Dhanbad, delivered a lecture to all third and final year students on 'Simulations in Fluid Dynamics' on July 18, 2022.
- b) Chiranjeevulu, Retd. Chief Manager, ONGC-MRPL, Rajahmundry, delivered a lecture to all third- and final-year students on 'An Overview of Petroleum Refineries' on Aug. 16, 2022.

- c) Ravi Sankar, Deputy Manager, Environmental Health & Safety, Jindal Urban Waste Management Guntur Ltd., delivered a lecture to all third and final year students on ‘Solid waste management and waste to energy’ on September 12, 2022.
- d) Venkateswarlu, General Manager, M/s. Jocil Limited (Soaps), Guntur, delivered a lecture to all students on ‘Career Options after Chemical Engineering’ on September 15, 2022.
- e) Pavan Kumar Gowra, Assistant Manager, IPDO Department, Telangana, delivered a lecture to all third- and final-year students on the ‘Role of Chemical Engineer in Pharmaceutical Industries’ on Nov. 26, 2022.
- f) Sri D. Krishna Sabarish, Software Developer Engineer, Gold Hill Excelsior, Electronic City Phase-II, Bangalore, delivered a lecture to all students on ‘opportunities for Chemical Engineers’, on Dec. 30,2022.
- g) Sri A. Bhavani Shankar, Senior Engineer, International Internet, International Internet of Things (IIOT), Madhapur, Hyderabad, delivered a lecture to all students on ‘Simulations Software usage for Chemical Engineers’, on Dec. 30, 2022.
- h) Raivindra Ravuri, Principal Lead Consultant, Det Norske Veritas (DNV), Dubai, delivered a lecture to all students on ‘Pipe Line Simulation’, on Jan. 20, 2023.

### **Seminars**

- Seminar on ‘Opportunities in Chemical Engineering’, organized by the department of Chemical Engineering in association with the IChE RVR&JCCE student chapter, September 15, 2022

### **Industrial visit**

- The students of II year went on a short tour to M/s. JOCIL Ltd.,Dokiparru, Guntur, on Sep. 7, 2022.

### **XIV. AWARDS**

IChE Amaravati Regional Center was bestowed with **Best Regional Centre** Award for the year 2021-2022 under B Category Regional Centers.

With this, I submit the annual report together with the income expenditure statement cum balance sheet for the financial year 2022-23 for approval of esteemed members of Indian Institute of Chemical Engineers, Amaravati Regional Center.

Thank you one and all



(M.Venkateswara Rao)  
Hon. Regional Secretary, IChE-ARC