

Report on Expert Lecture

"Research Trends in the Field of Chemical Engineering"

Date: 30th September 2024

Time: 12:30 PM to 01:30 PM

Venue: Aryabhatta Hall, L.D. College of Engineering, Ahmedabad

Organized by: Department of Chemical Engineering

Coordinators: Dr. Supritam Dutta, Dr. Shital Amin, Dr. Ronak Patel

Speaker: Dr. Nitin Padhiyar, Associate Professor, Chemical Engineering Department, Indian Institute of Technology, Gandhinagar

Introduction:

The Department of Chemical Engineering at L.D. College of Engineering organized an insightful expert lecture on "Research Trends in the Field of Chemical Engineering." The session, aimed at 7th semester undergraduate students and 1st and 3rd semester postgraduate students, provided a platform to explore current and future research avenues in the chemical engineering domain. Dr. Dutta welcomed Dr. Padhiyar at the outset and Dr. Patel introduced Dr. Padhiyar to the audience by briefly describing his accomplishments.

Overview of the Lecture:

The lecture was delivered by **Dr. Nitin Padhiyar**, an Associate Professor from IIT Gandhinagar, renowned for his research contributions in chemical engineering. He highlighted cutting-edge developments and innovative trends shaping the future of the field.

Dr. Padhiyar emphasized how chemical engineering, traditionally focused on process optimization and chemical reactions, is now integrating emerging technologies such as **artificial intelligence (AI)**, **machine learning (ML)**, and **sustainable practices** to solve complex industrial challenges.

Key Discussion Points:

- Artificial Intelligence in Chemical Engineering:** Dr. Padhiyar discussed the growing role of AI and ML in optimizing chemical processes, particularly in predictive modeling, process control, and material discovery. He shared how AI is being used to design more efficient reactors, reduce energy consumption, and minimize waste production.
- Sustainability and Green Technologies:** A significant part of the lecture was dedicated to discussing sustainable practices and their importance in reducing the environmental footprint of the chemical industry. Topics like carbon capture and storage (CCS), bio-based chemicals, and renewable energy integration were addressed, focusing on how they are redefining the future of chemical manufacturing.

3. **Advanced Materials and Nanotechnology:** Dr. Padhiyar spoke about recent advances in nanotechnology and materials science, explaining how these innovations are enabling more efficient catalysis and separation processes, improving energy storage, and creating new applications in biotechnology.
4. **Process Intensification:** He also touched upon the concept of process intensification, which involves designing smaller, more efficient equipment that increases the productivity of chemical processes while reducing energy consumption and costs.
5. **Energy and Environmental Engineering:** Another area of focus was energy-efficient systems and their application in chemical industries. The shift towards renewable energy sources and the development of energy-efficient chemical processes were discussed in detail.

Dr. Nitin Padhiyar also briefed about the various R&D facilities at IIT, Gandhinagar. He has also described opportunities for L.D.C.E. students for the enrollment as PhD scholar at IIT, Gandhinagar.

Session on Art of Leaving:

Dr. Padhiyar also taken 10 min session on meditation. It was necessity of the hour to deal with different stresses in student life. Students appreciated the effort by the speaker.

Glimpses of the Session: Attached as Annexure-A.

Student Attendance: 80 UG students and 23 PG students attended the session. Attendance sheet is attached herewith.

Interaction and Conclusion:

The lecture was followed by a highly interactive question-and-answer session where students and faculty members had the opportunity to engage with Dr. Padhiyar on various research-related queries. The session sparked curiosity among students, encouraging them to explore research opportunities in the field and participate in ongoing projects.

In conclusion, the lecture was a great success, providing a comprehensive overview of the latest research trends in chemical engineering and motivating students to actively engage in cutting-edge research.

At the end lecture ended by vote of thanks, given by Dr. Shital Amin.

Annexure-A

Glimpses of the Expert Lecture by Dr. Nitin Padhiyar





Attendance for Expert Lecture on

“Research Trends in the Field of Chemical Engineering”

Date: 30/09/2024

Time: 12:30 PM to 01:30 PM

Semester: VII (UG)

Sr. No.	Name	Enrollment No.	Signature
1	Himanshu Prayapati	220283105002	<i>Himanshu</i>
2	Sumeet Panchal	220283105007	<i>Sumeet</i>
3	Piyush Samraiya	220283105016	<i>P.S. Samraiya</i>
4	Darshan Patil	220283105010	<i>Darshan</i>
5	Nameent Kumar Singh	220283105006	<i>Nameent</i>
6	Sury Pal	210280105054	<i>Sury</i>
7	Happy Choudhary B.	210280105012	<i>Happy</i>
8	Dev Subhankar S.	210280105036	<i>Subhankar</i>
9	Vaghela Jeeladhas	210280105042	<i>Jeeladhas</i>
10	Mayank Kumar Rathva	210280105064	<i>Mayank</i>
11	Vrinda Beraiya	210280105045	<i>Vrinda</i>
12	Patel Mohit. A	220283105009	<i>Mohit</i>
13	Beraiya Nilesh T.	210280105066	<i>Nilesh</i>
14	Abhijit Nivarna	210280105053	<i>Abhijit</i>
15	Gohil Jaysinh	210280105043	<i>Jaysinh</i>
16	Jaydeep Channa	210280105055	<i>Jaydeep</i>
17	MAKANA CHAKRABARTI	210280105038	<i>MAKANA</i>
18	Yash Patel	210280105041	<i>Yash</i>
19	Rathwa Aarav J.	210280105049	<i>Rathwa</i>
20	Prasadkumar Dabhi	210280105004	<i>Prasad</i>
21	Smrit Nemadeiya	210280105012	<i>Smrit</i>
22	Parman Jayesh V.	210280105068	<i>J.V. Parman</i>
23	Raj Nandha	210280105021	<i>R. Nandha</i>
24	Jectendra Chavhan	210280105005	<i>Jectendra</i>
25	Nishant Panchasara	210280105014	<i>Nishant</i>
26	Parshva Samani	220283105016	<i>Parshva</i>
27	Khetiya Pravin	220283105003	<i>Pravin</i>
28	M. Chitram Nagdawala	220283105005	<i>M. Chitram</i>
29	Renuk Singh	210280105059	<i>Renuk</i>
30	Devendra Singh	220283105020	<i>Devendra</i>

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Sr. No.	Name	Enrollment No.	Signature
31	Bayapati Vivek	220283105014	Vivek
32	VASAVA Vivek's	210280105057	Vivek
33	Bayapati smitumar kishorai	220283105013	Bayapati Smitumar
34	Tailor Meet Jayeshbhai	220283105019	Meet
35	Vinit D. Sorunki	220283105017	V. Sorunki
36	Bayapati devanshu . N	220283105012	D. N. P.
37	Mistry Deep P.	210280105035	Deep
38	Patel Kuldip J.	210280105033	K.J.
39	Patel Prince V.	210280105044	P.V.
40	Patel Dhruvil J.	210280105026	D.J.
41	zulusana Dharmik K.	210280105047	D.K.
42	Patel Zeel M.	210280105039	Zeel
43	Krish Bhimani	210280105001	K. B. Bhimani
44	Vaideti Lavaliya	210280105037	Vaideti
45	Suraj Manu	210280105030	Suraj
46	Raateek Ghediya	210280105016	R. Ghediya
47	Foram Singh	210280105046	Foram
48	Sujal Sapariya	210280105017	Sujal
49	Nimul Jadia	210280105013	Nimul
50	Vish . V. Shah	210280105050	V.V.S.
51	Urvi . A - sharma	210280105010	Urvi
52	Tailor Megh B.	210280105011	Megh
53	chintan ghadi Gadhai	210280105020	Chintan
54	Chiraj sonolikar	210280105056	Chiraj
55	Patel Divyesh J.	210280105029	Divyesh
56	Jam Altaf K.	210280105067	Jam Altaf K.
57	Rajkondalkar	210280105051	Raj
58	Vudumiyu Kenil S.	210280105019	V. Kenil
59	Jenil R. Patel	210280105034	J. Patel
60	Raj B. Patel	210280105048	R. Patel

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Semester: VII (UG)

Sr. No.	Name	Enrollment No.	Signature
61	Masi Darshit M.	210280105007	
62	Chaudhari Arun P.	210280105026	
63	Bhambhani Sadashiv Borse	220283105001	
64	Patel Vishwa S.	210280105006	
65	Patel Riddhi	210280105023	
66	Pipunja Shubham	220283105011	
67	Vatavia Vtseiv Yekariya	210280105062	
68	Mangroliya Uttam	210280105008	
69	Savaliya Rut S.	210280105060	
70	Yekariya Dixit G.	210280105024	
71	Ramani Ghanshyam K.	220283105015	
72	Harsh Patel	210280105022	
73	Pethuni Harshil S.	210280105027	
74	Patel Arjun R	210280105031	
75	Dheerajayal Jay D.	210280105018	
76	Dalgi Abish Jagdebhai	220280105040	
77	Rishikesh Palani	210280105039	
78	Dhrupun Pansuriya	210280105003	
79	Poince Subhaya	210280105028	
80	Modhuni Jagrui	210280105015	
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Attendance for Expert Lecture on

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Date: 30/09/2024

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Semester: I and III (PG)

Sr. No.	Name	Semester	Enrollment No.	Signature
1	Ghaxiya shivdat	ME-III	230280772004	
2	Hiten Parmar	II	230280772011	
3	UMang mevang	II	230280772008	
4	Dhaval Patel	II	230280772012	
5	Dr. Dhruvik Sunani	ME-I	-	
6	Zil's Patel	ME-I	-	
7	Sachin Sonagara	ME-I	-	
8	Dhruv Pansuriya	ME-I	-	
9	Jayesh Patel	ME-I	-	
10	Parth meji	ME-I	-	
11	Koladiya Sumket M.	ME-I	-	
12	Bhatt Pathey	ME-I	-	
13	Grandhi yash M.	ME-I	-	
14	CSon Khyati U.	ME-I	-	
15	Patel dhvani K	ME-I	-	
16	Patel Samarth S.	ME-I	-	
17	Jignesh Khimani	ME-III	230280772014	
18	Ankit parjapati	ME-III	230280772016	
19	Shailish Navi	ME-III	230280772021	
20	Jignesh Vaghjiyani	ME-III	230280772022	
21	Arun Yadav	ME-III	230280772023	
22	Yogin Bhavsar	ME-III	230280772001	
23	Atul Patel	II	II 14	
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