ANNAMALAI UNIVERSITY

(A State University Accredited with 'A' Grade by NAAC)

Faculty of Engineering & Technology

DEPARTMENT OF CHEMICAL ENGINEERING

Annamalai University
90th Anniversary Celebrations

TECHAZINE

2020

EDITORIAL PREFACE

The editorial board wishes its readers a pleasant journey as they thumb through the pages of this issue Annamalai University will be proud to see one more generation of Chemical Engineers progressing towards their destiny, of strength, purpose, design and fulfilment.

In spite of the accelerated courses and the early pandemic situation we found some time to conduct some informative events and to bring out our traditional magazine-TECHAZINE, thanks to the faculty members and students of the Department.

We expect the forth-coming students to keep up the traditions and heritage of the department and to be more enthusiastic in Co-curricular activities.

We sincerely thank our Head of the Department and all our beloved faculty members for their ardent support through these years.

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DEPARTMENT OF CHEMICAL ENGINEERING

Message from

Professor & Head,Department of Chemical Enginnering,

It gives me immense pleasure to note that our Chemical Engineering students are magazine "Techazine" – Technical magazine in a perfect fusion of literary articles, personal experiences, technical information, snippets, art and photography which reflects the hidden talents and creativity of our students, such activities bring out the creativity of the students and enhances their skills, leadership, quality and team work.

I am very much happy to convey my best wishes to all the students, faculty members and Editorial Board members for their endeavours in bringing out this wonderful "Techazine" magazine.

- Dr. C. Karthikeyan

ABOUT THE DEPARTMENT

The Department of Chemical Engineering, a DST –FIST sponsored department, was started in the year 1945. It was the second college to offer an undergraduate programme in Chemical Engineering in Tamilnadu. Total outlay of the funding attracted by the department from various funding agencies is 341.51 Lakhs. All the laboratories are well equipped with most modern equipment. The department offers consultancies to various leading industries.

The first PhD of the Faculty of Engineering and Technology is from this department and has thus far produced 104 Ph.Ds . The department offers 12 programmes through Distance Education. It has an excellent industrial tie up. The department boasts an unparalleled support from its Alumni.

ANNAMALAI UNIVERSITY

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Faculty of Engineering & Technology

Pro-Chancellor: ***Mr. K. ANBALAGAN***

Vice-Chancellor: ***Prof. V. MURUGESAN***

Registrar: ***Prof. M. RAVICHANDRAN***

Prof. N. KRISHNAMOHAN

Dean,
Faculty of Engineering and Technology: ***Prof. R.RAGUKANTHAN***

EDITORIAL COMMITTEE

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Seminar Secretary	**R.Nandhini**
Placement Secretary	**C.Kanagapreethi**
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In plant Training Secretary	**K.Sheak dhawoth**
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Additional In plant Training Secretary	M.Ajay Prakash
Additional Joint sports Secretary	K.Arun Kumar
Lady Secretary	D.Nirubamaa
Additional Literary secretary	T.Agastin Raj
Additional Placement Secretary	C.Sathish
IEI Treasurer	V.Vinoth

Name of the Course	Class Student Representative
B.E. Chemical Engineering – II year (A-Batch)	K.Arivazhagan
B.E. Chemical Engineering – II year (B-Batch)	I.Sivasuriyan
B.E. Chemical Engineering – III year(A-Batch)	S.Jayaprakash
B.E. Chemical Engineering – III year (B-Batch)	K.Hariharan
B.E. Chemical Engineering – IV year (A-Batch)	K.Monica
B.E. Chemical Engineering – IV year (B-Batch)	K.Anu

DEPARTMENT OF CHEMICAL ENGINEERING

FACULTY DETAILS

S.No	Name	Designation
1.	Dr.C.Karthikeyan	Professor & Head
2.	Dr.R.Dhanasekar	Professor
3.	Dr.R.Saravanan	Professor
4.	Dr.P.Mullai	Professor
5.	Dr.B.Preetha	Professor
6.	Dr. M.Thenmozhi	Professor
7.	Dr.P.Nagarajan	Professor
8.	Dr.M.Rajasimman	Professor
9.	Dr.R.Muthuvelayudham	Professor
10.	Dr.R.Ravi	Professor
11.	Dr.B.Chirsabesan	Professor
12.	Dr.B.Suresh	Professor
13.	Dr.S.Anhuradha	Associate Professor
14.	Dr.S.Dhanasekaran	Associate Professor
15.	Dr.K.Thirumavalavan	Associate Professor
16.	Dr.M.Vijay	Associate Professor
17.	Dr.M.Karuppaiya	Associate Professor
18.	Dr.M.G.Devanesan	Associate Professor
19.	Dr.B.Sivaprakash	Associate Professor
20.	Dr.R.Ramsenthil	Associate Professor
21.	Dr.C.S.Rathnasabapathy	Associate Professor
22.	Dr.V.Saravanan	Associate Professor
23.	Dr.T.R.Manikandan	Associate Professor
24.	Dr.K.Manikandan	Associate Professor

S.No	Name	Designation
25.	Dr.B.Gopalakrishnan	Associate Professor
26.	Dr.T.Balamurali	Associate Professor
27.	Dr.G.Durai	Associate Professor
28.	Dr.S.Arrivukkarasan	Associate Professor
29.	Dr.P.Elavarasan	Associate Professor
30.	Dr.P.Sudhakar	Associate Professor
31.	Dr.S.Subhagar	Associate Professor
32.	Dr.S.Rengadurai	Associate Professor
33.	Dr.S.Ramesh	Associate Professor
34.	Dr.V.Baskaran	Assistant Professor
35.	Dr.S.Shanmugananthan	Assistant Professor
36.	Dr.K.Jayabalan	Assistant Professor
37.	Dr.P.Balamurugan	Assistant Professor
38.	Mr.K.Subanandam	Assistant Professor
39.	Dr.S.B.Riswan Ali	Assistant Professor
40.	Dr. P. Manivannan	Assistant Professor
41.	Dr.A.Magesh	Assistant Professor
42.	Dr.P.Rathakrishnan	Assistant Professor
43.	Dr.K.Muralikandhan	Assistant Professor
44.	Dr.R.Jayakumar	Assistant Professor
45.	Dr.R.Palaniraj	Assistant Professor
46.	Dr.R.Rajesh Kannan	Assistant Professor
47.	Dr.M.Dilip Kumar	Assistant Professor
48.	Mr.T. Vasanthakumar	Assistant Professor

DAY-TO-DAY DEVELOPMENTS IN CHEMICAL ENGINEERING WORLD

NOBEL PRIZE IN CHEMISTRY 2020

GENETIC SCISSORS: A TOOL FOR REWRITING THE CODE OF LIFE

Emmanuelle Charpentier and Jennifer A. Doudna have discovered one of gene technology's sharpest tools: the CRISPR/Cas9 genetic scissors. Using these, researchers can change the DNA of animals, plants and microorganisms with extremely high precision. This technology has had a revolutionary impact on the life sciences, is contributing to new cancer therapies and may make the dream of curing inherited diseases come true. Researchers need to modify genes in cells if they are to find out about life's inner workings. This used to be time-consuming, difficult and sometimes impossible work. Using the CRISPR/Cas9 genetic scissors, it is now possible to change the code of life over the course of a few weeks. "There is enormous power in this genetic tool, which affects us all. It has not only revolutionised basic science, but also resulted in innovative crops and will lead to ground-breaking new medical treatments," says Claes Gustafsson, chair of the Nobel Committee for Chemistry. As so often in science, the discovery of these genetic scissors was unexpected. During Emmanuelle Charpentier's studies of Streptococcus pyogenes, one of the bacteria that cause the most harm to humanity, she discovered a previously unknown molecule, trace RNA. Her work showed that trace RNA is part of bacteria's ancient immune system, CRISPR/Cas, that disarms viruses by cleaving their DNA.

Charpentier published her discovery in 2011. The same year, she initiated a collaboration with Jennifer Doudna, an experienced biochemist with vast knowledge of RNA. Together, they succeeded in recreating the bacteria's genetic scissors in a test tube and simplifying the scissors' molecular components so they were easier to use. In an epoch-making experiment, they then reprogrammed the genetic scissors. In their natural form, the scissors recognise DNA from viruses, but Charpentier and Doudna proved that they could be controlled so that they can cut any DNA molecule at a predetermined site. Where the DNA is cut it is then easy to rewrite the code of life. Since Charpentier and Doudna discovered the CRISPR/Cas9 genetic scissors in 2012 their use has exploded. This tool has contributed to many important discoveries in basic research, and plant researchers have been able to develop crops that withstand mould, pests and drought. In medicine, clinical trials of new cancer therapies are underway, and the dream of being able to cure inherited diseases is about to come true. These genetic scissors have taken the life sciences into a new epoch and, in many ways, are bringing the greatest benefit to humankind.

Chemical Engineering in Nature

Sitting in the middle of a field, I notice signs of first principles rearing its head
As I gaze at bees zooming from flower to flower up ahead.
The innocent act of pollination is mass transfer in its simplest and truest form.
Why? Oh why, in Chemical Engineering, can't that degree of simplicity be the norm?

The sun radiates up above warming me slowly
As a light breeze moves around me, taking some heat with it, quite easily.
Suddenly, the breeze picks up pace creating a state of disorder.
Describing this in terms of entropy could make me sound quite clever
Or cause people to say, 'That does not make you sound any cooler'.

In the nearby river, the fish move as if they race each other.
Using the river currents, they show the effects of convective transfer.
It should be noted that this, for most systems, is a key design feature.
Little did the creatures and elements of nature know
That they too will be dependent on the concept of fluid flow.

As if to remind me of Manchester, the sky opens up moments later to let the rain fall down
And complete its life-cycle all over town.
Roots latch onto the water molecules, absorbing them to sustain the owner's life.
In engineering, we do what we can to also keep nature alive.
As the underlying notion of sustainability is the right of all to thrive.

Under the right conditions, raw materials can be converted into products you know?
From seeds to plants I have watched them grow.
These are nature's own pilot plants.
From photosynthesis to the fruits falling from the branches to be eaten by ants,
Nature is the oldest chemical engineer with a truly amazing talent.

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INSTITUTIONAL VISION

Providing world class quality education with strong ethical values to nurture and develop outstanding professionals fit for globally competitive environment.

INSTITUTIONAL MISSION

- ***Provide quality technical education with a sound footing on basic engineering principles, technical and managerial skills, and innovative research capabilities***
- ***Transform the students into outstanding professionals and technocrats with strong ethical values capable of creating, developing and managing global engineering enterprises.***
- ***Develop a Global Knowledge Hub, striving continuously in pursuit of excellence in Education, Research, Entrepreneurship and Technological services to the Industry and Society.***
- ***Inculcate the importance and methodology of life-long learning to move forward with updated knowledge to face the challenges of tomorrow.***

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DEPARTMENT OF CHEMICAL ENGINEERING

DEPARTMENT VISION

Strive to be widely acknowledged as a department imparting Chemical Engineering with a strong three-pronged commitment to education, research and extension to effectively address the societal needs fostered by a culture encompassing innovation, ethics and excellence and by embracing the good practices in education

DEPARTMENT MISSION

- *Impart quality Chemical Engineering education through a carefully devised program garnered by a curriculum meeting the global benchmarks with an extensive exposure to fundamentals and industrial applications*
- *Transform the students and render them to take up successful careers in Chemical Engineering and prepare them to be leaders and responsible citizens in order to contribute to the society by exhibiting highest degree of professional standards, integrity and ethics.*
- *Expose the students to real time industrial problems and imbibe entrepreneurship by engaging them with interactions involving experts from the industry and the alumni.*
- *Infuse the students with social responsibility to meet the future challenges to provide pertinent solutions for sustainable development through professional competency.*

Faculty of Engineering & Technology
DEPARTMENT OF CHEMICAL ENGINEERING

Program Outcomes (POs)

Engineering Graduates will be able to:

PO1 Engineering Knowledge: ***Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.***

PO2 Problem Analysis: *Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*

PO3 Design/Development of Solutions: *Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.*

PO4 Conduct Investigations of Complex Problems: *Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.*

PO5 Modern Tool Usage: *Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.*

PO6 The Engineer and Society: *Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*

PO7 Environment and Sustainability*: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.*

PO8 Ethics*: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*

PO9 Individual and Team Work: *Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*

PO10 Communication: *Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.*

PO11 Project Management and Finance: *Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*

PO12 Life-Long Learning: *Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change*

FACULTY PUBLICATIONS

S.No.	Name of the Authors	Title of the Paper	Publication Details
1	Jayakumar R, Rajasimman M Karthikeyan C	Column studies on sorption of Cr (VI) from aqueous and electroplating wastewater using acid-treated marine brown algae Sargassummyriocystum,	Journal of Energy Sources, Part A: Recovery, Utilization, and Environmental Effects 1,1-18,2019
2	N.Rajamohan Fatma Al Fazari, M. Rajasimman	Kinetic and Parametric Studies of Refinery Effluent Treatment in Electrochemical Reactor	Journal of Environmental Engineering and Science, Vol.14, 2020
3	Sivaprakash. B	Mathematical Modeling of Commensal Relation between Streptococcus thermophilus and Lactobacillus bulgaricus	American International Journal of Research in Science, Technology, Engineering & Mathematics, Special Issue: National Conference on Innovations in Bio, Chemical and Food Technology, pp 78-81, 2020
4	Sivaprakash. B	Mathematical Modelling of Mutualistic Relation between Geotrichum candidum and Penicillium camembertii - Design of a Chemostat for continual production,	Journal of Applied Science and Computations, Volume VI (V), pp 3348 – 3358, 2020
5	Sivaprakash. B and Manojkumar M.S	Prediction of Vapour Liquid Equilibria for Binary Azeotropic Systems using Activity Coefficient Models,	International Journal of Innovative Technology and Exploring Engineering, Vol 8 , (12S2), pp 67 – 72, 2020
6	Divya Baskaran, Arindam Sinharoy, Kannan Pakshirajan, Ravi Rajamanickam	Gas-phase trichloroethylene removal by Rhodococcus opacus using an airlift bioreactor and its modeling by artificial neural network	Chemosphere, 247, Article no.125806, 2020
7	Divya Baskaran, Arindam Sinharoy, Tanushree Paul, Kannan Pakshirajan, Ravi Rajamanickam	Performance evaluation and neural network modeling of trichloroethylene removal using a continuously operated two-phase partitioning	Environmental Technology & Innovation, 17, Article no. 100568, 2020

8	Divya Baskaran, Ravi Rajamanickam, Baskaran Vaidyalingam	Effect of concentration and gas flow rate on the removal of gas-phase trichloroethylene in a novel packed biofilter	Bioresource Technology Reports, 9, Article no. 100387, 2020
9	Ravi Rajamanickam, Divya Baskaran, Kauselya K, V. Baskaran, Jagannathan Krishnan	Steady State, transient behavior and kinetic modeling of benzene removal in an aerobic biofilter	Journal of Environmental Chemical Engineering, (2), Article No. 103657, 2020
10	Divya Baskaran, Ravi Rajamanickam Kannan Pakshirajan	Experimental Studies and Neural Network Modeling of the Removal of Trichloroethylene Vapor in a Biofilter	Journal of Environmental Management, 250, Article no. 109385, 2019
11	P.Bakiya, S. Arrivukkarasan, S.Anhuradha	Optimization And Its Characterization Of Legumes Based Milk Chocolate To Enhance Its Folic Acid Content	Think India Journal, Volume 22, Number 10, Page No. 1349 – 1354. 2019
12	G.Durai, R.Ramsenthil, E.Krishnaprabhakaran	Occupational Health Hazards of Sugarcane Industry Workers-A Review	Think India Journals, 18,December-2019
13	B.G.Prakash Kumar, Rusal Raj Francis, AishaRaouf, Ramachandran Subramanian, Suresh Gupta, Geetha Kannan, K.Thirumavalavan.	Torrefied materials derived from waste vegetable biomass	M In press, corrected proof, Available online Proceedings, 2020
14	B.Sundar V.saravanan M.Rajasimman	Preformance and behavior under transient conditions for membrane bioreactor treating tolune vapours	International Journal of Scientific & Technology Research, Volume 9, Number 1, January 2020, 993-998
15	R.Rajesh kannan A.Magesh. K. Jayabalan	Bioethanol production from tapioca stem using ssf method – optimization, kinetics and modeling	International Journal of Emerging Technologies and Innovative Research, 6(6).188-199. JETIR publication, 2019
16	R.Rajesh kannan A.Magesh. K. Jayabalan	Application of analytic hierarchy process (AHP) for lignocelluloses pretreatment technique selection	International journal for research in engineering application & management, 5(4).470-476. 2019
17	S.B.Riswan ali	Utilization of Agricultural Waste as a Carbon Source for the Production of Cellulase Enzyme	International Journal of Scientific Research and Reviews, ISSN: 2279–0543, 8(2), 696-704, 2019

18	P.Balamurugan, P.Muthamilselvi P. Balashanmugam	Effective work permit system to minimize the hazards in EID parry(India) limited	International journal of engineering science and mathematics, Volume 8, issue 8, ISSN: 2320-0294, 2019
19	Muthamilselvi P, Ashish Kapoor, Balamurugan P, Prabhakar Sivaraman, Karthikeyan R	Optimization, equilibrium, kinetic and thermodynamic studies on adsorptive remediation of phenol onto natural guava leaf powder	Environmental science and pollution research, December 24 2019.
20	M.K.Yogeswari K.Dharmalingam P.Mullai	Implementation of artificial neural network model for continuous hydrogen production using confectionery wastewater	Journal of Environmental Management Volume 252, 15, 109684, 2019
21	Vishali, Solaiappan; P, Mullai, R. Karthikeyan	Breakthrough and mass transfer studies on the decolourisation of paint industry wastewater using encapsulated beads of Cactus opuntia (fiscus indica)	Desalination and Water Treatment., January2020

EXTENSION ACTIVITIES

2019, 15th Aug - Disinfectant Solution to Govt. School, Kuduveli

2019, 15th Aug - Disinfectant Solution to Ramasamy Chettiar School, Chidambaram

2019, 16th Aug – Disinfectant Solution to Govt. School, Mugayiur

2019, 06th Dec - Disinfectant Solution to CCWE Trust, Chidambaram

2019, 14th Aug - Tree Plantation

2019, 14th Nov - Health Care Programme

2020, 04th March - 49th National Safety Day Awareness Programme

2019, 3rd Oct - 150th year Gandhi Jayanthi Celebration

2020, 23rd Feb - Food Competition for House-wife (TIME-2020)

Guest lecture on Enterprise and Entrepreneur

Date : 13/02/2020

No of Students Participated: 35

Speaker:

Mr. Venkatesan Seshadri

Founder and CEO

Flatpebble.com ,Hyderabad

Organized by

IE(I) Chemical Engineering Students' chapter

Guest lecture on Team and Time Management

Date : 04/03/2020

Speaker:

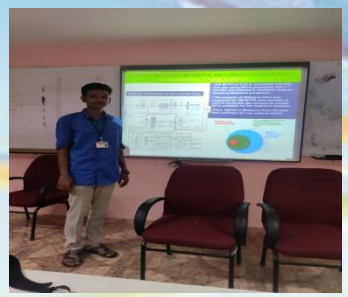
Dr.R. Srtitharan

Associate Professor of Business Administration

Annamalai University

Organized by

IE(I) Chemical Engineering Students' chapter

Paper Presentation on Chemicals and Chemical Engineers for Life

Date : 06/01/2020
Guests of Honor:

Dr. S. Subhagar, Dr. S. Ramesh

Associate Professor of Chemical Engineering

Annamalai University

Organized by

IE(I) Chemical Engineering Students' chapter


One day Seminar on "Process Design and Engineering"

Date : 19/12/2019
No of Students Participated: 70

Speaker: Mr. Mihir Patel

Dy. Head of Engineering

Larsen and Toubro , (LTHE Advent) , Mumbai\

Organized by

IE(I) Chemical Engineering Students' chapter


Model Competition

Date : 03/04/2019
No of Students Participated: 24

Organized by

IE(I) Chemical Engineering Students' chapter

Oral presentation by the IEI student members in the 34th Indian Engineering Congress organized by The Institution of Engineers (India), Telengana State Centre, Hyderabad.

Date : 27 - 29 December 2019

No of Students Participated: 9

Poster Competition

Date : 06/04/2019

No of Students Participated: 12

Organized by

IE(I) Chemical Engineering Students' chapter

Group Discussion

Date : 05/02/2020

No of Students Participated: 40

Organized by

IE(I) Chemical Engineering Students' chapter

15/09/2019

Social Work - Wall Painting at Chidambaram bus stand

Guests of Honor

Shri. Vishu Mahajan

Sub- Collector

Chidambaram

Ms. Niranjana Krishnakumar

Activations Associate,

Pan India Environmentalist Foundation of India

Chennai

CONFERENCES/WORKSHOP/FDP/SEMINAR ORGANIZED

Program Organized	Funding agency	Coordinators	Date	No. of partici pants
Environmental Pollution And Control Technologies (EPACT-2019)	TANSCHE	Dr.C.Karthikeyan Dr.R.Palaniraj Dr.R.Jayakumar	30.8.2019 – 31.8.2019	220
International Conference on Biomass, Fuels & Chemicals	DST-SERB	Dr.R.Dhanasekar	12.9.2019 – 13.9.2019	120
Protect And Promote-Intellectual Property Rights And Patents (PPIPRP-2019)	IQAC	Dr.R.Palaniraj Dr.R.Jayakumar	01.11.2019 – 02.11.2019	43
Enhancing Skills For Effective Teaching-ESET-2019	IQAC	Dr.R.Ramsenthil Dr.B.Sivaprakash	08.11.2019 – 09.11.2019	50
STTP On Safety Training And Management In Workplace	IQAC	Dr.P.Mullai Dr.M.Karuppaiya Dr.K.Manikandan	12.12.19-13.12.19	56
National Conference On Green Chemistry And Engineering Towards Future Technology	CSIR-HRDG, GOI, New Delhi	Dr.P.Elavarasan	30.01.2020 – 01.02.2020	260
Entrepreneurship Awareness Camp	Entrepreneurs hip Development of India	Dr.A.Magesh Dr.K.Jayabalan	30.01.2020 – 01.02.2020	95
National Conference On Recent Trends In Chemical And Environmental Biotechnology	-	Dr.V.Saravanan	14.2.2020-15.2.2020	210
Training Individual Towards Meritorious Enlightenment (TIME 2020)	IQAC	Dr.B.Preetha Dr.S.Anhuradha Dr.S.Arivukkarasan	21.02.2020 to 22.02.2020	200

Students' Endowments

The 1968 batch Alumni of the Department of Chemical Engineering organized Prof.S.M.Lakshmanan, Prof.V.Alagarsami, Prof.S.Rengarajan and Prof.R.Dhanapal Memorial Endowment Lecture on the 18th of September, 2019 in the department. Dr.N.Nagarajan, Management Consultant and` Formerly Assistant General Manager at Petrofac Engineering Services India Private Limited, Chennai also an alumnus of 1970 batch is the speaker. Two prizes are also given to the students as a part of endowment.

Students' Endowments

Alumni Lecture

Students' Acievements

Sl. No	Student Name	Conference	Presentation /Participation	Prize Winner Pace	Date
1.	Nirubaama D	National conference on Emerging trends organized by University college of engineering BIT campus, Anna University	Oral	Second	20/09/2019
2.	Vandhana V	National conference on Emerging trends organized by University college of engineering BIT campus, Anna University	Oral	Second	20/09/2019
3.	Nirubaama D	National conference on Emerging trends organized by University college of engineering BIT campus, Anna University. Awarded in Tech Connexion event	Tech event	First	20/09/2019
4.	Vandhana V	National conference on Emerging trends organized by University college of engineering BIT campus, Anna University. Awarded in Tech Connexion event	Tech event	First	20/09/2019
5.	Vignesh J	National level Techical Symposium Syllogic 2020 orgaized by Kongu Engineering College, Erode	Oral	Third	06-02-2020
6.	Agastin Raj T	National level Techical Symposium Syllogic 2020 orgaized by Kongu Engineering College, Erode	Oral	Third	06-02-2020
7.	Vinoth V	National level Techical Symposium CHEMSPARX 20 orgaized by Adhiyamaan College of Engineering, Hosur	Oral	First	02/03/2020 - 03/03/2020
8.	Kanagaraj A	National Symposium CHEMOSPHERE VAJRA organized by Department of Chemcial Engineering SV University, Tirupathi	Oral	Second	23/10/2019 - 24/10/2019
9.	Karthick Raja.S	National Symposium CHEMOSPHERE VAJRA organized by Department of Chemcial Engineering SV University, Tirupathi	Oral	Second	23/10/2019 - 24/10/2019

10.	Vinoshiya V	National level Chemical Engineering Symposium organised by NIT, Trichy	Chem Quiz	Third	18/10/2019 - 20/10/2019
11.	Nandhini R	National Conference on Challenges in Chemical Engineering and Biosciences for Sustainable Environment organized by Department of Chemical Engineering, Annamalai University	Oral	Best	15/02/2020 - 16/02/2020
12.	Monica K	National Conference on Challenges in Chemical Engineering and Biosciences for Sustainable Environment organized by Department of Chemical Engineering, Annamalai University	Oral	Best	15/02/2020 - 16/02/2020
13.	Vignesh D	National Conference on Challenges in Chemical Engineering and Biosciences for Sustainable Environment organized by Department of Chemical Engineering, Annamalai University	Oral	Best	15/02/2020 - 16/02/2020
14.	Sriraaman M	National Conference on Challenges in Chemical Engineering and Biosciences for Sustainable Environment organized by Department of Chemical Engineering, Annamalai University	Oral	Best	15/02/2020 - 16/02/2020
15.	Gowthaman D	National Conference on Challenges in Chemical Engineering and Biosciences for Sustainable Environment organized by Department of Chemical Engineering, Annamalai University	Oral	Best	15/02/2020 - 16/02/2020
16.	Loganandhan B	Chemsparx'20 – National level Technical Symposium organized by Aadhiyaman College of Engineering	Tech Quiz	Participated	02/03/2020 – 03/03/2020
17.	Rakesh E	Chemsparx'20 – National level Technical Symposium organized by Aadhiyaman College of Engineering	Tech Quiz	Participated	02/03/2020 – 03/03/2020
18.	Santhosh Kumar S	Chemsparx'20 – National level Technical Symposium organized by Aadhiyaman College of Engineering	Tech Quiz	Participated	02/03/2020 – 03/03/2020
19.	Vinoth V	Chemsparx'20 – National level Technical Symposium organized by Aadhiyaman College of Engineering	Tech Quiz	Participated	02/03/2020 – 03/03/2020

20.	Vandhana V	PPG Cricathon Quiz competition organized by Department of Science and Humanities, PPG Institute of Technology	Quiz	Participated	07/04/2020
21.	Agastin Raj T	Chem- E-quiz organized by Department of Chemical Engineering, Shri Shivaji Educational Society Amravati's College of Engineering and Technology, Akola	Quiz	Participated	30/05/2020
22.	Vandhana V	World Environment Day Quiz competition organized by Department of Science and Humanities, PPG Institute of Technology.	Quiz	Participated	05/06/2020
23.	Vignesh J	National level E-quiz on "Principles of Communication Technology" organized by Department of Electronics and Communication Engg, Nadimpalli Satyanarayana Raju Institute of Technology	Quiz	Participated	10/06/2020
24.	Vandhana V	E-Quiz on World Environmental day 2020 organised by Department of Environmental Science, Manonmaniam Sundaranar University.	Quiz	Participated	10/06/2020 - 12/06/2020
25.	Vandhana V	Quiz on Total Quality management organized by Department of Mechanical Engg, SKSVMA College of Engineering & Technology	Quiz	Participated	20/06/2020
26.	Vandhana V	National level E-Quiz on "Income Tax Awareness Programme" organized by Department of Commerce, Government Degree College, Sitarganj	Quiz	Participated	18/06/2020
27.	Rakesh E	SENSORS 2k20 - Technical Quiz organized by Department of Electronics and Instrumentation Engg, Annamalai University	Quiz	Participated	19/06/2020

D. Nirubamaa and V. Vandhana - Won 2nd prize in national conference held at Anna University, Trichy

Student Conferences

Sl. No	Name	Conference	Participation/ Presentation	Date
1.	Sriraaman M	Seminar on STARTUPS by Nagarathar business connections & Thanjavur Nagarathar sangam	Participant	04-08-2019
2.	Gowthaman D	Immuno World - An International Conference organized by CAS in Marine Biology, Annamalai University	Participant	21/08/2019-23/08/2019
3.	Jaiseelan S	Immuno World - An International Conference organized by CAS in Marine Biology, Annamalai University	Participant	21/08/2019-23/08/2019
4..	Sriraaman M	Immuno World - An International Conference organized by CAS in Marine Biology, Annamalai University	Participant	21/08/2019-23/08/2019
5.	Sriraaman M	National Conference on Advances in Pharmacy Practices organized by Department of Pharmacy, Annamalai University	Poster	23/08/2019-24/08/2019
6.	Prabudeva G	National Conference on Advances in Pharmacy Practices organized by Department of Pharmacy, Annamalai University	Participant	23/08/2019 - 24/08/2019
7.	Stephan B	National Conference on Environmental Pollution and Control Technologies Department of Chemical Engineering, Annamalai University	Oral	30/08/2019-31/08/2019
8.	Akash V	National Conference on Environmental Pollution and Control Technologies Department of Chemical Engineering, Annamalai University	Oral	30/08/2019-31/08/2019
9.	Manikandan N	National Conference on Environmental Pollution and Control Technologies Department of Chemical Engineering, Annamalai University	Oral	30/08/2019-31/08/2019

10.	Sriraaman M	National Conference on Environmental Pollution and Control Technologies Department of Chemical Engineering, Annamalai University	Oral	30/08/2019-31/08/2019
11.	Gowthaman D	National Conference on Environmental Pollution and Control Technologies Department of Chemical Engineering, Annamalai University	Oral	30/08/2019-31/08/2019
12.	Praveen R	National Conference on Environmental Pollution and Control Technologies Department of Chemical Engineering, Annamalai University	Oral	30/08/2019-31/08/2019
13.	Vignesh D	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Oral	12/09/2019-13/09/2019
14.	Sriraaman M	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Oral	12/09/2019-13/09/2019
15.	Gowthaman D	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Oral	12/09/2019-13/09/2019
16.	Jaiseelan S	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Oral	12/09/2019-13/09/2019
17.	Loganadhan B	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
18.	Vinoth V	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019

19	Adithyan M	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
20.	Bharathraj K	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
21.	Divya K S	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
22.	Kanagaraj A	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
23.	Hariharan K	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
24.	Kallish	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
25.	Sivasankar M	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
26.	Gobika P	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
27.	Vinoshiya V	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019

28.	Shanmugapriya S	International Conference on Biomass Fuels and Chemicals, Department of Chemical Engineering, Annamalai University	Participant	12/09/2019-13/09/2019
29.	Nirubamaa D	National conference on Emerging trends in chemical and petrochemical technology, University college of Engineering BIT campus, Anna University	Oral	20-09-2019
30.	Vandhana V	National conference on Emerging trends in chemical and petrochemical technology, University college of Engineering BIT campus, Anna University	Oral	20-09-2019
31.	Rakesh E	National Conference on Current and Emerging Processing Technologies, Kongu Engineering college, Perundurai	Oral	25-01-2020
32.	Ragul N	National Conference on Current and Emerging Processing Technologies, Kongu Engineering college, Perundurai	Oral	25-01-2020
33.	Nirubamaa D	National Conference on Current and Emerging Processing Technologies, Kongu Engineering college, Perundurai	Oral	25-01-2020
34.	Vandhana V	National Conference on Current and Emerging Processing Technologies, Kongu Engineering college, Perundurai	Oral	25-01-2020
35.	Sivanesan J	National Conference on Current and Emerging Processing Technologies, Kongu Engineering college, Perundurai	Oral	25-01-2020
36.	Loganadhan B	National Conference on Current and Emerging Processing Technologies, Kongu Engineering college, Perundurai	Oral	25-01-2020

37.	Santhosh Kumar S	National Conference on Current and Emerging Processing Technologies, Kongu Engineering college, Perundurai	Oral	25/01/2020
38.	Stephan B	National Conference on Green Chemistry and Engineering, Department of Chemical Engineering, Annamalai University	Oral	31/01/2020-01/02/2020
39.	Gowthaman D	National Conference on Green Chemistry and Engineering, Department of Chemical Engineering, Annamalai University	Oral	31/01/2020-01/02/2020
40.	Jaiseelan S	National Conference on Green Chemistry and Engineering, Department of Chemical Engineering, Annamalai University	Oral	31/01/2020-01/02/2020
41.	Chandru K	National Conference on Green Chemistry and Engineering, Department of Chemical Engineering, Annamalai University	Oral	31/01/2020-01/02/2020
42.	Vignesh J	National symposium Syllogic 2020, Kongu Engineering College, Perundurai	Oral	06-02-2020
43.	Bharathraj K	National symposium Syllogic 2020, Kongu Engineering College, Perundurai	Oral	06-02-2020
44.	Kanagaraj A	National symposium Syllogic 2020, Kongu Engineering College, Perundurai	Oral	06-02-2020
45.	Sabthagirivasan P	National symposium Syllogic 2020, Kongu Engineering College, Perundurai	Oral	06-02-2020

46.	Chandru K	National symposium Syllogic 2020, Kongu Engineering College, Perundurai	Oral	06-02-2020
47.	Vinoth V	RTCEB-2020 - National conference organized by Department of Chemical Engineering, Annamalai University	Oral	14/02/2020 - 15/02/2020
48.	Sivanesan.J	National level students technical symposium -CHEMSPARX -2020, Adhiyaman College of Engineering, Hosur	Oral	2/3/2020 - 3/3-220
49.	Loganathan.B	National level students technical symposium -CHEMSPARX -2020, Adhiyaman College of Engineering, Hosur	Oral	2/3/2020 - 3/3-2020
50.	Santhosh Kumar.S	National level students technical symposium -CHEMSPARX -2020, Adhiyaman College of Engineering, Hosur	Oral	2/3/2020 - 3/3-2020
51.	Rakesh.E	National level students technical symposium -CHEMSPARX -2020, Adhiyaman College of Engineering, Hosur	Oral	2/3/2020 - 3/3-2020
52.	Vinoth.V	National level students technical symposium -CHEMSPARX -2020, Adhiyaman College of Engineering, Hosur	Oral	2/3/2020 - 3/3-2020
53.	Balaji.P	National level students technical symposium -CHEMSPARX -2020, Adhiyaman College of Engineering, Hosur	Oral	2/3/2020 - 3/3-2020
54.	Tamilalagan.P	National level students technical symposium -CHEMSPARX -2020, Adhiyaman College of Engineering, Hosur	Oral	2/3/2020 - 3/3-2020
55.	VijayaBaskar.P	National level students technical symposium -CHEMSPARX -2020, Adhiyaman College of Engineering, Hosur	Oral	2/3/2020 - 3/3-2020
56.	Balaji.P	National Seminar on Globalization, Environment &Suatainable development, Annamalai University	Oral	12/3/20 & 13/3/20
57.	Kannan.P	National Seminar on Globalization, Environment & Suatainable development, Annamalai University	Participated	12/3/20 & 13/3/20
58.	Nirubamaa.D	National Seminar on Globalization, Environment & Suatainable development, Annamalai University	Participated	12/3/20 & 13/3/20
59.	Sivanesan.J	National Seminar on Globalization, Environment & Suatainable development, Annamalai University	Participated	12/3/20 & 13/3/20

60.	Veeramani.G	National Seminar on Globalization, Environment & Suatainable development, Annamalai University	Participated	12/3/20 & 13/3/20
61.	Santhoshkumar	National Seminar on Globalization, Environment & Suatainable development, Annamalai University	Participated	12/3/20 & 13/3/20
62.	Agastinraj T	SYLLOGIC 2020 - National symposium, Kongu Engineering College, Perundurai	Oral	02-06-2020
63.	Purushothaman I	SYLLOGIC 2020 - National symposium organized by Kongu Engineering College, Perundurai	Poster	02-06-2020
64.	Vignesh J	SYLLOGIC 2020 - National symposium organized by Kongu Engineering College, Perundurai	Oral	02-06-2020
65.	Sivanesan J	SENSORS 2k20 - National symposium organized by Department of Electronics and Instrumentation Engineering	Oral	19/06/2020
66.	Kannan P	15th Annual Session Of Students Chemical Engineering Congress (SCHEMCON 2019)	Oral	17/10/19-18/10/19
67.	Santhosh Kumar S	15th Annual Session Of Students Chemical Engineering Congress (SCHEMCON 2019)	Poster	17/10/19-18/10/19
68.	Sivanesan J	15th Annual Session Of Students Chemical Engineering Congress (SCHEMCON 2019)	Oral	17/10/19-18/10/19
69.	Sathish C	15th Annual Session Of Students Chemical Engineering Congress (SCHEMCON 2019)	Oral	17/10/19-18/10/19
70.	Rakesh E	15th Annual Session Of Students Chemical Engineering Congress (SCHEMCON 2019)	Poster	17/10/19-18/10/19
71.	Raguk N	15th Annual Session Of Students Chemical Engineering Congress (SCHEMCON 2019)	Oral	17/10/19-18/10/19
72.	Ram Kumar S	15th Annual Session Of Students Chemical Engineering Congress (SCHEMCON 2019)	Oral	17/10/19-18/10/19

73.	Vignesh D	India International Science Festival 2019	Participated	05/11/19-08/11/19
74.	Jaiseelan S	India International Science Festival 2019	Participated	05/11/19-08/11/19
75.	Sriraaman M	India International Science Festival 2019	Participated	05/11/19-08/11/19
76.	Kallish B, Hariharan K, Adithyan Mohan	34TH Indian Engineering Congress	Oral	27/12/19-29/12/19
77.	Prabhu Deva G	AICTE and DST-PURSE Phase II Sponsored Two Days National Conference	Participated	23/08/19-24/08/19
78.	Jaiseelan S	National Conference On Recent Trends In Chemical and Environmental Biotechnology (RTCEB 2020)	Oral	14/02/20-15/02/20
79.	Vinoth	CHEMOSPHERE – VAJRA . A National level Student Technical Symposium	Participated	23/10/19-24/10/19
80.	Loganathan B	3rd National Conference on Current and emerging process technologies (CONCEPT 2020) , Kongu Enginnering College , Perundurai	Oral	25/01/2020
81.	Ragul N	3rd National Conference on Current and emerging process technologies (CONCEPT 2020) , Kongu Enginnering College , Perundurai	Oral	25/01/2`020
82.	Rakesh E	3rd National Conference on Current and emerging process technologies (CONCEPT 2020) , Kongu Enginnering College , Perundurai	Oral	25/01/2020
84.	Nirubamaa D	3rd National Conference on Current and emerging process technologies (CONCEPT 2020) , Kongu Enginnering College , Perundurai	Oral	25/01/2020

85.	Vandhana V	3rd National Conference on Current and emerging process technologies (CONCEPT 2020) , Kongu Enginnering College , Perundurai	Oral	25/01/2020
86.	Vinoth V	National level students technical symposium -CHEMSPARX - 2020, Adhiyaman College of Engineering, Hosur	Oral	02/03/2020-03/03/2020
87.	Loganathan B	National level students technical symposium -CHEMSPARX - 2020, Adhiyaman College of Engineering, Hosur	Oral	02/03/2020-03/03/2020

Chemical Engineering in Perfumery

YUGENDAR G S – 2nd Semester

The art of perfumery is of great antiquity in India and many travellers of by gone days have referred to the exquisite perfumes produced in India. Perfumes are produced from essential oils extracted from roots, flowers and fruits of some plants. This fragrant substance is generally complex in composition. Commercial production of essential oils from sandal wood, lemon grass, ginger grass and Eucalyptus is well established and allied industries exist at Mysore, Bombay, Calcutta and Delhi. Here are some perfumes:

Lavender:

A typical example is lavender oil extracted by the technique of ***Steam distillation*** from the flowers of *LAVANDULA VERS* which has its major components *LINALOL* and *LINAYL ACETATE*.

Jasmine:

This essential oil from *JASMINUM GRANDIFLORUM* is obtained by solvent extraction technique. The mature Jasmine flowers are usually extracted with Petroleum ether. Subsequently the solvent is removed by distillation leaving behind Jasmine concentration. In modern project, the Jasmine flower is being used as the substrate. *JASMINUM OFICINALIS*, or also known as Melur in Malay, is commonly extracted for it essential oils using ***hexane*** as solvent.

Tuberose:

Tuberose absolute from *POLYANTHUS TUBEROSA* is obtained by different methods. The modern methods are *Enfleurage* process and Solvent extraction. During the process flowers laid on a large tray of fat which absorbs the perfume oil as it is given off.

Enfleurage: Cold and hot enfleurage processes were used in the tuberose oil extraction

Solvent Extraction: ***Hexane and petroleum ether*** were used to extract the scents from tuberose flowers because they are strongly non-polar solvents and are frequently used in solvents to extract oils

Rose:

ROSE OTTO is obtained by ***Steam distillation*** of flowers the process being carried out soon after harvest.

Modern methods:

In India, three different methods are in practiced for the processing of rose oil.

1. Deg and Bhapka Method:

This method gives a recovery of 0.01-0.015% which is significantly lower than the other methods described below.

2. Direct Fired Distillation Unit:

This process in known as Cohobation" which has been found to improve the recovery; of oil. The plant takes about 4-6 hrs per batch for completion of distillation.

3. Boiler Operated Unit:

This is most modern method of distillation and suitable for large-scale production of oil. The whole plant consists of three units, a boiler, a distillation unit and a "Cohobation" unit.

Sandal:

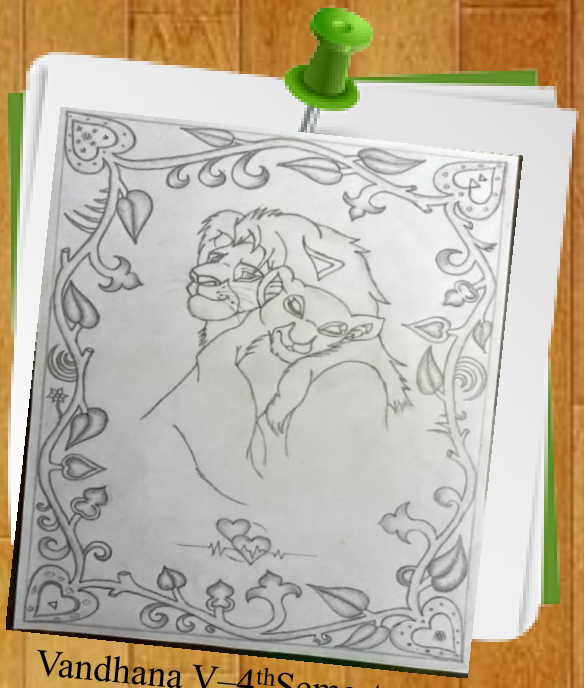
Sandal wood oil is obtained from heart wood of *SANTALUM ALBUM*. Sandal wood oil is mostly extracted by ***Steam distillation***. The traditional method to extract this oil is *Hydro Distillation*, though this process is not popular these days.

Students' Placement

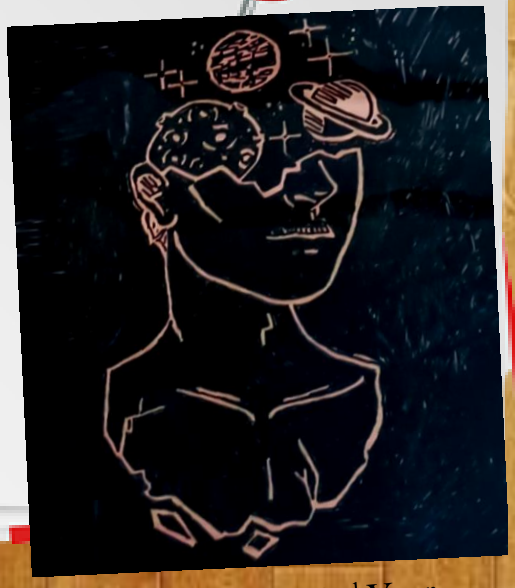
S. No.	Name of the Student	Enrol No.	Company Name
1	K.Maatarini	1637010004	Cheminenviro Systems Pvt. Ltd. SIPCOT Industrial Growth Centre, Perundurai
2	R.Nandhini	1637010018	Cheminenviro Systems Pvt. Ltd. SIPCOT Industrial Growth Centre, Perundurai
3	K.S.Devabalaji	1637010025	Cheminenviro Systems Pvt. Ltd. SIPCOT Industrial Growth Centre, Perundurai
4	M.Sriraaman	1637010003	Sai Life Sciences Ltd, Hyderabad
5	K.Sheak Dhawoth	1637010001	Sai Life Sciences Ltd, Hyderabad
6	S.Jayasuriyan	1637010013	Sai Life Sciences Ltd, Hyderabad
7	S.Arunprasath	1637010002	Sai Life Sciences Ltd, Hyderabad
8	B.Gokul	1637010007	Fincare Small Finnance Bank, Chidambaram
9	C.Kanagapreethi	1637010045	Edac Engineering Ltd., Chennai
10	K.Monica	1637010037	Esv Connect, Chennai
11	S. Gokul Balaaji	1637010048	Byju's The Learning App, Bengaluru
12	M.Sriraaman	1637010003	AIIRF EDII- Annamalai Nagar
13	A. Mukund	1637010009	Solara Active Pharma Sciences Chennai

STUDENTS' CREATIVITY

Don Berslin J – 2nd Semester

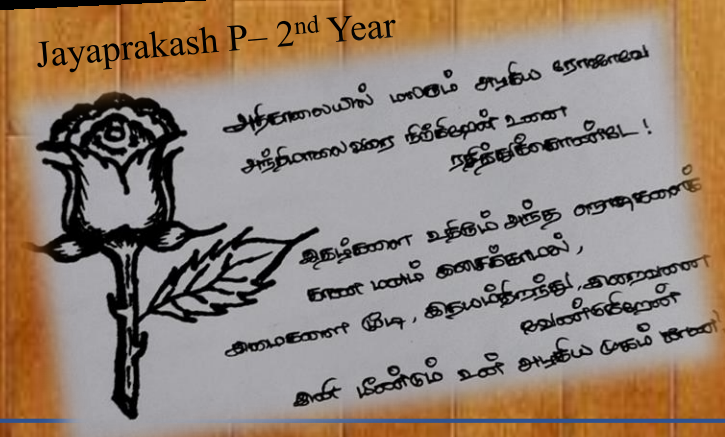


Vandhana V–4thSemester

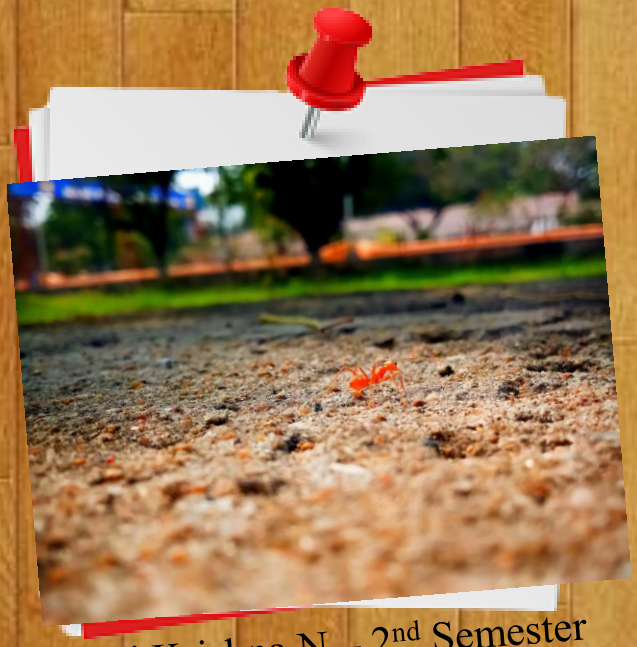


Jayaprakash P– 2nd Year

Sriraman – 6th Semester



Abitha A-2nd Year



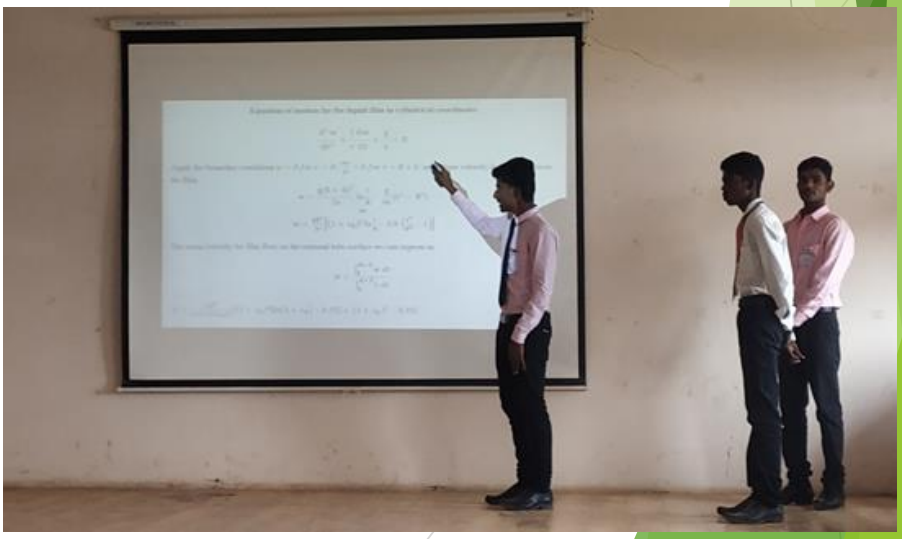
Jai Krishna N – 2nd Semester

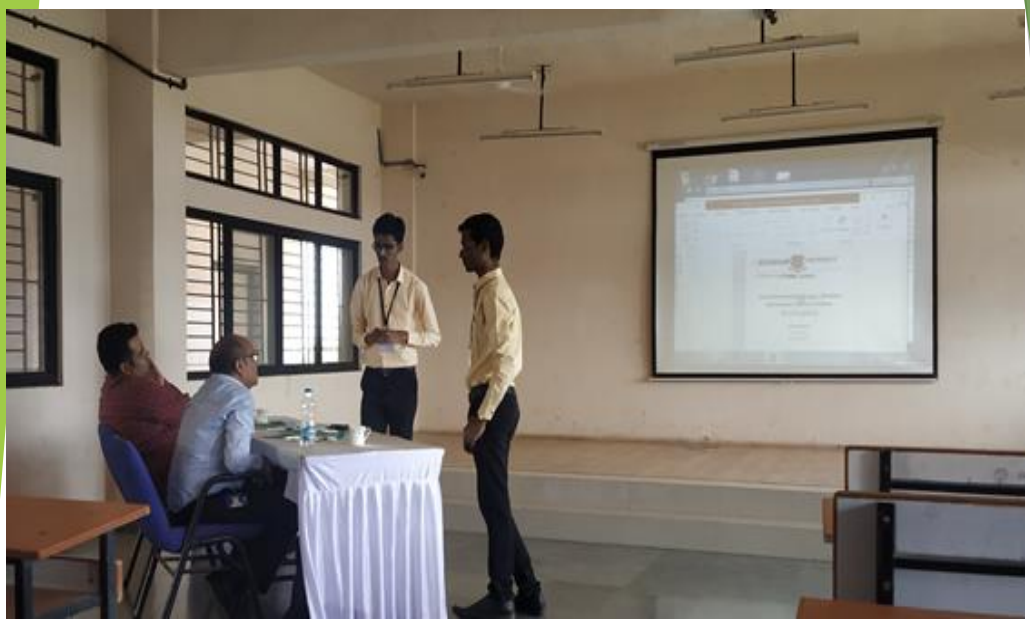
Yugendar G S – 2nd Semester

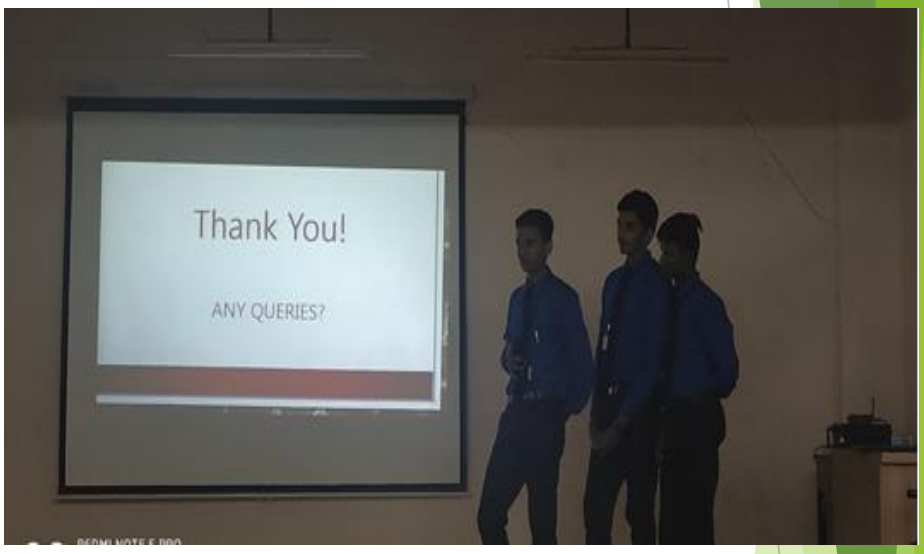
Jai Krishna N – 2nd Sem

SCHEMCON – 2K19

SCHEMCON 2k19 was organised at *Shroff S R Rotary Institute of Chemical Technology,* Ankleshwar, Gujarat between 17-18th October 2019 by Indian Institute of Chemical Engineers Student Chapter. Our Students took part in the event by Presenting papers in oral and Poster Presentation .






Thank You!
ANY QUERIES?


Introduction

STUDENTS' VIEW ON THEIR GRADUATION

It gives us immense pleasure in graduating from a traditional and one of the greatest Universities in India. It is a great pleasure to get graduated from a Department which has a high glory in its name. Our Department is a Students' paradise where we're Enlighted by Highly experienced faculty and also being guided by our prestigious Alumni. The University as well as the Department teaches students the real life and societal values. The experiences of gained from this University cannot be compressed in words.

We thank all our Faculty and University authorities for providing us such valuable graduation.