



Department of Chemical Engineering

NEWS LETTER (July2023 – Feb 2024)

DEPARTMENT ACHIEVEMENTS

Technical Symposium

CHEMFLARE-2023: A Student Technical Symposium

The Department of Chemical Engineering, ANITS, Visakhapatnam, in association with RACE (Rays of ANITS Chemical Engineers) & ANITS IChE Students chapter under Walter Region Centre organized a two day National student conference, "CHEMFLARE-2023", during 2nd and 3rd March 2023. Prof. R. Srikanth, Head of the chemical Engineering department, ANITS is the president of the inaugural function, Dr. Ch. Anil, Faculty convener, Mr. P. Naveen Kumar, Student president RACE body were also present on the dais.

Prof. R. Srikanth, advised students to be actively involved in workshops, conferences, technical fests conducted. He informed that, the chemical engineers are good at cause and effect of the process. He advised students to be like big fish in small pond but not like a small fish in a big lake. He emphasized that the future is for Electric Vehicles, Catalysis, Biotechnology and Nanotechnology.

Dr. Ch. Anil, Faculty convener, highlighted the difference between the academic environment and industrial environment. He expressed that, the department will always encourages students to participate in various technical and extra-curricular activities. He also informed that, such events and activities will be organized in future also for the benefit of the students. He also informed the activities of the CHEMFLARE-2023 such as Resonate (paper presentation), Re-vibe (poster presentation), reflux (model expo), reminisce (cross word), spot events like mock CID, mock parliament and sports.

Mr. P. Naveen Kumar, Student president RACE body, thanked all the participants 52 are from outside colleges and 120 are in-house participants. He congratulated all the winners of various events. He expressed gratitude for Prof. S. Subba Rao, Mr. K. Koteswara Rao, Ms. S. Harika, Dr. K. China Malakondaiah, Dr. D. Anjali, and Mr. Pradeep Santosh Kumar, other supporting staff, and Students who made the event grand success.

RACE Activities  
Outreach Activity

To Engage and give moral support to the children  
at Anandha Marga orphanage  
on 10th September, 2023



Fig.1: Student participation in Model Expo Session

The Department of Chemical Engineering, ANITS, Visakhapatnam, in association with RACE Students chapter organized an event to engage and give moral support to the children at Anandha Marga orphanage on 10-09-2023. Prof. Sri Ramakrishna, Principal, ANITS acknowledged the students for providing a helping hand to children in orphanages. Students visited the orphanage and engaged the students in some recreational activities such that students will be relieved from the stress.

After these activities, food is distributed to the children and eaten with the children to motivate them that they are not alone. At the end of the day, students distributed stationary items and books to the children. The orphanage coordinator informed that this activity encouraged and motivated the orphanage children. A total of 50 students participated in the event and made it a meaningful event for the children.



Fig.2: RASAGYAN-Student Magazine release during Valedictory Session



Fig. 1: Students and children at Anandha Marga orphanage



Fig. 2: Interaction with children at Anandha Marga orphanage

Outreach Activity

To Celebrate Spirit of Children's Day  
at Orphanage Home for Physically Challenged Children, Madhuravada  
On 14th November, 2023

The Department of Chemical Engineering, ANITS, Visakhapatnam, in association with The Department of \Electronics and Communication Engineering, ANITS organized an outreach event to celebrate the spirit of children's day at Orphanage Home for Physically Challenged Children, Madhuravada on 14th November, 2023 on the occasion of Children's day and in view of Quami Ektha Week (19th to 24th November).

This event is mainly aims to celebrate the children's day by spreading joy and happiness among the children at the orphanage and promoting unity and compassion during the Quami Ektha Week. During the stay at orphanage, students engaged with the orphan students in some recreational activities like conducting creative games, showing some motivational videos, such that students will be relieved from the stress and rejuvenated. Then after these activities, food is distributed to the children and eaten with the children to motivate them that they are not alone and also celebrated one of the orphan students birth day on that day.

It was indeed very satisfying experience for students, as they could bring smiles on children faces. They realized that one contributes and understand his/her social responsibilities towards society.



Fig.1: Students and children at orphanage



Fig.2: Interaction with children at Anandha Marga orphanage

Hush Ball Activity (Capacity development activity to get rid of stress)

The Department of Chemical Engineering, ANITS, and Visakhapatnam convened an event to get some extent relaxation by conducting hush ball event for the students of second year. This event was conducted by Dr. K. China Malakondaiah along with the support of Dr. D. Anjali for peer review of given conditions imposed to this event. All the students actively participated and enjoyed the event with joy and smiles. Further, they expressed more interest and requested the faculty to conduct some more events as such type of events will motivate/encourage the students with fresh mind. Eventually, the students showed utmost response to this versatile relaxation event and made the event grand success.



Extension Activity On

CONSERVATION OF WATER AND PURIFICATION TECHNOLOGIES

On 23rd December, 2023

The Department of Chemical Engineering, ANITS, Visakhapatnam, in association with RACE Students chapter organized a NSS extension Programme on "Conservation of water and Purification Technologies" on 23-12-2023 at Peddipalem village. Prof. Sri Ramakrishna, Principal, ANITS acknowledged the students for providing knowledge to village people on water conservation purification technologies. The Extension Programme on "Conservation of Water and Purification Technologies" was organized to address the pressing issues of water scarcity and contamination. The program aimed to educate and engage village communities in adopting water conservation practices and implementing advanced purification technologies. A total of 50 students and 3 faculty members are participated.



Fig. 1: Students and Faculty members at Peddipalem Village



Fig. 2: Providing awareness on water conservation to village people at Peddipalem Village



Student Participation in Hush Ball (Stress Management Activity)

Capacity Development Activity (Language and Communication Skills)

The Department of Chemical Engineering, ANITS, Visakhapatnam convened an event to inculcate communication skills to the students of second year. Yet this event was conducted by Dr. Anjali Dasari along with the support of Dr. P Prasanna Kumari, Assistant Professor, Department of Humanities as a guest to conduct the event. As a part of the event she highlighted on how to introduce yourself, resume writing, and also conducted a debate on "Free education is given for college students". Students are actively participated in the debate and enjoyed the event. Further, they expressed more interest and requested the faculty to conduct some more events as like this and such type of events will increases the communication skills of the students. Eventually, the students showed utmost response to event and made the event success.



Fig. 1: Student Participation in Capacity Development Activity

### Swatch Bharat-Clean and Green on 23rd December, 2023

Department of Chemical engineering in Association with NSS ANITS, has conducted Swatch Bharat-Clean and Green Programme on 23rd December 2023. Students of first year and second year have actively participated in this event and made department premises clean and crystal clear.



Fig. 1: Students and Faculty members during in Clean and Green event



Fig. 2: Student Participation in Clean and Green event

### Guest Lectures

#### Guest Lecture on "How to build a successful career"

Department of Chemical Engineering, ANITS organized a guest lecture cum interactive session on "How to build a successful career" by Mr. Purna Chandrarao Talluri, Manager, National Council for cement and building materials, Delhi on 20/03/2023. In his lecture he emphasized students with great motivational words like "kaste phali". He advised students to practice two major things such as hard work and consistency to achieve great success in any field. Students actively participated in an interactive session at the end of the lecture. Dr. R.Srikanth, Head, Department of Chemical Engineering, faculty and students participated and benefitted through the lecture.



Fig. 1: Student participation during Guest Lecture Session



Fig.2: Felicitation to the Resource Person

### Guest Lecture on “Career opportunities in Chemical Engineering”

Department of Chemical Engineering, ANITS organized a guest lecture on “Carbon Capture Technologies” by Prof. I. Sridhar, HoD-Chemical Engineering, BITS Pilani-Hyderabad on 29th September, 2023. In this lecture Prof. I. Sridhar highlighted various methods used to capture carbon like post combustion carbon capture, pre combustion carbon capture, direct air capture, carbon capture and utilization and integrated carbon capture storage. He also addressed the challenges such as high costs, energy requirements, and the need for appropriate infrastructure and regulatory frameworks. He said that these challenges may become more manageable, making carbon capture an increasingly viable solution for mitigating climate change. He also enlightened the students about the opportunities available for Chemical Engineers in various industries such as pharmaceutical, Petroleum, Paper industry etc. He advised students to have sound knowledge on fundamentals and glimpse on new technological applications. Dr. R.Srikanth, Head, Department of Chemical Engineering, faculty and students participated and benefitted through the lecture.



Fig. 1: Student Participation in Guest Lecture Session

### “Career Awareness Program on Careers through POs and SSC-CGL Examinations”

The Department of Chemical Engineering, ANITS, and Visakhapatnam convened a session on career guidance for the benefit of students for various public sector selections of POS in bank sector & SSC-CGL. In view of this, Mr. Ravi Kumar Dasu & Mr. M.V.S. Santosh Kumar, Indian Academy of Competitive Exam Pvt. Ltd. (IACE) had taken the awareness session towards the public sector jobs followed by interaction with third year students. As part of this session, the students also actively participated and raised doubts to get rid of the glitches for the opportunities in banks and public sector posts. At the last, in this session, 20/.35 students of IV/IV were actively participated and acquainted the knowledge towards the public jobs in addition to their campus placements.



Fig. 1: Student Participation during the Career Awareness Session

Guest Lecture on “An overview of Petroleum Refinery”

Department of Chemical Engineering, ANITS organized a guest lecture on “An overview of Petroleum Refinery” by Mr.Chiranjeevulu S, retired Chief Manager (QC, R&D )Mangalore Refinery and Petrochemicals Ltd, Mangalore on 10th November, 2023. In this lecture Mr.Chiranjeevulu highlighted various crude separation methods, refinery configuration, Atmospheric and vacuum distillation, FCC and also salt detection methods in crude oil. He also addressed the challenges such as high costs, energy requirements, and the need for appropriate infrastructure and regulatory frameworks. He also enlightened the students about the opportunities available for Chemical Engineers in Petroleum refineries. He advised students to have sound knowledge on fundamentals and glimpse on new technological applications. Prof. R. Srikanth, Head, Department of Chemical Engineering, faculty and students participated and benefitted through the lecture.



Fig.1: Student Participation in Guest Lecture Session

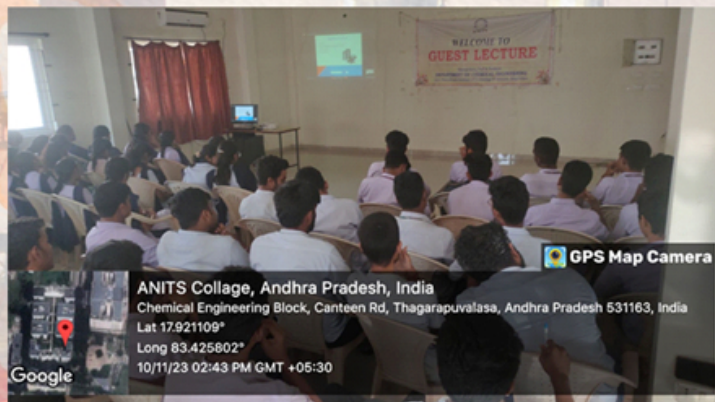


Fig.2: Student Participation in Guest Lecture Session

Guest Lecture on “Troubleshooting -Case Studies in Petroleum industries”

Department of Chemical Engineering, ANITS organized a guest lecture “Troubleshooting -Case Studies in Petroleum industries” by Mr. T.Srinivasa Rao, Lead Process engineer, Sabc, Petrokemya, Saudi Arabia through online on 11/08/2023. In his lecture he emphasized students with great motivational words like “sky is limit”. He enlightened students on various important aspects of Chemical engineering such as how to apply fundamentals, design and usage of poly reactor, refrigeration system and also burn out flux. He advised students to have sound knowledge on new courses like AI and Python. Dr. R.Srikanth, Head, Department of Chemical Engineering, faculty and students participated and benefitted through the lecture.



Fig. 1: Student Participation during Guest Lecture Session

Work Shops  
Value added course on "Safety in Process Industries"  
17th – 23rd August, 2023

The Department of Chemical Engineering, ANITS, Visakhapatnam, in association with ANITS IChE Students chapter under Waltair Regional Centre organized a value-added course on, "Safety in Process Industries", during 17-08-2023 to 23-08-2023. The course is made into 6 modules covering the important aspects of Safety; these are as given below Introduction to Safety, Loss statistics & Toxicology, Industrial Hygiene, Fires & Explosion, Relief Concepts & Sizing, Hazards Identification Methods, Risk Assessment Methods. A total of 32 students attended the course.

Details of the resource person:

1. Prof. R. Srikanth, Professor, Department of Chemical Engineering, ANITS
2. Dr. Ch. Anil, Associate Professor, Department of Chemical Engineering, ANITS
3. Ms. S. Harika, Assistant Professor, Department of Chemical Engineering, ANITS
4. Dr. D. Anjali, Assistant Professor, Department of Chemical Engineering,



Fig. 1: A Lecture on overview of Safety in Process Industries



Fig. 2: Case Study Explanation during Value added course

Two Day National Workshop on "Artificial Intelligence for Chemical Engineers" during  
29 - 30 December, 2023

The Department of Chemical Engineering, ANITS, Visakhapatnam, in association with ANITS IChE Students chapter organized a two day workshop on "Artificial Intelligence for Chemical Engineers", during 29-12-2023 to 30-12-2023.

Prof. KV Ramesh, Professor, Department of Chemical Engineering, Andhra University is the Keynote speaker - I enlightened the students on the importance of artificial intelligence in the field of Chemical Engineering. He mentioned that artificial intelligence is used to improve process safety, process optimization, and process plant performance.

Prof. B Srinivas, Professor, Department of Chemical Engineering, GVP College of Engineering is the keynote speaker - II gave a hands-on training session on linear regression, and polynomial regression for a batch reactor. He also presented the image analysis used in medical diagnosis.

A total of 60 students attended the course, developed programming and problem solving skills.



Fig. 1: Session by Prof. KV Ramesh



Fig. 2: Session Prof. B. Srinivas



### Industrial Visits

#### Industrial Visit- M/s Visakha Dairy, Visakhapatnam

As a part of the industrial visit, The Department of Chemical Engineering arranged a visit to M/s Visakha Dairy, Visakhapatnam. In view of this, the students of II/IV and I/IV B.Tech Chemical Engineering visited the Dairy on October 10th 2023. Two faculty members accompanied the students during the visit.

The students and faculty reached the Visakha Dairy from college at 10 AM. The dairy personnel briefed the history of Visakha Dairy and the process of collection and distribution of milk from and to various places. After briefing the personnel took the students and teachers to various unit operations involved in dairy such as homogenization, pasteurization and packaging. The personnel also explained the various products manufactured in the Visakha industry such as various types of milk, curd, paneer, skimmed milk, butter, pure ghee, yogurt, doodhpeda etc. The students gained knowledge and understood the collection and processing of milk in the dairy industry.



Fig. 1: Student and Faculty members at Visakha Dairy



Fig. 2: Case Study Explanation during Value added course

### Industrial Visit-Naval Science & Technological Laboratory (NSTL)

As a part of the industrial visit, The Department of Chemical Engineering arranged a visit to NSTL, DRDO, Visakhapatnam on the eve of National Science Technology Day celebration. In view of this, the students of III/IV and II/IV B.Tech Chemical Engineering visited the open-house exhibition & project expo on May 10th 2023. Two faculty members accompanied the students during the visit.

One of the defence personnel accommodated the students in the auditorium to get awareness on NSTL and its functioning since 1969. Further, the footage of NSTL in both English as well as Hindi was presented prior to the open-house exhibition. Many of the exhibition models were IoT based like recycling household water for gardening and some other model like smart board teaching developed using python coding, smart irrigation, smart stock management, aquaponic gardening, security alert, voice control wheel chair, river cleaning boat, smart helmet, accident detection and alerting in railway, alcohol sensing and eye blinking detector to prevent from accidents in automobiles, smart roads for charging vehicles etc. are presented by colleges and schools too.

After the exhibition, the students are then moved to NSTL developed weapons like Torpedoes (Varunastra) and underwater vehicles for detecting the failed torpedo while conducting trials.

The role of Chemical Engineering in the field of battery section of the torpedo is highlighted to educate the students in inter-disciplinary research.

Eventually, the students felt happy with advanced armed weapons exhibition as well as smart models for society/industry. The NSTL visit give the flights for hope to the students in view of better career prospects in the DRDO labs.



Fig. 1: Industrial Visit to NSTL on 10th May, 2023

## Faculty Achievements

1. Prof. R. Srikanth, Professor, Chemical, published a paper titled "Effect of Acids and Alkaline Pretreatment of Used Tea Waste Powder under Microwave-Assisted Pretreatment" in an international journal of Key Engineering Materials: Vol 960, No 7, PP: 149-160, October 2023. <https://www.scientific.net/KEM.960.149>
2. Dr.Ch.Anil, Associate Professor, Chemical, has published paper "Prediction of lattice constant of Pervo skites structures using machine leaning techniques" in an International Conference on waste management recycling and environment held at Andhra Kesari University,Ongole, Andhra Pradesh India during 16 - 17, November 2023.
3. M. Koteswara Rao, Assistant Professor, Chemical, has published paper "Prediction of lattice constant of Pervoskites structures using machine leaning techniques" in an International Conference on waste management recycling and environment held at Andhra Kesari University,Ongole, Andhra Pradesh India during 16 - 17, November 2023.
4. Dr.K.Ch.Malakondaiah, Assistant Professor, Chemical, has published paper "Fermentation study of Fox-tail Millet Batter" in a third International Conference on new frontiers in chemical, energy and environmental engineering held at NIT Warangal, Telanagana, India during 24-25, November 2023
5. Mr. D. Guru Mahesh, Assistant Professor, Chemical Engineering filed a Patent titled "AI-ENHANCED TOOLS FOR EARLY DETECTION OF LEARNING DIFFICULTIES IN STUDENTS" with application No.202341066029 A is filed on 2nd October 2023 and Published on 13th October 2023.
6. Dr. R. Srikanth, Professor, Chemical, successfully completed the NPTEL online course title "Chemical Process Intensification" with a consolidated score of 81% from IIT Guwahati in the duration of July-Oct 2023 (12 weeks).
7. Dr. Ch. Malakondaiah, Assistant Professor, Chemical, successfully completed the NPTEL online course title "ASPEN Plus Simulation Software-A Basic Course for Beginners" from IIT Guwahati in the duration of July-Oct 2023 (12 weeks).
8. Prof. V. Sridevi, Professor, Chemical, Successfully completed the NPTEL online course title "Organic farming for sustainable agricultural production" from IIT Guwahati in the duration of July-Sep 2023 (8 weeks).
9. Ms. S Harika, Assistant Professor, Chemical, Successfully completed the NPTEL online course title "Energy Conversion Technologies (Biomass and Coal)" from IIT Guwahati in the duration of July-Sep 2022 (8 weeks).
10. Mr. M. Koteswara Rao, Assistant Professor, Chemical, Successfully completed the NPTEL online course title "Energy Conversion Technologies (Biomass and Coal)" from IIT Guwahati in the duration of July-Sep 2022 (8 weeks).
11. Mr. B. Pradeep Santosh Kumar, Assistant Professor, Chemical, Successfully completed the NPTEL online course title "Energy Conversion Technologies (Biomass and Coal)" from IIT Guwahati in the duration of July-Sep 2022 (8 weeks).
12. Dr. Anjali D, Assistant Professor, Chemical, Successfully completed the NPTEL online course title "Energy Conversion Technologies (Biomass and Coal)" from IIT Guwahati in the duration of July-Sep 2022 (8 weeks).

13. Prof. R. Srikanth, Professor, Chemical, has published paper "Isolation, identification and optimization of potential phenol degrading bacterial strain P7 using Gen III microlog" in AIP International Conference on Advanced technologies in chemical, construction and mechanical sciences- ICATCHCOME 2023 held at Coimbatore, Tamil Nadu, India during during 13th September 2023.
14. Prof. R. Srikanth, Professor, Chemical, has published paper "Maximizing tea waste potential by soaking with acids and alkaline pre-treatment under hot air oven: Analysis of Functional Groups using FTIR" in Fourth International Conference on Advances in Physical Sciences and Materials (ICAPSM 2023) held at KPR Institute of Engineering and Technology, Coimbatore, Tamil Nadu, India during 17 - 18, August 2023.
15. Prof. R. Srikanth, Professor, Chemical, has published paper "Solvent Pre-treatment of Tea Waste and Rice Straw Powder: Analysis of Functional Groups using FTIR" in Fourth International Conference on Advances in Physical Sciences and Materials (ICAPSM 2023) held at KPR Institute of Engineering and Technology, Coimbatore, Tamil Nadu, India during 17 - 18, August 2023.
16. Prof. R. Srikanth, Professor, Chemical, has published paper "Microwave assisted pyrolysis of biomass feedstock fundamentals and the effect of process parameters- A review" in Fourth International Conference Journal of Physics: Conference Series 2550 (2023) 012003. <https://doi:10.1088/1742-6596/2550/1/012003>
17. Prof. R. Srikanth, Professor, Chemical, has published paper "Biodegradation of Low Density Polyethylene (LDPE) By Paenibacillus Sp. and Serratia Sp. isolated from marine soil sample" in International Conference on Advances in Materials Today, during 12th June 2023.
18. Mr. D. Guru Mahesh, Assistant Professor, Chemical Engineering filed a Patent titled "One-Pot Synthesis of Porous Gold Nanoparticles for Enhanced Catalytic Activity" with application No.202341028534 A is filed on 19th April 2023 and Published on 26th May 2023.
19. Dr. K. Ch. Malakondaiah Received a "Unnat Bharat Abiyan (UBA)- Best Performers award" for the year 2022-23 from Vice Chancellor, Andhra University, Visakhapatnam



Fig.1: Felicitation to Dr. K. Ch. Malakondaiah

## Student Achievements

1. P. Vajritha, K V V Sai Teja, IV/IV Chemical, Chemical, has published paper "Prediction of lattice constant of Pervoskites structures using machine learning techniques" in an International Conference on waste management recycling and environment held at Andhra Kesari University, Ongole, Andhra Pradesh India during 16 - 17, November 2023.
2. Ms. B. Sirisha, 4/4 Chemical Engineering, has secured Second position in Badminton category in Inter-Collegiate Games and Sports competition held at SRT Sports Academy Visakhapatnam on 28th November 2023.
3. Ms. Sai Roshitha and V. Sravani, 4/4 Chemical Engineering, has secured Second position in Idea Competition in Inter-Department competitions held at ANITS, Visakhapatnam on June 12-13th 2023.

## Placements

1. Four of 2024 Chemical Batch students have selected for "PINNACLE" Organization, with a Package of 6 LPA



2. Five of 2024 Chemical Batch students have selected for "INOX, AIR Products" Organization with a Package of 3.74 LPA



3. Fifteen of 2024 Chemical Batch students have selected for "MSN Laboratories" Organization, with a Package of 3.06 LPA



4. Four of 2024 Chemical Batch students have selected for "Laurus Laboratories" Organization, with a Package of 3.05 LPA

### Mock Interviews- By Alumni

Mock interviews were conducted to 2020-2024 Batch chemical engineering students by a chemical engineering alumni student M. Saikrishna (2011-2015 batch). These Mock interviews provided job seekers an opportunity to practice, receive feedback and improve their skills. Which also developed interview strategies, enhance in communication skills, answer challenging questions, and ease the nerves that many experiences before an actual job interview



Fig. 1 and 2: Final year students active participation in mock interviews event

### Entrepreneurship Activities

#### An online Session on “My Story - Motivational Session By Successful Innovator”

The department of Chemical Engineering at ANITS collaborated with IIC organized a one-day session on “My Story - Motivational Session by Successful Innovator” for students and faculty on 19th October 2023. The resource person for this motivational session is Mr. Thota Sivaji, CEO, M/s Aaharya Technologies Pvt. Ltd, who was an expert in the field of market analysis and product development.

In this motivational speaker shared his personal journey, emphasized key lessons learned during his graduation and strategies employed to overcome obstacles and achieve extraordinary success in the current world of entrepreneurship. Around 85 Students and 13 faculties of our institution have participated actively in this session.

The motivational session was highly informative and insightful, and the outcomes were highly positive, with participants gaining a better understanding of how to identify problems and develop solutions that met market needs. The Head of the Chemical Engineering Department, Prof. R. Srikanth, the IIC Coordinator, Mr. B. Pradeep Santosh Kumar, and other faculty and students attended the session. The initiative was highly appreciated by the Principal, Prof. K. Sri Rama Krishna.



Fig.1: Brochure of the event