



INDIAN INSTITUTE OF PETROLEUM AND ENERGY

# THE FOURTH ESTATE

METAMORPHOSIS



• Issue No. I & II / Volume V (July 2020-June 2021) •





# METAMORPHOSIS

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We collectively tided over a sea of change and adapted to a new normal amidst uncertainty. We emerged stronger than our circumstances, we moved ahead with resilience.

**We change, we adapt, so we are!**  
**Metamorphosis: The essence of life**



**FROM DIRECTOR'S DESK**

## **EVENTS**

- 1** INDEPENDENCE DAY
- 2** FOUNDATION DAY
- 3** NATIONAL UNITY DAY
- 4** REPUBLIC DAY
- 5** INTERNATIONAL WOMEN'S DAY

## **WEBINARS**

- 6** OPPORTUNITIES FOR CHEMICAL AND PETROLEUM ENGINEERING STUDENTS IN PRESENT MARKET
- 7** HOW CAN MATHEMATICS HELP TO KEEP THE WORLD CLEAN
- 8** ARTICLE QUEST
- 9** INAUGURATION CEREMONY OF IIFE SPE STUDENT CHAPTER
- 10** VIRTUAL PANEL DISCUSSION

# **CONTENTS**



**11**

CAREER TALKS

**12**

QUIZOPHILE

**13**

FUTURE OPPORTUNITIES IN OIL AND GAS INDUSTRY

**14**

PLANTATION DRIVE

**15**

GREEN REFINING - THE FRONTIER

**16**

PETROBOWL

**ABSTRACT ARTICLES**

**ACHIEVEMENTS**

**FACULTY PUBLICATIONS**

**PHOTO GALLERY**





## FROM DIRECTOR'S DESK

*It gives me immense pleasure to share with you all that IPE is bringing out Newsletter Volume 5 Issue I & II namely METAMORHOSIS: The essence of life. The institute is completing its 5<sup>th</sup> year with remarkable placement statistics even in the unexpected and challenging COVID-19 pandemic. The success was possible only because of the hardwork and sincerity of the entire IPE fraternity, especially the Career Development Cell. The faculty publications have been note worthy this year and following their footsteps, students too published many papers. The progress in students' knowledge and academic achievements has been commendable. Academic as well as cultural activities were very well executed virtually during the pandemic. I would like to appreciate the Associate deans, faculty and the staff for their continuous support and constant efforts. Finally I congratulate the Newsletter team for publishing the latest edition of the Newsletter "The Fourth Estate" successfully.*

Prof. V S R K Prasad  
DIRECTOR





# EVENTS





# INDEPENDENCE DAY

15<sup>th</sup> August 2020

The 74<sup>th</sup> Independence Day was celebrated on 15<sup>th</sup> August 2020 jointly in virtual mode via WebEx platform and at IPE premises, following all the covid-19 norms ensuring safety at optimum level. The flag hoisting ceremony took place in the basketball court. The Director of IPE Prof. V S R K Prasad hoisted the flag at the basketball court, and everyone present there sang the national anthem.

The rest of the program continued in IPE's auditorium. Students from different years delivered speeches and emphasized the importance of the day which in turn made all everyone in there patriotic and proud for being Indian citizens.

by V Peter Youngreen; 19PE10040



# FOUNDATION DAY

20<sup>th</sup> October 2020

On 20<sup>th</sup> October 2016, the foundation of IPE was laid, and the first batch of IPE started their journey towards a bright career. The main objective of establishing this autonomous institute was to narrow down the quantitative and qualitative gap, furnish the country with skilled human resources for the petroleum sector, and boost the growth and research in the chemical sector. Indian Institute of Petroleum and Energy celebrated its 5<sup>th</sup> Foundation Day on 20<sup>th</sup> October 2020. Prof. V S R K Prasad, the honourable Director of IPE, was the chief event guest. Due to the prevailing pandemic situation, the event was arranged as a virtual session for all the students via the WebEx platform, whereas every individual physically present in the event strictly adhered to the Covid-19 norms and precautions. Ms. Bhavya Singh, a pre-final year Petroleum undergrad, was the moderator of the event. The event commenced with the lighting of the lamp by the Director of IPE, along with some eminent persons present physically, including the teaching staff in the Seminar-hall. This filled everyone's heart with a spirit of great respect and honor for the institute.

Then a beautiful song was sung by Ms. Deekshita, a Prefinal year Chemical Engineering undergrad. All the attendees were





mesmerized by her performance and enjoyed it. The Director of IPE made a grand release of the 4<sup>th</sup> volume of Newsletter "UNISON", which was compiled by the Newsletter Committee. The helpdesk of IPE shared the newsletter live on the screen to ensure that everyone glanced at it and later sent a soft copy to everyone via email. This was followed by the refreshing speech by Mr. Gaurav Gupta, a prefinal year Petroleum undergrad. His words really made all the students afresh and motivated about how mighty the journey of IPE since its birth was, fighting back across various problems and diving ahead to ensure a better place for all the students in their lives.



Then the respected registrar of IPE shared his remarks on the auspicious day of the Institute's Foundation. Then there was the moment everyone was waiting for. The table was decorated with a super delicious cake waiting to be cut by our honorable Director. Upon announcing, the respected Director of IPE,

faculty, staff smoothly carried out the cake cutting ceremony. This made all the attendees of the virtual meet very much excited. Then respected Director was requested by the moderator to address all the students, faculty and staff. Prof. V S R K Prasad came forward and showered some of the most insightful and enlightening words of our institute's glory and excellence, even in these pandemic times. Every student was deeply obliged to all the teaching and non-teaching staff of IPE for their tiresome work even amidst the pandemic just to provide quality education to all the students and let them settle well in life.

Finally, the event concluded with a vote of thanks by the moderator of the event. All the students thanked the organizing committee of this event for putting in efforts towards the smooth conduction of The Foundation Day of IPE. The credit goes to all the participants of the virtual meet without whom the event wouldn't have been successful. Thus, the event ended in peace, and IPE could add another feather to its hat.

By G Bhanuprakash; 19PE10024  
V Peter Youngreen; 19PE10040



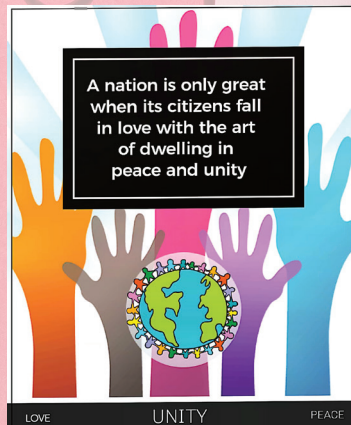
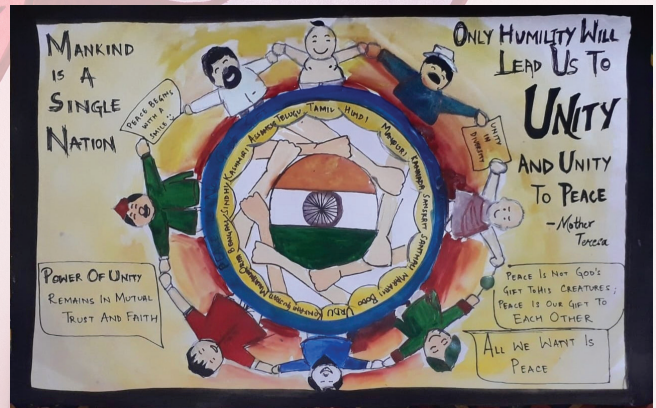
# NATIONAL UNITY DAY (RASHTRIYA EKTA DIWAS)

31<sup>st</sup> October 2020

National Unity Day (Rashtriya Ekta Diwas) is celebrated in India on 31<sup>st</sup> October. The day is celebrated to mark the birth anniversary of Sardar Vallabhai Patel. Known as the 'Ironman' of India, Sardar Vallabhbhai Patel was instrumental in India's independence struggle and the integration of over 560 princely states into the Union of India. The official statement for National Unity Day by the Home Ministry of India cites that the National Unity Day "will provide an opportunity to reaffirm the inherent strength and resilience of our nation to withstand the actual and potential threats to the unity, integrity and security of our country."

The Government of India organises various events for the people of India. All the political leaders and the general public pay floral tribute to the statue of Sardar Patel at Patel Chowk in New Delhi. The government also created a giant statue of Sardar Vallabhbhai Patel in Gujarat to honour his work, and that statue is called "The Statue of Unity", and it is known to be the biggest statue in the world.

To enhance the prestige of this day and to portray students' creativity, IIFE conducted essay writing and poster making online competitions with the themes "Unity is Strength" and "Unity and Peace". There was an involvement of many students from the institution. All the designs of poster making were magnificent and the essays were contemplative. Ms. Kumari Agrani (18PE10043) bagged first place, Mr. Varun Varshney (19CH10021) at second and Mr. Ravi



Teja (19PE10019) at third position in the poster making competition. In the Essay Writing competition, first place was won by Ms. Vindhya Kommaraju (18CH10030), second place by Ms. Kumari Agrani (18PE10043) and third place by Mr. Gaurav Gupta (18PE10033).

The celebration of the 145<sup>th</sup> birth anniversary of Sardar Vallabhai Patel through online mode was a remarkable and memorable event in the online sessions. Active participation of students was

another attraction in this online event. The honor and reverence for the "Ironman of India" was the notable feature of the event.

by Y Bharath ; 19CH10002



# REPUBLIC DAY

26<sup>th</sup> January 2021

Republic Day, 26<sup>th</sup> January 1950, the day when the Indian Republic and its constitution came into force is celebrated with utmost pride and diligence in IIPE every year. With the same pride, we celebrated the 72<sup>nd</sup> Republic Day of India at IIPE, Visakhapatnam. The ceremony took place at the Basketball court in Andhra University College of Engineering. The Chief Guest, the honourable Director of IIPE, Prof.V S R K Prasad, hoisted the flag in the presence of all the faculty and staff members followed by a rendition of the national anthem that echoed the environment and infused the feeling of pride and patriotism among us. Everyone paid tribute to the glorious journey of India. The institute security staff led an enthusiastic long march in the students were not able physically due to COVID-19 restrictions as a symbol of respect towards the nation. The rest of the events were continued virtually along with all the students via the WebEx platform.

On the occasion of Republic Day, an article-writing competition was conducted on the topic, "Atmanirbhar Bharat", followed by a quiz on "Constitutional Amendments". Winners of the two competitions(online article writing, online quiz)were felicitated and provided with digital certificates. Prof. V. S. R. K. Prasad addressed the students with inspiring and enlightening thoughts and reminded everyone of the responsibilities they have on their shoulders to make the country proud, even with a small action. 'One Nation, One Vision, One Identity', the students take pride in glorifying and celebrating the spirit of unity and brotherhood. The event instilled the values of responsibilities and patriotism in the students who are the future leaders of the country. Overall, the event was successful, owing to the combined efforts of the students and faculty. Everyone celebrated Republic Day with immense patriotic zeal and fervour.



by Arpita Tripathy; 19CH10016  
Parikshit Khandelwal; 19CH10047





# INTERNATIONAL WOMEN'S DAY

8<sup>th</sup> March 2021

International Women's Day is a day celebrating the social, economic, cultural and political achievements of women. International Women's Day is a time to reflect on progress made, to call for change and to celebrate acts of courage and determination by ordinary women who have played an extraordinary roles in the history of their countries and communities. The Special guest for the occasion was Respected Prof. Swati Neogi, Professor of Chemical Engineering, IIT Kharagpur, who talked about the historical reforms that changed society's face and shared many insights from her life. Awards were given to the girl students who excelled in academics. Dr. Raka Mondal, Assistant Professor of Chemical Engineering at IPE, was bestowed with the Nari Shakti Award as a recognition of the contribution by a female employee, which was given by the Hon'ble Director of IPE, Prof. V S R K Prasad. Winners of the three competitions conducted on this occasion were also declared. The event ended with a talk by Prof. V S R K Prasad.

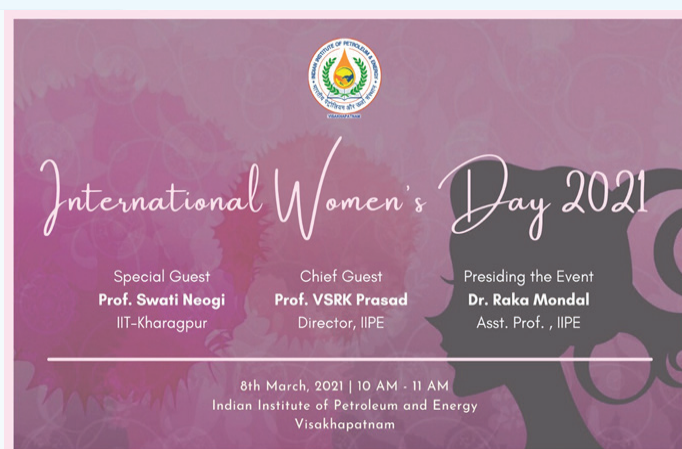
## Women's Day Special Awards:

### Recipient of the Nari Shakti award 2021

Dr. Raka Mondal Assistant Professor

### Recipients of the "Academic Excellence Award for Girl Students" :

Ms. Konala Reshma Reddy	17PE10016
Ms. Shaik Rubeena	17CH10025
Ms. Kumari Agrani	18PE10043
Ms. Vindhya Vasini Devi Kommaraju	18CH10030
Ms. Vemulapalli Pallavi	19PE10036
Ms. Subhadra Jamkar	19CH10006



### Winners of the video making competition:

#### Topic: Role of Women in our Life

Mr. G Bhanu Prakash	19PE10024	Winner
Ms. Aayushi Jagat Gangwar 20PE10022 & Mr. Aman Bhaskar	20CH10029	2 <sup>nd</sup> position
Mr. Shaik Abdul Kalam	20CH10030	3 <sup>rd</sup> position

### Winners of Extempore Competition:

Mr. Ayush Ranjan	20CH10022	3 <sup>rd</sup> position
Mr. Pratyush Bhatt	20CH10056	2 <sup>nd</sup> position
Ms. Aayushi Jagat Gangwar	20PE10022	Winner

### Poster Making Competition:

#### Topic: Women in STEM (Science, Technology, Engineering, and Mathematics)

Ms. Kumari Agrani	18PE10043	Winner
Mr. Ashwin Kumar	19PE10007	2 <sup>nd</sup> position
Mr. Abhijit Das	19CH10019	3 <sup>rd</sup> position

by Naman Raturi; 19CH10013

# ONLINE WEBINARS





# “OPPORTUNITIES FOR CHEMICAL AND PETROLEUM ENGINEERING STUDENTS IN THE PRESENT MARKET”(WEBINAR)

11<sup>th</sup> August 2020

*This Webinar was conducted by Career Development Cell (CDC), IPE for the session 2020- 21.*

**Topic of the Webinar:** *“Opportunities for Chemical and Petroleum Engineering students in the present market”.*

**About the Speaker:** *Shri. Suryanarayana, Retd. Head - Learning and Development, TATA Consultancy Services, Hyderabad. Mr. Suryanarayana has 38 years of experience (24 years in TCS and 14+ years in HAL, Hyderabad). He had performed varied and diversified roles in his career and was involved in consultancy assignments (management consultancy and IT systems development, strategy & governance, BPR, ERP systems implementation) both in government and private sectors. He has domain experience in Manufacturing, Maintenance and Quality and HR functional areas.*

*Mr. Suryanarayana did his Bachelors in Mechanical Engineering from Regional Engineering College, Warangal and later completed Post Graduate Diploma in Business Management (Production and Operations Management) from the Indian Institute of Management, Bangalore. He began his career in HAL, Hyderabad (June 1978- 1992), as a Maintenance Engineer, was involved in managerial roles in Production Planning, Quality Systems and Plant Engineering / Maintenance depts. Besides, he is a Certified Quality Assessor for ISO 9000, PMP, and underwent certification training in Managing Successful Programs from AIM Academy, UK (Large Program Management).*

**Overview and Topics Discussed:**

*Mr. Suryanarayana opened the webinar with a brief introduction, followed by providing an overview and the structure of the Webinar. He initiated by stating how diverse the Oil and Gas Industry is, as per the present scenario.*

**Preliminary focal areas:**

*1. The oil and gas sector is highly diverse – there is a multitude of careers available, each offering something unique. There are ample opportunities in working offshore on rigs, ships and FPSO’s, as well as onshore too. Working within the oil and gas industry helps keep vital resources such as electricity, fuel, and chemical production running.*

*Chemical and Petroleum engineers are a critical resource to the oil and gas industry for the present market scenario to ensure petroleum and oil materials go directly into gas tanks. The correct chemicals are used to get crude oil into a usable form. Companies are looking for the best Chemical engineers and Petroleum engineers in the oil and gas sector who can explore the best possible solutions for the benefits of the industry.*

*2. One of the most desirable oil and gas jobs: Employers who require chemical engineers span a wide range of industries, with key players including oil and gas. For large exploration and production companies, there are a variety of roles for workers with a background in chemical engineering. These workers are needed in the upstream, where catalysts, polymers, and new molecules help boost production. There are also opportunities in labs and downstream operations, which are focused on what happens with hydrocarbons once they are out of the ground.*

*3. As conditions for extracting oil become increasingly tricky, chemical engineering jobs within this field are extremely desirable. As reserves become harder to extract, the oil and gas industry requires top quality engineers to sustain it. Because of this, the oil and gas sector offer an extremely generous income. For graduates looking to get into this industry, it offers the highest graduate engineering salary of any sector. As most oil and gas companies have offices abroad, there is a chance to gain international experience. This widens the scope of job roles and locations available for chemical engineering jobs, spanning from Offshore Europe, Texas and California, to North Dakota and Alaska.*

### **Key Takeaways:**

Participants raised many questions and provided comments regarding the future scope of Chemical and Petroleum Engineers and how it connects with the broader world.

### **The key takeaways from the discussion are listed below;**

1. *The need of Chemical and Petroleum Engineers: a career in the oil and gas sector as a Chemical Engineer or Petroleum Engineer is not dull. The exciting and challenging nature of this field means that each day is varied. Despite the need to reduce carbon emissions, we're likely to be dependent on oil and gas for some time now, meaning that there is an on-going need for this field of work. As technology continues to advance in this area, this means that workers will always be in demand and will keep learning something new.*

2. *Why the oil and gas sector: The oil and gas sector is the ideal field for chemical engineers looking for varied working conditions. Offshore oil rigs mean that workers will be outside a lot in varied surroundings, while there are also plenty of jobs that are based in labs and offices, so you have a choice of which work environment you prefer. No matter which work setting you choose, the oil and gas industry offers many training and development opportunities. Due to the need to retain top talent, many employers provide excellent training for their workers, as well as offering other bonuses such as a pension plan and healthcare.*

by Prabhat Dangi; 19CH10031

## **HOW CAN MATHEMATICS HELP TO KEEP THE WORLD CLEAN?**

■ 17<sup>th</sup> August 2020

*Dr. Ian Griffiths, Professor, University of Oxford (Industrial Mathematics and a Royal Society University Research Fellow) gave a lecture about how mathematics can solve physical problems that can help and keep the world clean. He presented mathematical models, which play a crucial role in the world. He enlightened us about the applications of mathematics in making better face masks, cutting-edge virus filter and and remove Sulphur Dioxide that induces acid rains. He revealed how these filters can remove or transform toxic substances into safe materials. He discussed a homogenized model for a flue-gas filter that converts sulphur dioxide into liquid sulphuric acid, flow and contaminant transport in fibrous fibres, which prevents the virus from entering our bodies. He also described the arrangement of fibres in the face masks and how to fabricate them, followed by a discussion on his ongoing projects. Prof. Ian Griffiths delivered a very informative and exciting talk. We thank him for giving his valuable time to us. We thank all the faculty coordinators, Chemical Engineering Department at IPE for organizing the webinar.*

The poster is for a webinar titled "How can mathematics help to keep the world clean?". It features the following elements:

- Logo:** Indian Institute of Petroleum and Energy (IIPE) logo on the left.
- Series:** "WEBINAR series" in red text.
- Department:** "Chemical Engineering Department, Indian Institute of Petroleum and Energy-Visakhapatnam" in a yellow box.
- Session:** "Session 1" in red text at the top right.
- Speaker:** A portrait of Dr. Ian Griffiths, Professor at the Mathematical Institute, University of Oxford.
- Topic:** "How can mathematics help to keep the world clean?" in a dark blue box.
- Call to Action:** "Participate for live session and interaction" in red text.
- Date and Time:** "17<sup>th</sup> August, 2020" and "3 pm (IST)" in separate boxes.

by G Bhanu Prakash; 19PE10024



# ARTICLE QUEST

22<sup>nd</sup> October 2020

*ARTICLE QUEST, a competition held by IChE which included two main elements: "Review of Research papers" and "Case Study". This competition was held to motivate students to go towards the field of research and thereby improve their concepts. This event was open for all Petroleum and Chemical undergrads. For writing the review of a Research paper students choose their topic of interest and refer to many research papers needed to write the review. In the Case Study Competition, the participating students picked one case related to the topic of their interest, and prepared Case study in the specified format. Research is a substantial field where the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings. Whatever the field may be, exploring new elements in the world can bring out significant changes for the betterment of lives. Case study objective is to do intensive research on a specific case, such as individual, group, institute, or community. Case study makes it possible to identify essential factors, processes, and relationships. This is a prominent field where we could understand the causes of any situation or outputs of the works being done. In this competition students were given a time limit of 30 days to submit their respective papers with the topics of their interest. Students were allowed to form groups (maximum of 3) for one paper, so that there will be more exchange of ideas and broader view of the particular topic. There was a majority of participation witnessed for this competition and the IChE student chapter felt worthy of holding this event. All the students who participated in this event were provided with certificates which added value to their resume.*

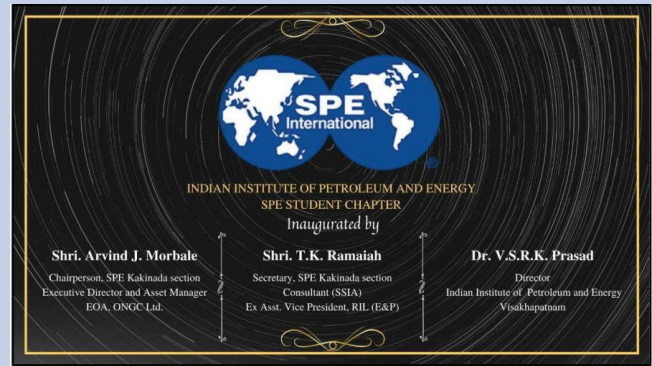
by A Vipul Kumar 19CH10010

## INAUGURATION CEREMONY OF IIPE SPE STUDENT CHAPTER

12<sup>th</sup> December 2020

*Envisaged to serve as the fountainhead for nurturing world class technical education, IIPE intends to create technical professionals who are quite pertinent to take on engineering responsibilities across the entire oil and gas industry and instill innovative thinking to solve the problems related to advancement in energy and environment sector. In pursuit of fulfilling its ambition, IIPE has established the SPE Student chapter on October 15<sup>th</sup>, 2020. Aligned with objective and vision of SPE International which is a non-profit, student's technical organization focused on promoting the technical knowledge and expertise in the field of oil and gas sector, IIPE has inaugurated the SPE Student chapter on December 20<sup>th</sup>, 2020 virtually through Cisco WebEx platform. Shri Arvind J. Morbale (Chairperson of SPE Kakinada section cum Executive director & Asset Manager Eastern Offshore Asset, ONGC Ltd.) was the respected Chief Guest for the event and Shri T.K. Ramaiah (Secretary, SPE Kakinada section Consultant and Ex Asst Vice-President, Reliance Industries Ltd. (E&P)) consented to be the Guest of Honour for the auspicious ceremony. The inaugural ceremony began with brief introductory speech given by Ms. Kumari Agrani (Vice President, IIPE SPE Student Chapter) regarding the establishment of the SPE student chapter and also mentioned about the different upcoming events being organized by the committee like "Prerna" under which the student members would impart education to the poor and needy children free of cost. She also told about the engagement of the chapter in welfare events like beach cleaning, sanitation drive, Go-Green Plantation drive. Then Dr. Shailesh Kumar, the faculty coordinator of IIPE SPE Student chapter addressed the crowd expressing his sincere gratitude to the chief guests and guest of honour for showing their benign presence and making this ceremony a resounding success. He talked about how the petroleum stream is a combination of many other streams and SPE makes it possible for the students to get access to useful information on such subjects.*

He mentioned that IPE already has 268 members linked to the SPE and has more first year students coming up to join. Last 7 but not the least, he concluded by saying that the IPE SPE Student Chapter is an organization for the students, of the students and by the students. Thereafter, the moderator Ms. Bhavya Kumari sought permission from Director and the chapter was officially inaugurated using a virtual animation poster video.



The virtual dais was then decorated with the presence of the President of the event, Prof. V S R K Prasad (Director, IPE) who greeted the crowd before beginning his address and thanked all the people who made it possible for the chapter to be established and for the event to be organized. He thanked Shri KV Rao sir who served as the major foundation for the establishment of the event. He then praised the event followed by the scope of improvements. He mentioned how the Petroleum sector has now become one of the major giants in the industrial overview, and that every country's economy is judged by their petroleum resources. It was marked that the SPE chapter would provide more exposure to petroleum world and would enable the students to meet and listen to the wise words of more eminent personalities such as the guests present on that day. Shri T.K.Ramaiah then came onto the virtual dais and called the establishment of the chapter a happy movement and then he highlighted the importance of the mission and core values of SPE and their significance in promoting exchange and leverage of technical knowledge with scientific integrity to the young budding professionals building their career in oil & gas energy sector. He praised the efforts made by all student members who worked hard in making this ceremony a grand success. He voiced out about how the Petroleum resources and Petroleum Engineering itself are very crucial entities now and that the country needs more intelligent and able manpower to take the lead. He advised the students that as they have been on a tough road to IPE, they should now make use of the extensive infrastructure, the faculty and the facilities of the institute. He concluded on a high note by sharing his motto 'AP' which indicates to Aim higher along with persistent efforts and do not settle for anything lesser, if followed diligently yields greater returns for the companies as well as the country also.

Thereafter, our honorable Director presented a virtual memento to Mr. Ramaiah for being a valuable source of inspiration and enlightening the students. A brief presentation was then delivered by Mr. Ayush Tyagi (Membership chairperson, IPE SPE Student chapter) where he informed about the various SPE guidelines that our committee should strictly abide by, introduced all the student members of IPE SPE Student chapter to the dignitaries, and then briefed the crowd about the upcoming events that would be organized by the chapter. Shri Arvind J. Morbale, the reverent Chief Guest talked about the benefits that the students could get through this chapter in enhancing their technical and professional skills in the oil, as and energy sector. He also talked about the gaining popularity of gas-based economy in coming future with an objective of low carbon emission in environment. He brought up that here were numerous topics to be studied and worked upon in the petroleum sector. A step ahead was provided by his words when he said that ONGC, Kakinada will help the students in every way possible and allow industrial visits for better approach and aspect for Petroleum Industries. At last, a Memento was given to the Chief Guest by our respected director, Prof. V S R K Prasad as a token of respect. The event concluded with a Vote of Thanks by Ms. Jahnvi Koyyana (Treasurer, 8 IPE SPE Student Chapter) to all the invited guests and participants for gracing the occasion by their solemn presence and that the event has been a successful and informative one.

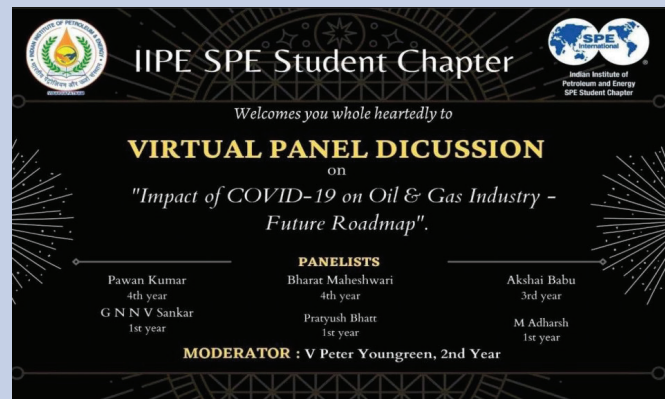
by V Peter Youngreen; 19PE10040



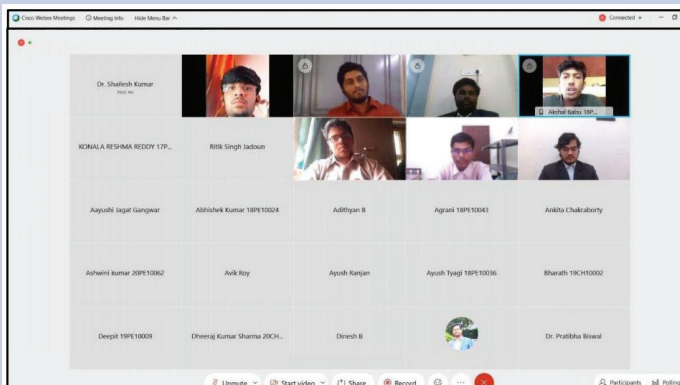
# VIRTUAL PANEL DISCUSSION

9<sup>th</sup> January 2021

IPE SPE Student Chapter has been striving expeditiously to provide sufficient exposure to the students in Oil and Gas Industry through Workshops, eminent guest lectures, Panel discussions etc, and this time to test the oratory prowess of the Students IPE SPE Student Chapter conducted a Panel Discussion on the topic "Impact of COVID-19 on Oil & Gas Industry - Future Roadmap" on January 9<sup>th</sup>, 2021 (Saturday). The discussion started with the initial remarks by Ms. K. Reshma Reddy introducing the Panelists and Moderator of the



discussion Mr. Peter Youngreen who spoke about the regulations and the motto of the topic for an engaging the panel discussion. The proceedings were initiated by the intriguing insights of Mr.Pawan Kumar on long term effects of the ban on international travelling in the Civil Aviation Sector which is the second most consuming sector of oil and the hot topics like decrease in the demand for oil which caused the reduction of prices and ultimately led to depreciation of wages and Job cuts in the employment scenario and also the future roadmap for greater efficiency and reduce production costs by adoption of Digitalisation, Machine learning and Data Sciences were discussed in detail. This topic was taken forward by Mr. Bharat Maheshwari who further analysed the need of Automation in different spheres like the usage of drones for remote monitoring and sensing and subsea processing systems for separating oil and water at seabed which decreases human dependence and HSE policies are adhered in a better manner. Hereafter, Mr.Pratyush Bhatt shared his perspective about how this adversity can be a blessing in disguise to innovate and adapt digital technology and other new strategies in order to overcome the imbalances created in the oil demand and supply chain. Mr.Akshai Babu, pointed another facet of International Relations between countries which were highly impacted like the US economic sanctions on Iran and the power struggle between Saudi Arabia and Russia ,which



led to crashing of prices and production cuts which helped non-OPEC countries to refill their Strategic Petroleum Reserves. Mr. Sankar and Mr. Adarsh spoke about the logistics based on impacts bore by the companies and countries in different parts of world and how to increase the skill of upcoming workers in order to implement artificial intelligence and provide more employment giving a boost to economy The discussion concluded with Questionnaire from the audience on current and future prospects of unconventional resources and Govt. interventions and whom should be responsible for the recent price hike etc, which led furthermore for a deeper discernment on these issues. It was a successful event and imparted a lot of knowledge to the chapter members of IPE.

by V Peter Youngreen; 19PE10040

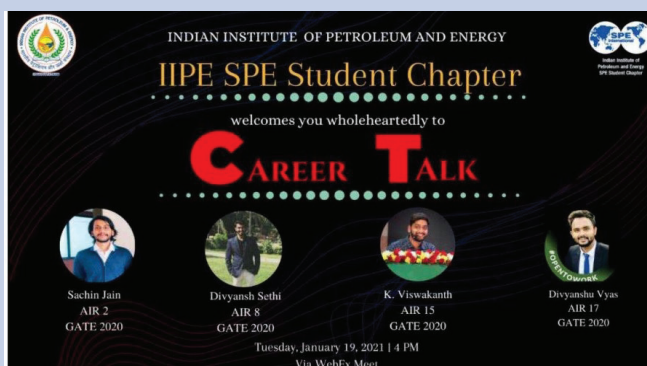
# “CAREER TALK”

■ 19<sup>th</sup> January 2021

IIPE Student SPE Chapter organized an event “Career Talk” virtually on Cisco WebEx platform on 19th January, 2021 (Tuesday) cordially inviting all the top rank securer of GATE 2020 of Petroleum Engineering branch to share a slice from their cake of wisdom and inspire all the students with optimism and determination. It was a lively and interactive session conducted with with an objective to formulate a concrete and effective strategy of study for cracking various competitive exams and interviews concerned with Oil and Gas segment. Equal emphasis was also laid on of research opportunities and benefits of pursuing Master’s degree for the students dreaming to shape their professional career in the Oil and Gas Industry.

Furthermore, they talked about the importance of Machine learning and Python (Reservoir Simulation) which are growing rapidly all over the petrochemical sectors. They equally focused the importance of renewable energy sector and how to create a sustainable environment by effectively using the fossil fuels in our day- to day- life. At last, a Q&A session was held where all the participants got an opportunity to clarify their doubts related to their professional career.

This event indeed posed to be an excellent platform for the students to get motivated and inspired for striving hard and excelling to touch several heights of success in their emerging professional career with strong dedication and perseverance.

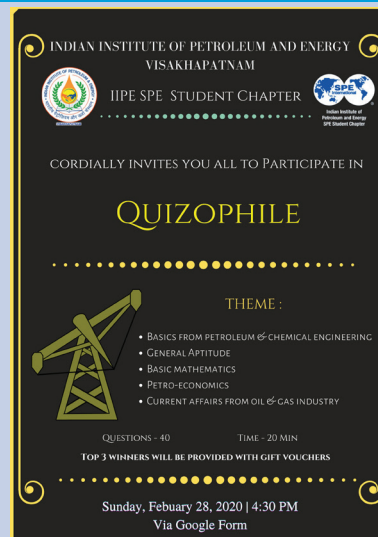


by V Peter Youngreen 19PE10040

# QUIZOPHILE

■ 28<sup>th</sup> February 2021

The IIPE SPE Student Chapter organized an online quiz competition “Quizophile” on 28<sup>th</sup> of February 2021. The SPE IIPE Student chapter extended a cordial invitation to all the students of Petroleum Engineering and Chemical Engineering to participate enthusiastically in this competition. The quiz consisted of a total of 40 MCQ-type questions with an objective to test the conceptual clarity of the students in the domain of basic mathematical and technical skill, along with general aptitude, petro-economics, and current affairs pertaining to the oil and gas industry. The event went very smoothly under the supervision of concerned IIPE SPE Student Chapter faculty and technical volunteers. Nevertheless, the combined efforts of all the members of various committees did strive hard for making this event interesting as well as successful. The top 3 winners were awarded Gift vouchers and Certificates of Achievement by honourable Director Prof. V S R K Prasad. Special thanks to Dr. Shailesh Kumar, Faculty Advisor of IIPE SPE Student Chapter for helping the young minds and for conducting the event. Thanks to all the participants without whom the event would not have been successful.



by V Peter Youngreen; 19PE10040

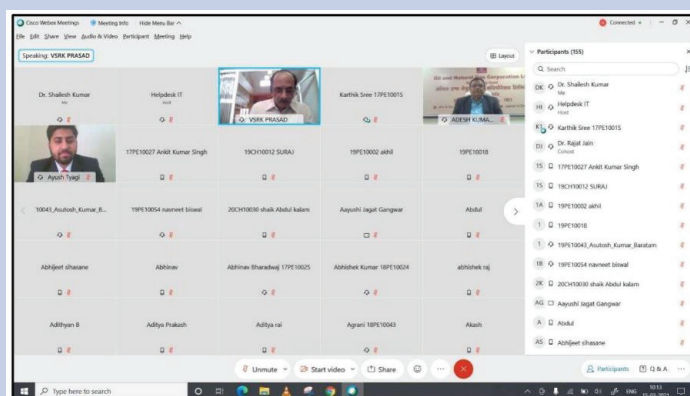


# “FUTURE OPPORTUNITIES IN OIL & GAS INDUSTRY”

15<sup>th</sup> March 2021

IPE SPE Student Chapter in collaboration with AAPG Student chapter organized a seminar on “Future opportunities in oil and gas industry” on 15<sup>th</sup> March 2021 virtually through Cisco WebEx platform where leading experts from the oil and gas industry were cordially invited to share their knowledge and industrial perspective with the students. The seminar began with an introductory speech delivered by the membership chairperson of the IPE SPE Student Chapter Mr. Ayush Tyagi who moderated the entire event as well. Then brief introductions about the IPE SPE student chapter and IPE AAPG Student Chapter were delivered by their presidents K. Reshma Reddy and Abhinav Bharadwaj.

Hereafter our honourable director Prof. V S R K Prasad presided the seminar by giving a brief introduction about the invited speakers and the chief guest. It was followed by a vote of thanks which was presented by the Vice President of IPE SPE Student Chapter Miss Kumari Agrani. The first technical talk was delivered by Miss Shreya Singh in which she discussed about reservoir characterization and utilizing formation testers and new trends in the industry. Under this she explained about the formation testers in brief, basic principles involved in pressure testing, down-hole fluid analysis and sampling. Furthermore, she talked about necessity of measuring formation pressure and its application, ORA: Wire-line formation testing platform and DELFI cognitive E&P environment. Then a short Q&A session took place regarding clarification of doubts in context to the talk.



The next address was given by Shri Manish Kumar under the umbrella of which he threw light on enhanced oil recovery and how it increased the recovery factor of the reservoir. Further, he talked about ER screening, processes like screening based on SPE 12069 DOE screening based on Taber et al SPE 35385. He also laid emphasis on EOR projects undertaken by oil India limited in its several fields like Beghawala PML, Naharkatiya Dikom and finally concluded with summarizing ER Policy. A Q&A session was

held in the end of the lecture for the clarification of doubts. After that, the virtual dais was took over by Shri Adesh Kumar where he talked about global gas oil scenario including during post Covid era. He continued by giving deep insights about energy scenario strategy adopted by government in promoting zero carbon emission using renewable, reserves of oil and gas, sedimentary basin in India. In the end he talked about the strategy to be adopted by ONGC in coming years till 2040 in energy sector and in the segments of oil, gas, power renewable and emergence of Digital Centre of Excellence (DCoE) followed by a Q&A session. The Seminar was a very informative and insightful, and all the participants had a great time having an interaction with the speakers. It can be aptly said that the event was a successful one.

by V Peter Youngreen; 19PE10040

# PLANTATION DRIVE

■ 20<sup>th</sup> - 26<sup>th</sup> March 2021

*Along with disseminating knowledge, IIPE SPE Student Chapter lays special emphasis to create a green and cleaner environment promoting environmental consciousness among the students and all its members to safeguard the natural beauty of our precious mother nature. After functioning actively for four months since our chapter's establishment in December 2020, we conducted our first community service, "Plantation Drive" to promote environmental consciousness amongst the students, our members, and the society. In this one-week drive, from 20th -26th March 2021, we encouraged and urged all the students to plant saplings in and around their locality and share pictures of the planted saplings/plantlets with us along with suitable captions that could spread awareness that could spread awareness among the people and make them aware of their*



*responsibilities towards the environment. Students from over 20 cities participated in this event and planted over 50 saplings. We were overwhelmed with the responses even though it was conducted online and not collectively in the college campus. The faculty and staff members also did their best to contribute to mother nature and planted saplings in and around the college premises. This*

*event was an attempt to emphasize on the need for the protection of our planet. We could encourage the community around to indulge in similar activities and contribute towards a clean and green nature. By conducting this SPE Cares activity locally, we fulfilled the SPE's mission by recognizing the community service activities and working towards it arduously. We aim to carry forward these initiatives by partnering with local organizations and chapters.*

**by V Peter Youngreen  
19PE10040**



# “GREEN REFINING - THE NEW FRONTIER”.

27<sup>th</sup> March 2021

Hindustan Petroleum Corporation (HPCL) and Indian Institute of Petroleum and Energy (IPE) had organized a panel discussion on emerging technologies in the field of Green Refining. This event was held as a part of AZADI KA AMRIT MAHOTSAV, the celebrations of 75 years of India's Independence under the aegis of Ministry of Petroleum and Natural Gas.

The event was held offline strictly adhering to all the covid-19 protocols as well telecast live as a webinar, on 27<sup>th</sup> of March 2021. The panel discussion was based on the theme “Green Refining- The New Frontier”.



The event kickstarted with the patriotic exuberance by singing our national anthem. Then was the welcome address stated by Shri M. K. Surana, C&MD, HPCL. Those words were really enlightening for all the participants, staff who were attending online as well as offline. It was followed by the delivery of key note address by Shri Tarun Kapoor, Secretary (Petroleum & Natural Gas). Thereon, Shri S. Bharathan, Head- R&D, HPCL made the context of panel discussion clear to everyone along with the panelists.

The panel consisted of the following dignitaries:

1. Mr. Mike Banach, MD, UOP India Pvt Ltd, Honeywell UOP, Gurgaon;
2. Mr. Vinayak Pai, Group President, Worley, Netherlands;
3. Prof. V S R K Prasad, Director-IPE, Visakhapatnam,
4. Mr. T. Rajendra Reddy, Joint Chief Environmental Engineer, APPCB, Visakhapatnam;
5. Prof. Vishal Singh Patyal, Indian Institute of Management, Visakhapatnam;
6. Mr. V.S. Shenoy, Director-Refineries, HPCL;
7. Mr. V. Ratan Raj, Executive Director-Visakha Refinery, HPCL

And then the panel discussion started. It was really a wonderful panel discussion touching various aspects of the new emerging technology in the field of Green refining from all the dignitaries in their respective field of specialization. All the attendees attending the event both offline and online were quite satisfied with the discussion made by the panel since it was very informative and knowledgeable. Then there was an insightful interaction with Guests of Honor namely Mr. Prabh Das, Chief Executive Officer, HMEL: Mr. M Venkatesh, Managing Director-MRPL: Ms. Vartika Shukla, Director- Technical, EIL.



And after that, a Q&A session took place and the session was very engaging. Finally, the event ended with a vote of thanks. The event was held successfully only because of the joint efforts of IPE and HPCL.

by V Peter Youngreen; 19PE10040

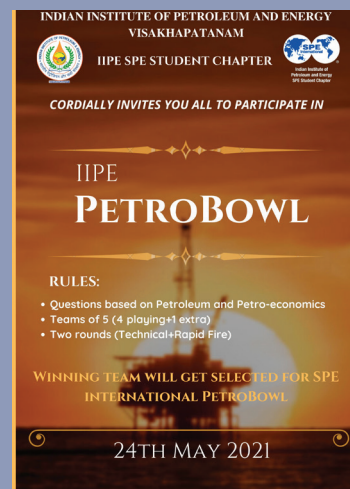
# PETROBOWL

24<sup>th</sup> May 2021

On 24<sup>th</sup> May 2021, the Indian Institute of Petroleum and Energy organized "Petro Bowl", an Intra-college virtual quiz competition open to all students of Chemical and Petroleum Engineering. The competition's main objective was to examine the conceptual clarity of students in the fields of Petroleum, Petro-Economics, and Current Affairs pertaining to the Oil and Gas Industry. The competition was held in two rounds: The Technical round and the Buzzer round. The teams for the competition had a total of 5 members, out of which 4 were active members and 1 member was kept as reserve. A total of 12 teams registered for the event. The technical round was conducted through Webex (conferencing application) wherein all the participating teams were shown the questions and had to answer them in 15 seconds. The participants were allowed audio communication with each other and after reaching a consensus, the team leader marked the answer. After the conclusion of the first round, 6 teams were able to qualify for the final round: The Buzzer round. This particular round was held on ccg.buzz. The teams were required to press the buzzer in order to answer the question. For every correct answer, 10 marks were awarded to the team. However, every incorrect answer came with a penalty of -5 marks. Out of the 6 teams, 3 teams came out on top with their quick, critical thinking and coordinated teamwork.

All the winners were awarded a gift voucher as well as a Certificate of Achievement. Team Shakers represented IIPE at the International level and did their best to participate in the Petro Bowl Asia Pacific Regional Qualifier organized by SPE International that was held on 10th July. Overall, the event was a success, with healthy participation from students and a smooth and thrilling quiz being conducted by IIPE SPE.

by V Peter Youngreen  
19PE10040





# ABSTRACT ARTICLE



## *Steve Jobs- The man who wanted to put a dent in the universe*

*“The people who are crazy enough to think that they can change the world are the ones who do,” — Steve Jobs*

*My grandfather used to say that if you want to understand life and live it to the fullest, you need to learn about the people who did so.*

*Start knowing about those amazing people ever born who came up with a vision, values, ambitions, style, way, and who came to push their boundaries for the betterment of humans.*

*A lavish life should not be the benchmark of your success, but the most wanted life should be your aim or a value-added life.*

*I am practicing this teaching of him in my early 20s, I guess it's early or not. I don't know.*

*It's been a while and I am reading about the man behind the style of Apple and the man who taught us how to put a dent in the universe — Yes, you got me right, it's Steve Jobs.*

*All about What I learnt from the greatest person who contributed to the world at his highest possibility:*

*1. No one is more or less smart than you:*

*There is a misconception among people that the X bunch is way smarter than you or any individual who is really good at academics is out of your reach. Steve was never the smartest or the most intelligent one, instead, he was a simple boy. But what makes him the 'best' is the need of the deed. It means don't indulge in that stuff which is less important and which doesn't have a future. Steve was amazed when he saw the computer for the first time and knew the possibilities of this wonderful machine. He got the thing that this is, what I really wanted to put my hard work on.*

*2. If the vision is revolutionary and you have your full faith in it, then no matter what, you'll get there:*

*Steve founded the name of his company in a car hanging out with his friend Woz and named it 'Apple Computers'. His friend was like 'What', really!!! It's a fruit. Steve said- "Yes, it's a fruit. Simple and Sophisticated. People buy apple because of its credibility and benefits in the market, no matter how costly it is, they are going to buy it. Our company is going to build that kind of credibility in the market. He did not know how the path and journey is going to be but what he knows was the 'final destination' which was firm enough.*

*Apple is going to be 'The social status', Apple is going to be the Quality.*

*And it is very true. Whenever I see someone holding an iPhone, it builds an image that that person is rich; I don't why, but it does.*

*3. Honesty is a policy that adds value and standard to your life:*

*Whenever any of Steve's colleagues used to ask him -How's it. He always used to say- Just be brutally honest with me and then backfires the same question to the person and got the best results. And it is the greatest quality you can ever expect from a person.*

*An honest mindset shows results dishonest mind glitches it up.*

*4. You cannot connect the dots looking forward:*

*What if Steve never went to the calligraphy class, we would have never seen those beautiful fonts on our computer (and then it was copied by Microsoft).*

*What if Steve never got fired from his own company, he would have never got that break in life during which he married the biggest support of his life and started a beautiful family. He started a new company*

*called 'NEXT' which was a whole new experience for him.*

*Everything happens for a reason. You will never understand why this is happening and what is the need for it until you pass it. You cannot connect the dots looking forward. When you are standing on that milestone you always wanted to be, that is the time when you need to look back and bring all the pieces together, you will get your answer that why you went through so much.*

*Life is not all about planning and day dreaming, it's about pushing your boundaries and live it to the fullest. No need to think so much about what's going to happen. If you have a strong instinct about your vision, no one can stop you.*

*The most outstanding words of Steve Jobs-*

*"When you grow up, you tend to get told...the world is the way that it is...your life is just to live your life inside the world...and try not to bash into the walls too much. But that's a very limited life. Life can be much broader...Once you discover one simple fact that everything around you...that you call life was made up by the people that are no smarter than you. And you can change it, you can influence it. You can build your own things that other people can use. It's to shake off this erroneous notion...that life is just there and you're just going to live in it, versus embrace it. Change it, improve it, make your mark upon it. And once you learn that, you'll never be the same again."*

**by Prabhat Dangi; 19CH10031**



# ACHIEVEMENTS



# STUDENT ACHIEVEMENTS

## Research Presentation and Publications

**Ujjwal Dubey (18PE10001), Rahul Pandey (18P10011), Saurabh Goyal (18PE10022)**

*Selected as speakers to present research work on the topic "Fractional flow as a function of water saturation considering capillary effect" in International Field Exploration and Development Conference 2021.*

**D Sree Karthik (17PE10015), Ruthala Sumanth (17PE10031), Voora Dheeraj (17PE10017), Ashok Deva Kumar (17PE10028)**

*Presented research work on "A CFD Analysis on Proppant Transport in Fracture for Foam-Based Fracturing Fluid" at 3rd International Biennial Oil, Gas and Petrochemical Conference (OGPC 2020), Iran, December 28th-29th 2020.*

**Konala Reshma Reddy (17PE10016)**

*Published research work in the journal, Physical Chemistry Chemical Physics*

*D. Jaya Prasanna Kumar, Reshma Reddy Konala, Pratyush Dayal, "0D-2D heterostructures as nanocatalysts for self-oscillating reactions: An investigation into chemical kinetics", Physical Chemistry Chemical Physics, 2020*

**Uttam Gupta (17PE10040)**

*1. Presented research work on " Wax Formation and Rheology study of Crude Oil samples from Cambay Basin " in the 3rd International Oil & Gas Chemistry, Chemicals and Additives Conference (IOGCA 2020) held virtually from 24th to 26th September 2020.*

*2. Presented and Published research work in journal, Natural Hazards*

*S. Das, J. Mallik, S. Dhankhar, N. Suthar, A. K. Singh, V. Dutta, U. Gupta, G. Kumar, R. Singh, Application of Fracture Induced Electromagnetic Radiation (FEMR) technique to detect landslide-prone slip planes Natural Hazards (2020) 101 505-535*

**Koyyana Jahnavi (17PE10005), Konala Reshma Reddy(17PE10016), Naren Kumar Reddy Sabadu (17PE10008)**

*Presented research work on "Computational Fluid Dynamics (CFD) Analysis of Flow Characteristics of Heavy Crude Oil-in-Water Emulsion through Pipelines" in The 3rd International Biennial Oil, Gas and Petrochemical Conference OGPC Bushehr, Iran 28-29 Dec 2020*

**Vindhya Vasini Devi Kommaraju (18CH10030), K Mukesh Kumar (18CH10029)**

*Published research article titled "Composites of cellulose nanofibers and silver nanoparticles for malachite green dye removal from water" in the journal "Carbohydrate Polymer Technologies and Applications".*

**M. Jayadeekshitha(18CH10027), Karthik Raj (18CH10002), Nistala Venkata Subrahmanyam and Dipankar Pal\*,**

*Int. J. Forensic Engineering. Hydrophilic surface modification of polymeric membranes to improve anti-fouling property in Membrane bioreactor.*



# ***Participation in various competitions held outside IIPE***

## ***Achievement details***

### ***Ayush Tyagi 18PE10036***

*Selected as a Grant Recipient for the 2021 “American Association of Petroleum Geologists Foundation L. Austin Weeks undergraduate Grant Program”.*

*Received international recognition by AAPG and 500 USD (around Rs. 37,000).*

### ***Priyanshu Agrawal (18PE10007)***

*Secured 4th rank in PDEU Gate Unlock 3.0*

### ***Sunkari Satya Prasanth (18CH10028)***

*Secured 1st prize in article writing competition held by iEEE on “Use of robots in future, radial bio hacking, nanotechnology for the next generation”.*

### ***Kosireddy Ashok Deva Kumar (17PE10028)***

*Secured First Place in “Petr-O-Probe”, International Level Quiz Competition of Petrovision'21 conducted by AC Tech, Anna University SPE Student Chapter from 26th to 28th March, 2021.*

### ***Shashwat Harsh (18PE10010)***

*Secured Rank 7 in category C (undergraduates) of “LIMIT 2021” competition, an International Online Mathematics Competition, organized by the students and scholars of Indian Statistical Institute (ISI) Bangalore.*

*Got selected for Limit Math Camp organized by ISI for top 50 students.*

### ***Chidurala Hruthik (18CH10037) Rahul Bajaj (18CH10031)***

*Secured 2nd place in an online team event at Chemfluence organized by Association of Chemical Engineers, Anna university on 16th March 2021.*

### ***Shashwat Singh (18PE10023), Rishabh Bharadwaj (18PE10016), Shashwat Harsh (18PE10010) Manish Kumar (18PE10006)***

*Secured first position in International case study competition, conducted by UPES and Reliance E&P Academy.*

### ***Pranay Sinha (18PE10012)***

*Secured second prize in Reading Cement Bond logs quiz organized by Petroleum Engineers Association*

*In addition to the above-mentioned competitions and research achievements, students have been attending various workshops and online training programs.*

## ***Performance in GATE 2021***

*More than 30 students have qualified GATE 2021. The names of students with All India Rank less than 400 for Chemical and Petroleum Engineering are listed below.*

Sl no	Name	Roll number	Subject	(AIR)
1	Kumari Agrani	18PE10043	Petroleum Engineering	13
2	Bharath Maheshwari	17PE10022	Petroleum Engineering	18
3	Dangeti Sree Karthik	17PE10015	Petroleum Engineering	22
4	Ruthala Sumanth	17PE10031	Petroleum Engineering	65
5	Neralla Lakshmi Narasimha Murty	17PE10030	Petroleum Engineering	153
6	Kosireddy Ashok Deva Kumar	17PE10028	Petroleum Engineering	168
7	Saurabh Goyal	18PE10022	Petroleum Engineering	181
8	Rahul Bajaj	18CH10031	Chemical Engineering	253
9	Sudhanshu Ranjan	17PE10026	Petroleum Engineering	258
10	Burra Shanmukh Vamsi Krishna	17CH10031	Chemical Engineering	312
11	T. Lalitha Sridevi	17CH10040	Chemical Engineering	364

## ***Performance in CAT 2020***

*More than 10 students have cleared CAT 2020. Few names of students from Chemical and Petroleum Engineering with CAT percentile more than 88.00 are listed below.*

Sl no	Name	Roll number	Subject	Overall CAT Percentile
1	Shreyansh Somvanshi	17CH10002	Chemical Engineering	99.04
2	Gopa Naga Deepthi	17PE10018	Petroleum Engineering	96.96
3	Swabhaav Narahara Setty	17CH10024	Chemical Engineering	96.42
4	Aryasomayajula Marali	17CH10032	Chemical Engineering	90
5	Konala Reshma Reddy	17PE10016	Petroleum Engineering	88.03



# PLACEMENT STATISTICS

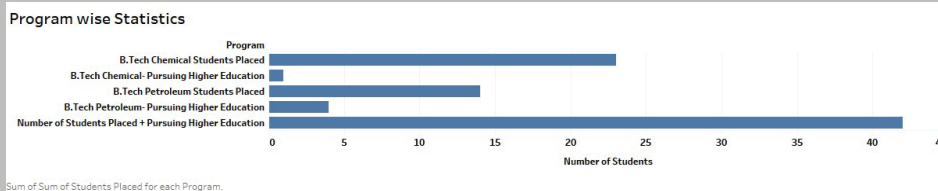
## Program-wise Statistics

The program-wise placement data & number of students pursuing higher education is provided in Table 1 and Figure-1.

**Table 1.** Program-wise placement data

Program	Registered Students	Participated Students	No. of Students Placed	Students Placed Percentage/ Students Pursuing Higher Education Percentage	No. of offers issued Percentage & Higher Education %
B.Tech.Chemical Engineering	40	39	23	53.80 * 2.50 #	66.66 %
B.Tech Petroleum Engineering	42	38	14	36.80 * 9.52 #	47.36%
<b>Total number of students</b>	<b>82</b>	<b>77</b>	<b>37</b>	<b>42.9%</b>	<b>63.02%</b>

\* percentage of students placed, # percentage of students pursuing higher education



Sum of Sum of Students Placed for each Program.

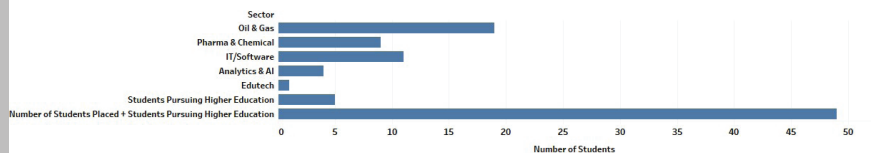
## Sector-wise Recruiters & Higher Education Details

**Table 2.** Distribution of students settled in different sectors

Sector	Number of Students
Oil & Gas	19
Pharma & Chemical	9
IT/Software	11
Analytics & AI	4
EduTech	1
Students Pursuing Higher Education	5
<b>Number of students Placed + Pursuing Higher Education</b>	<b>49</b>

This placement season was dominated by firms from the sectors like Oil & Gas, IT/Software, Analytics & AI, Edu-Tech, Pharma & Chemical & few students have joined with IIT, IIM's & few went abroad for further studies.

**Sector wise Offers Distribution & Higher Education Details**

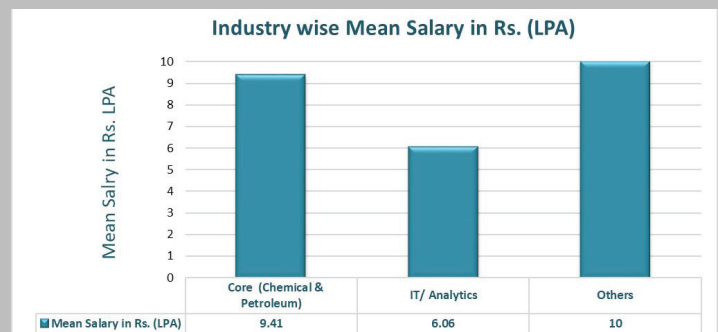


Sum of Sum of Students for each Sector.

## Salary-wise Statistics

The jobs offered by recruiting organizations are divided into various categories and the mean salary for the year is shown in Table 3 & Figure 3.

Sector	Mean Salary in Rs. (LPA)
<b>Core (Chemical &amp; Petroleum)</b>	<b>9.41</b>
<b>IT/ Analytics</b>	<b>6.06</b>
<b>Others</b>	<b>10.00</b>
<b>Mean Salary</b>	<b>8.29</b>





# FACULTY PUBLICATIONS

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## Chemical Engineering

### Dr. P. Venkata Reddy

1. V. R. Palleti, Sridhar, V. K. Mishra and A. Mathur, *Cybersecurity*, 2021, 4, 8. *Cascading Effects of Cyber Attacks on Interconnected Cyber-Physical Critical Infrastructure Systems*.
2. V. R. Palleti, V. K. Mishra, M. Choudhary and A. Mathur, *ACM transactions on Cyber Physical Systems-ACM TCPS*, 2020, 9, 1–19. *Can Replay Attacks to Steal Water from Water Distribution Systems Remain Undetected?*
3. C. H. Yoong, V. R. Palleti, R. R. Maiti, A. Silva and C. M. Poskitt, *Cybersecurity*, 2021, 4, 6. *Deriving invariant checkers for critical infrastructure using axiomatic design principles*.
4. D. D. Tiwari, S. Naskar, A. S. Sai and V. R. Palleti *Computer Aided Chemical Engineering*, 2021, 50, 1259-1264. *Attack Detection Using Unsupervised Learning Algorithms in Cyber-Physical Systems*
5. S. Adepu, V. R. Palleti, G. Mishra and A. Mathur, *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 2020, 274-291. *Investigation of Cyber Attacks on a Water Distribution System*.

### Dr. Pratibha Biswal

1. L. Lukose, T. Basak and P. Biswal, *Numerical Heat Transfer Part A Application*, 2020, 78, 479-50. *Analysis of flow and thermal maps during natural convection within porous triangular configurations subjected to linear heating at inclined walls*
2. S. Agarwal, V. Anand, N. D. Banker and P. Biswal, *Energy Storage*, 2020, e209. *Experimental and Theoretical Studies on Space Heating using Phase Change Material (PCM)*
3. P. Biswal, *Thermal Energy Storage Systems for Concentrating Solar Power Plants, Advances In Renewable Energy: Energy Storage*, 2021, Wiley Publishing, UK

## Mechanical Engineering

### Dr. Arun Kumar Pujari

1. K. Nagabandi, A. Nayak, D. S. Iyer, A. K. Pujari and K. Syed, *International Communications in Heat and Mass Transfer*, 2021, 125. *Influence of oxide thickness on thermal behaviour of high temperature coatings*.
2. A. Singh, A. K. Pujari and B.V.S.S.S. Prasad, *Heat Transfer 2021*, *Conjugate heat transfer analysis of a rotor blade with coolant channels*.

## Humanities & Sciences

### Dr. S. Rathan

1. S. Rathan, N. R. Gande and A.A. Bhise, *Applied Numerical Mathematics*, 2020, 157, 255-275. *Simple smoothness indicator WENO-Z scheme for hyperbolic conservation laws*.
2. S. Rathan and B. Biswas, *Communications on Applied Mathematics and Computation*, 2021, 3, 481-496, *Arc Length Based WENO scheme for Hamilton-Jacobi Equations*.



### **Dr. P. Aparoy**

1. N. Chaudhary and P. Aparoy\*, *Heliyon*, 2020, 6, e04944. Application of per-residue energy decomposition to identify the set of amino acids critical for in silico prediction of COX-2 inhibitory activity
2. I. Ivanov, K. R. Kakularam, E. V. Shmendel, M. Rothe, P. Aparoy, D. Heydeck and H. Kuhn. *Biochim Biophys Acta Mol Cell Biol Lipids*, 2021, 1866, 158918. Oxygenation of endocannabinoids by mammalian lipoxygenase isoforms.

### **Dr. Ch Gupta Chandaluri**

1. N. M. Reddy, D. Saritha, N. K. Dandu, Ch. G. Chandaluri,\* G. V. Ramesh,\* "Recent advances in porous carbon derived from biowaste for catalytic applications" accepted in the book entitled "Biomass-Derived Carbon Materials: Production and Applications" in the Wiley Publishers.
2. K. K. Tadi, N. K. Dandu, N. M. Reddy, G. V. Ramesh,\* Ch. G. Chandaluri,\* "Recent Advances in Functional Materials: Bioelectronics Integrated Biosensors Applications" accepted in the book entitled 'Functional Materials Processing for Switchable Device Modulation'. in the Elsevier, SCI publication.

### **Dr. Kumud M Tripathi**

1. S. N. Chowdhury, T. T. Tung, G. Kumar, M. Castro, J. F. Feller, S. K. Sonkar, K. M. Tripathi\*. *New Journal of Chemistry*, 2021, 45, 3675-3682. Upgrading of Diesel Engine Exhaust Waste into Onion-like Carbon Nanoparticles for Integrated Degradation Sensing in Nano-bio-composites.
2. J. Kaushik, V. Kumar, A. K. Garg, P. Dubey, K. M. Tripathi\* and S. K. Sonkar. *New Journal of Chemistry*, 2021, 45, 9073-9083. Bio-mass derived functionalized graphene aerogel: a sustainable approach for the removal of multiple organic dyes and their mixtures.
3. G. S. Das, A. Bhatnagar, P. Yli-Pirilä, K. M. Tripathi\* and T. Kim\*, *Chemical Communications*, 2020, 56, 6953-6956. Sustainable Nitrogen-Doped Functionalized Graphene Nanosheets for Visible-Light-Induced Photocatalytic Water Splitting.
4. K. M. Tripathi, H. T. Ahn, M. Chung, X. A. Le, D. Saini, A. Bhati, S. K. Sonkar, M. I. Kim,\* and T. Y. Kim,\* *ACS Biomaterials Science & Engineering*, 2020, 6, 5527–5537. N, S, and P-co-doped carbon dots: Intrinsic peroxidase activity over a broad pH range and its antibacterial applications.
5. V. K. Bajpai, I. Khan, S. Shukla, S-M. Kang, F. Aziz, K. M. Tripathi, D. Saini, S. K. Sonkar\*, Y. S. Huh\* and Y. K. Han, *Theranostics*, 2020, 10, 7841-7856. Multifunctional N-/P-doped carbon dots for regulation of apoptosis and autophagy in B16F10 melanoma cancer cells and in vitro imaging applications.
6. T. Y. Kim and K. M. Tripathi\*, *Nano-carbon based-ZnO Nano-composites for Supercapacitors Application*. Published in the book entitled "Nanostructured Zinc Oxide: Synthesis, Properties and Applications", Elsevier Publishing, 2021, 553-573.
7. S. Gowasmi, A. Kushwaha, L. Goswami, N. R. Gupta, V. Kumar, U. Bhan and K. M. Tripathi\*, *Biochar as Green Catalyst for Wastewater Remediation*. Published in the book entitled "Bio-Based Nanomaterials: Synthesis Protocols, Mechanisms and Applications". Elsevier Publishing, 2021.
8. P. Kar, P. Jain, R. K. Gupta and K. M. Tripathi,\* *Emerging Carbon-Based Nanocomposites for Remediation of Heavy Metals and Organic Pollutants From Wastewater*. Published in the book entitled "Emerging Carbon-Based Nanocomposites for Environmental Applications", Scrivener Publishing, 2020, 1-29.



# PHOTO GALLERY





# ONLINE PHOTOGRAPHY COMPETITION - OCTOBER 2020

## WINNERS



*D Sree Karthik  
17PE10015*



*B Ashish Kumar  
17CH10009*

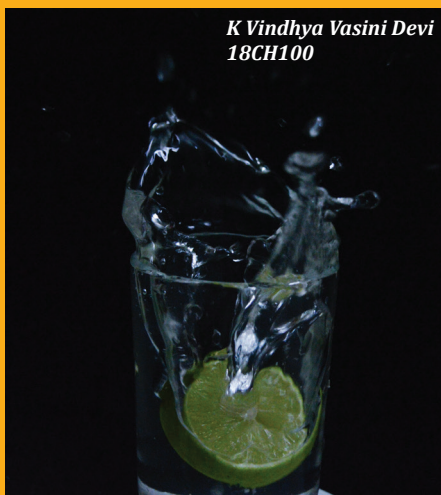


*Shantanu Verma  
19PE10020*

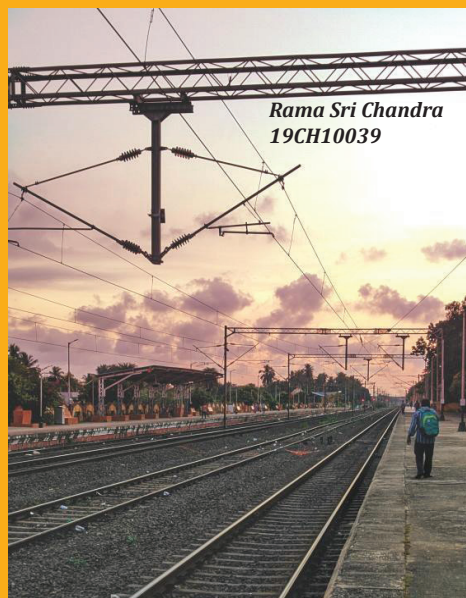
## OTHER ENTRIES



*Abhijit Ganesh  
18PE10017*



*K Vindhya Vasini Devi  
18CH100*



*Rama Sri Chandra  
19CH10039*



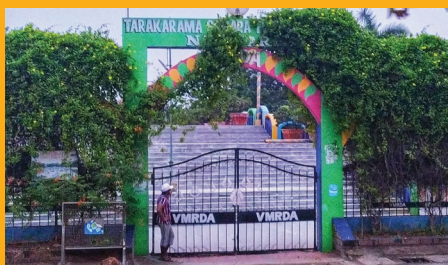
*Nikhil Prasad.19PE10037*



*Narahara Setty Swabhaav  
17CH100*



*G Haripriya  
17CH10015*



*K Venkata Girish Kumar  
19CH10035*





*Nekkanti S S S Chandra  
21RS9002*



*Nekkanti S S S Chandra  
21RS9002*



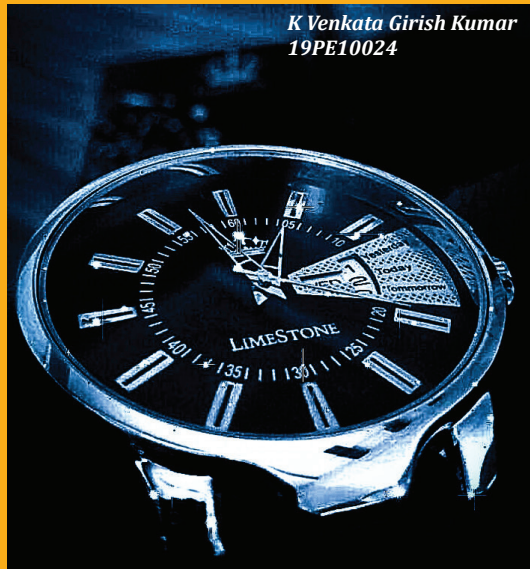
*G Bhanu Prakash  
19PE10024*



*Harshil Padhi  
19PE10008*



*Ishan Chaturvedi  
20CH10044*



*K Venkata Girish Kumar  
19PE10024*



*G Bhanu Prakash  
19PE10024*

*G Bhanu Prakash 19PE10024*





# NEWSLETTER TEAM

## DIRECTOR

Prof. V S R K PRASAD



## FACULTY MEMBERS

Dr. Ch GUPTA CHANDALURI

Dr. S RATHAN

Dr. RAKA MONDAL



## DESIGNER

GORLE BHANU PRAKASH



## STUDENT COORDINATOR

VADDI PETER YOUNGREEN



## MEMBERS

A VIPUL KUMAR

BHARATH YALAKALA

ARPITA TRIPATHY

PARIKISHIT KHANDELWAL

NAMAN RATURI

PRABHAT DANGI

SUBHADRA JAMKAR



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Dr. PRATIBHA BISWAL

Dr. MANASA M

**INDIAN INSTITUTE OF PETROLEUM AND ENERGY,**

Main Building, 2nd Floor,  
AU College of Engineering,  
Andhra University,  
Visakhapatnam, 530003  
Andhra Pradesh.

