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PRESIDENT'S COLUMN

Chemical Engineers



Chemical engineers contribute to society by providing an essential link between the basic chemical sciences and commercial application and production. Chemical engineering is a core engineering discipline, firmly rooted in the basic sciences. As a result, chemical engineering graduates have a broad array of career choices available to them.

Chemical engineers find employment in the chemical and allied industries including energy, petrochemical, biotechnology, agriculture, food, pharmaceutical, environmental and microelectronics. The primary educational objective of the chemical engineering program is to prepare students for diverse professional careers in chemical engineering or for advanced professional study, including medical school. The curriculum is well suited for motivated students with a strong interest in and aptitude for chemistry, physics, and mathematics.

The field of the chemical engineer embraces those industries in which matter is treated to effect a change of state, energy content, or composition; and in these industries the chemical engineer may be concerned with either the processes or the process equipment used for them. The chemical engineer may enter the fields of petroleum processing, pharmaceuticals, food processing, natural and synthetic rubbers and plastics, electronic materials, surface coatings, atomic energy processing, environmental control and biotechnology. The undergraduate program in chemical engineering includes a thorough study of chemistry, mathematics, and physics, as well as an understanding of physical, biological and chemical operations and processes. Engineering courses cover material and energy balances, transport phenomena, reaction kinetics, and process and equipment design. In addition, electives may be chosen from topics such as polymers, biochemical engineering, pollution control, material science, and other special topics.

The breadth of this program permits graduates to enter the chemical industries with confidence, and their abilities will find almost immediate use. Chemical engineers may enter the division of production and advance toward plant or production management positions, or they may find their training useful in design, development, or research departments. In the later cases additional formal education at the graduate level may be desirable. Chemical engineers with master's or doctor's degrees constitute a large percentage of those employed in research and development work. The chemical engineer is a person who has multiple job responsibilities under their charge. One who works as a chemical engineer must do a lot of research in the beginning to determine the best way of producing certain products. Along with researching the issues, the chemical engineer must design programs, machinery and processes which will allow the products to be manufactured. The chemical engineer must also perform a multitude of tests along the way to ensure that everything is going according to plan.

Chemical engineers face many of the same challenges that other professionals face, and they meet these challenges by applying their technical knowledge, communication and teamwork skills; the most up-to-date practices available; and hard work. Thus, the chemical engineer takes an active role in the main stages of a product life cycle and fosters through his communication skills cooperation with other colleagues working in different fields, such as production & engineering, product management, technical services. Continuous and closer linkages and interactions among manufacturing professionals, researchers and academicians belonging to Chemical Engineering, Computer Science and Engineering and Basic Sciences would yield numerous exciting, meaningful and thought provoking results which would definitely set the pace for faster multidimensional growth of Engineering and Technology in time to come.

Prof. Pratapsinh K. Desai
President, ISTE

Proposals invited to host the ISTE National Annual Conventions for the year 2017

As a regular annual feature, forty five National Annual Conventions and eighteen Students Convention of ISTE have been held so far in different States. The major impact of these Conventions are instrumental in providing an opportunity for the Teachers, Educational Planners and Administrators, Students and all other stakeholders who are involved in the field of technical education to get together and share their views and to contribute the development of technical education system.

In this regard, Institutions are welcome to send their proposals for hosting the 20th ISTE Annual Students Convention and 47th ISTE National Annual Convention, which will be organised during October and December 2017 respectively. Proposals received will be placed before the ISTE Executive Council in its meeting to be held during the Annual Convention of ISTE in November/December 2016 for consideration.

Institutions may kindly send their detailed profile alongwith the willingness letter for hosting the Convention to the following address:

The Executive Secretary

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Katwaria Sarai, New Delhi - 110 016
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INAUGURATION OF ISTE STUDENT CHAPTERS

TAMIL NADU & PONDICHERRY

- **Aditya College of Engineering, Madanapalle** ISTE Students Chapter was inaugurated on 15-9-2016. As a part of inaugural ceremony, one day workshop on **Recent Trends in Embedded Systems and Its Applications** was also organised.



Dignitaries on the dais during the inauguration of ISTE Students Chapter.



QUOTE FOR THE MONTH

Behaviour is sometimes greater than knowledge, because in life there are many situations where knowledge fails but behaviour can handle everything.

— Anonymous

WIT AND WISDOM

- Relationships don't need cute voices and lovely faces. They need a beautiful and responsible heart with lots of affection.
- Always forgive your enemies; nothing annoys them so much.
— Oscar Wilde
- Golden time of our life may not return back forever but the good relation and the golden memories will stay in the heart forever.
- Negative thinking or attitude is like a punctured tyre, you can not reach any place until you change it.
- Lotus is the only flower that teaches us where we reach is important not where we come from.
- Discussions is an exchange of thoughts and knowledge. Promote it..! Argument is an exchange of ego and ignorance. Avoid it..!
- Good friends, good books, and a sleepy conscience: this is the ideal life.
— Mark Twain
- Be honest when in trouble and be simple when in wealth. Be polite when in authority and be silent when in anger. This is call the "Life Management".
- Only two types of persons are happy in this world. First is mad and second is child. Be mad to achieve what you desire and be a child to enjoy what you have achieved.
- If you need knowledge, keep adding something new to your mind everyday; but, if you need wisdom, then keep deleting a few things from your kind everyday.
- Thousands of Candles can be lighted from a single candele, and the life of the candle will not be shortened. Happiness never decreases by being shared.
— Budha
- Everything has its beauty, but not everyone sees it.
— Confucius



ACTIVITY FOR THE MONTH

TOPIC FOR DISCUSSION

Distance Education in Engineering

All the Chapters/Student Chapters may conduct Seminars/Workshops on the above topic and send the recommendations to the Headquarters for the needful.

NEWS FROM ISTE FACULTY CHAPTERS

ANDHRA PRADESH

- **PVP Siddhartha Institute of Technology, Vijayawada** celebrated the Engineers Day on 15-9-2016. On this occasion, poster presentation, paper presentation, model presentation, technical quiz, design context and technical JAM events were conducted.



Dignitaries on the dais during the inauguration of Engineers' Day.

- **VNR Vignana Jyothi Institute of Engineering & Technology, Hyderabad** organised guest lecture for II year students on **Communication Based Signaling in Metro Rail** by Sri Pankaj Dhakate, Jt. General Manager, Head-Signaling and AFC, L&T Metro Rail Ltd., Hyderabad on 10-9-2016. Students were introduced with the knowledge of Signaling Systems existing in metro rail. The faculty attended the programme were Dr. Y. Padma Sai, Dr. V. Padmaja, Dr. S Rajendra Prasad, Prof. G. Radha Krishna, Prof. N. Dhanalakshmi and many more.

KARNATAKA

- **JSS Polytechnic for Women, Mysore** organised the lectures on **LINUX** by Sri Harish, Subject Matter Expert, Project Command Controller, IBM, Bangalore on 24-9-16; **Soft Skills** by Smt. Queeny, Master Trainer, Srushti Training Solutions, Mysore on 26-9-16 and **Internet of Things** by Sri S. Srinath, Associate Professor, Dept. of CS, SJCE, Mysore on 27-9-2016.

MAHARASHTRA & GOA

- **Sanjeevan Engineering & Technology Institute, Panhala** organised ISTE sponsored one week National Level Workshop on **Emerging Trends in Cloud Computing** from 18th to 22nd July, 2016. The resource person was Mr. Ashok Ghatage, Earth Logic Ware Technologies, Kolhapur



Dignitaries on the dais during the inauguration of the workshop.

- **Government Polytechnic, Arvi, Dist. Wardha** organised ISTE approved training programme on **Enhancement of Professional Skills for Work Study and Personal Development of Technical Teachers** on 2-6 August, 2016. The programme was inaugurated by Dr. A.A. Gulhane, Principal Government Polytechnic, Murtuzapur. Prof. R.K. Parghane was the Coordinator of the programme.
- **Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur** organised one week ISTE approved SF-STTP from 28th to 2nd July, 2016. Dr. M.V. Aware, Professor, VNIT, Nagpur inaugurated the programme. The resource personnel for sessions were Dr. Jayant Giri, YCCE, Nagpur; Mr. Prashant Sengru, General Manager, Indorama Synthetics Ltd., Nagpur; Dr. G.K. Awari, Principal, TGPCET, Nagpur.



Dignitaries on the dais during the inauguration of SF-STTP.

RAJASTHAN

- **Jaipur Engineering College, Kukas, Jaipur** organised **Blood Donation Camp** on the occasion of Engineers' Day celebration in collaboration with Blood Bank SMS and Santokba Durlabhji Memorial Hospital and Lions Club Emerald Jaipur on 15-9-2016. The coordinators of the programme were Mr. Anil Agrawal and Dr. Naresh Chandnani. Various technical event viz. model exhibition, poster making competition were also organised on this occasion.



Blood Donation Camp at a glance.

TAMIL NADU & PONDICHERRY

- **IFET College of Engineering, Villupuram** organised National Level Technical Sumposia **iTECH FEST'16** on 23-24 September, 2016. The Chief Guest of the function was Ms. B.R. Preethi, General Manager-HR, TVS Logistics Services Ltd., Chennai and released the E-souvenir.

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- **A.V.C. College of Engineering, Mayiladuthurai** celebrated 49th Engineer's Day on the theme **Skill Development for Young Engineers to Reform the Core Sector : Vision 2025** on 15-9-2016. Dr. S. Balasubramanian, Principal welcomed the gathering and mentioned the emergence and need of Engineers Day celebration. Thiru M. Rajasekaran, Member, Board of Management, AVC Educational Institutions presided over the function and honoured the Chief Guest Er. Balachandran, Senior Manager (Manufacturing), Crude Distillation Unit, CPCL, Cauvery Basin Refinery, Nagapattinam. Dr. J. Swaminathan, ISTE staff coordinator proposed the vote of thanks.



Chief Guest Er. Balachandran delivering the inaugural address.

- **St. Joseph's College of Engineering, Chennai** organised two days National Workshop on **Biofuels and Bioenergy** on 2nd & 3rd September, 2016. This workshop was sponsored by Dept. of Biotechnology, Ministry of Science and Technology, Government of India. Dr. S. Renganathan, Professor, Centre for Biotechnology, A.C. Technology, Anna University, Chennai inaugurated the workshop and delivered lecture on fourth generation biofuels.



The Chief Guest addressing the participants.

- **Arunai Engineering College, Tiruvannamalai** organised National Level Technical Symposium **POINTERS 2K16, Data Science All #AEC** on September 1-2, 2016



Dignitaries on the dais during the National Level Technical Symposium.

Engineering Association Meeting at Sakhar Sankul, Shivajinagar, Pune on 18.09.2016



Prof. Alok Prakash Mittal, Member Secretary, AICTE is felicitated by Hon. President Shri. Balasaheb Wagh with Prof. Pratapsinh K. Desai, Dr.P.P.Vitkar and Dr. R.P.Joshi.



Prof. Alok Prakash Mittal, Member Secretary, AICTE guiding the Engineering Association Members at Pune.



Prof. Pratapsinh K. Desai, President, ISTE addressing the Engineering Association Meeting at Pune.



Engineering Association Members present for Meeting at a glance.

TECHNOLOGY FOR RURAL DEVELOPMENT

It is a matter of great pleasure for me that I was invited to deliver a key note address at the inauguration function of the 12th ISTE State Annual Students' Convention 2015 organized by ISTE Gujarat Section and hosted by Vadodara Institute of Engineering, Kotambi Dist. Vadodara on 10th October, 2015. The theme of the convention was 'Technology for Rural Development to accomplish vision India 2020'. The gist of the address is briefly presented.

Preamble

As we know engineering pertains to the basic theory and principles whereas the technology is industrial arts and their applications. Engineering is theory, the technology is action and manifestation.

Development of technologies has transformed our life and living. It has transformed the equations of time and space. Nevertheless the fact still remains that the benefit of technology has not percolated as much as it should, to the lowermost rural strata of the country. It is therefore most appropriate that the convention has selected the topic of technology for rural development.

Need for Vision

The society looks forward to prosperity. Prosperity and good life will be possible only if the nation generates a vision for action. Vision drives progress.

We must visualize the needs of the rural population and the society. We know that our rural area needs good road, transport and air connectivity, schools and places of higher education nearby, hospitals and advanced health care centers, clean environment and adequate water supply in addition to maintenance of cleanliness all round and clean power supply to villages and villagers. There are also physiological needs, safety needs, social needs and esteem needs for dignified living. Integration of education, occupation and health care can help a long way.

There is a need of bringing the facilities which the urban area enjoys easily to our widely spread and segregated rural regions. This is now known as the rural economic concept.

Types of technologies

There are three types of technologies prevalent in the world.

(1) Technology of destruction (2) Time saving and technology of quick communication and (3) Technology of production.

War, weapon and bomb technology is technology of destruction. It is neither desirable nor can be acceptable as it does more damage than good. It can work against growth, development and the humanity.

Time saving technology should be encouraged and appreciated. It helps growth and development in a big way effectively. This technology need be used for making digital india. You get at your home at the tip of fingers for which otherwise you have to move from place to place. It is this what we need to make technology available to rural mass and development.

Technology of production has developed tremendously. We need to adopt appropriate technology to meet with the local

conditions. Mass production may be suitable for certain products particularly where labour availability is scanty but for Indian rural situation, production by mass is the necessity of the day as it may help to tackle the problem of unemployment.

Environment Safety

Climate change mitigation is the prominent challenge before the world. Carbon emission nuisance mainly the creation by the developed countries covers the entire globe of the earth may be it urban or rural environment. What is needed is to plan and to enhance our energy requirement by updating our efforts to utilize the alternative resources like the nuclear, wind and the solar energy. The wind and solar energy should be availed to our rural regions. It is also said that in addition to look into the environment hazards, we have to attend to environment safety.

Green Engineering

Green Engineering and the use of appropriate technology are inter-related. The productivity improvement needs coordination between economy and ecological sustainability. The land, Water, Energy and nutrient supply are basic parameters pertaining to the green engineering.

Land needs continuous soil health monitoring. It helps in selection of the type of crop leading to sustainable agricultural output. Green Engineering needs promotion of saving of water, efficient water delivery and equitable distribution of surface and ground water resources. Soils are not only thirsty but also hungry. Proper inputs are needed for output.

Market purchased harmful chemical inputs should not be encouraged but use of appropriate technology to produce composed and humus manure must be availed to improve the soil structure and its sustainability. We have to establish harmony between the technology and the nature.

National Water Grid

In order to solve the problems of water scarcity, flood control and drought control, linking multi-rivers can be of help. Networking of major rivers can bring potential revolution of agricultural output, power generation and has employment potential. India has developed an effective technology of using satellites for mapping of water resources and details of river flow aspects, capability to use nuclear energy for large tunneling in mountains to lead the river flow and technological strength in mechanical, civil and communication engineering and management. National water grid will enhance our food grain production, water availability for irrigation and power generation and transmission. Needless to mention that our rural India at large will accrue essential benefits when technology in integrated efforts is used for the rural development.

The message is that our technical education should come out with technical manpower consisting of post-graduates, graduates, diploma holders and technicians who should work together to become perfect instrument to lead technology for rural development and growth.

Dr. S. V. Vaishnav

Honorary ISTE Fellow and Former Principal,
A D Patel Institute of Technology,
New Vallabh Vidyanagar, Gujarat

NEWS FROM ISTE STUDENT CHAPTERS

ANDHRA PRADESH

- **Marri Laxman Reddy Institute of Technology, Dundigal, Hyderabad** celebrated **Engineer's Day** on 14th & 16th September, 2016. The event conducted was poster presentation, quiz, paper presentation, robotic workshop, cross word and circuit debugging.



Prof. V. Rama Rao, NEC Member addressing the students.

- **BVRIT Hyderabad College of Engineering for Women, Hyderabad** organised project model exhibition **PROTSAHA** for school children of 6th to 10th Class on 8-9-2016. The chapter also celebrated the **Engineer's Day** on 15-9-2016. A programme on **The Circuiter** was conducted for students where different engineering college students participated in the event.



Dignitaries during the Engineer's Day Celebration



Dignitaries during the Model Exhibition.

MAHARASHTRA & GOA

- **P.R. Pote 9Patil Education & Welfare Trust's Group of Institutions, College of Engineering and Management, Amravati** organised one day **Personality Development Programme** on 29-9-2016. Prof. S.P. Bhonge, Faculty Advisor, ISTE Chapter delivered the welcome address.

Mr. Sudhi S. More, Soft Skill Trainer was the Chief Guest for the programme and emphasised that personality development is development of organised pattern of behaviours and attitudes. Prof. S.D. Wakde, Principal felicitated the Chief Guest and presided over the function.



Dignitaries on the dais during the inauguration of the programme.

TELANGANA

- **Jayamukhi Institute of Technological Sciences, Warangal** organised an Annual National Technical Symposium **TECHNOJITS-16** on 23-24 September, 2016. The purpose of symposium is to enhance employability skills and all around personality of the students. The symposium was inaugurated by the chief guest Dr. V. Rama Rao, ISTE National Executive Council Member, Telangana Section. About 600 students from various colleges participated and presented research papers on various topics of current issues.



Inaugural speech by the Chief Guest Dr. V. Rama Rao.



Technojits2016 team with Chief Guest.

NEWS FROM ISTE STUDENT CHAPTERS

TAMIL NADU & PONDICHERRY

- **Government College of Engineering, Tirunelveli** organised inauguration of ISTE Students Chapter activities on 9-9-2016 for the benefit of students. Dr. S. Basil Gnanappa, Former Executive Secretary, ISTE delivered the inaugural address and a brief notes on the benefits of ISTE Student Membership, activities to be organised for the benefit of students through ISTE Students Chapter and the incentives of ISTE Students Chapter.



Dr. S. Basil Gnanappa, former Executive Secretary, ISTE

- **Sri Sai Ram Engineering College, Chennai** organised an Orientation Programme on **Ethical Values for Career Growth** on 9-9-2016. Dr. K. Samuel Johnson delivered the keynote address during the programme.
- **Sri Ramakrishna Engineering College, Chennai** celebrated the birth anniversary of Shri Maulana Abdul Kalam Azad as **National Education Day** on 11-9-2016 by conducting an essay writing competition for the first year students. The objective of celebrating National Education Day is to strengthen and to raise the quality of education to greater heights. The Chapter also organised two days workshop on **NextGen Imaging** on 30-9-2016. The resource person was Mr. Anandaraj Thangappan, DMTS, Sr. Programme Manager, Wipro Technologies Ltd., Bengaluru.
- **Kongu Nadu College of Engineering and Technology, Trichy** organised one day National Level Workshop on **Signal and Image Processing using MATLAB** on 23-9-2016. The function was presided over the Dr. R. Asokan, Principal, KNCET.



Dignitaries distributing the certificate to the participants.

- **Mookambigai College of Engineering, Kalamavur, Pudikottai Dist.** celebrated the Teachers' Day on 2-9-2016. Sri D. Ravi, Chief Executive of Mookambigai College of Engineering and Srinivasa Polytechnic was the Chief Guest on this occasion.



Dr. S. Basil Gnanappa, former Executive Secretary, ISTE

- **M.P. Nachimuthu M. Jaganathan Engineering College, Chennai** organised one day orientation programme on **Strategy of Career & Personality Development** on 23-9-2016. The Correspondent "Bharat Vidya Shiromani" Dr. Vasantha Sudhanandhen presided over the function. The Chief Guest for the function was Mr. S. Ramamoorthy, Secretary, EEDISSIA, Erode. Dr. S. Shanmugasundaram, Principal offered felicitation.

WEST BENGAL

- **Technique Polytechnic Institute, Hoogly** organised workshop on **Anti Addiction** for the newly admitted first year students. The Students Chapter also organised one day Quiz Competition on 3-9-2016



Anti Addiction workshop at a glance.



The student winner of SRMC awarded during the competition.

NEWS FROM ISTE SECTIONS

ORISSA SECTION

- 19th State Annual Student Convention of ISTE Orissa Section was held on 24th & 25th September, 2016 at Silicon Institute of Technology, Bhubaneswar. The function was inaugurated by the Chief Guest Prof. R.V. Raja Kumar, Director of IIT, Bhubaneswar. The other guests present during the function were Prof. R.K. Patnaik, Director, SIT; Prof. S.M. Ali, Chairman, ISTE Odisha Section and Prof. K.K. Rout, Secretary, ISTE Odisha Section. The events like quiz, puzzle, c-coding, paper presentation were also organised for students during the convention.



The Chief Guest Prof. R.V. Raja Kumar delivering the address.



Dr. S.M. Ali, Chairman, ISTE Odisha Section addressing the participants.

TELANGANA SECTION

- ISTE Telangana Section Managing Committee meeting was held on 17-8-2016 at JNTU, Hyderabad. Prof. T. Kishen Kumar Reddy, Chairman ISTE Telangana Section has appointed as Director General of Petroleum University, Gujarat and therefore not able to serve the Section from Hyderabad. Prof. A. Venugopal Reddy, Vice Chancellor, JNTU Hyderabad has taken charge as Chairman, ISTE Telangana Section.



Felicitation to Prof. T. Kishen Kumar Reddy, former Chairman, ISTE Telangana Section by the members.



Felicitation to Prof. A. Venugopal Reddy the new Chairman of ISTE Telangana Section by the members.

WEST BENGAL SECTION

- The Annual Faculty Convention of ISTE West Bengal Section was conducted at **North Calcutta Polytechnic Kolkatta** jointly by The Council of Engineering & Technology (India), Kolkatta & ISTE on 20-9-2016. The theme of the convention was **Make in India : Challenges & Opportunities**. The welcome address was given by Prof. Sumanta Das, Secretary, ISTE West Bengal Section. The eminent dignitaries present during the convention was Prof.(Dr.) N.R. Banerjee, Chairman, ISTE West Bengal Section & former VC, BESU, Shibpur, Howrah; Prof. R.C. Bhattacharya, Former Vice Chairman, WBSC of Technical Education; Prof. M. Bhattacharya, Former HOD, Mech.Engg.Dept., Jadavpur University; Prof. Goutam Bandyopadhyay, Member, ISTE NEC and Principal North Calcutta Polytechnic and from the professional field the members were Mr. Pradipa Bose, General Manager, Videocon Industries Ltd. and Dr. K.C. Shahoo, Chairman, CET (I). The vote of thanks was delivered by Er. Debmallya Chatterjee, Secretary General, CET (I).



Dignitaries on the dais during the inauguration of State Convention.

FORTHCOMING EVENTS

- 21st State Annual Faculty Convention of ISTE Gujarat Section and National Conference on **Emerging Trends in Engineering**, 27th December, 2016 at Tolani Foundation Gandhidham Polytechnic, Adipur (Kutch). For details contact : **Prof. R.A. Maheshwari**. Email : rameshmaheshwari98@gmail.com; Mobile : 09825293080