

ANURAG GROUP OF INSTITUTIONS
(Autonomous)
DEPARTMENT OF CHEMICAL ENGINEERING
ACADEMIC ACTIVITIES FOR THE YEAR 2017-18

FDP/ Conference/Seminar

S.NO	Name of the topic	Date and venue
1.	One Week FDP on Application of Aspen Plus in Process Industries	13 th -18 th Nov 2017, AGI
2.	National level Technical fest – RASAYANIKA 2K17	15 th -16 th September 2017, AGI
3.	National Conference On Recent Advances and Challenges in Chemical Engineering and Applied Chemistry	28 th -29 th March 2018, AGI
4.	Aagama 2K18-A National Technical Fest	16 th -17 th March 2018, AGI

Industrial Visits

S.No	Name of the industry	Date
1.	Pratishtha Industries	18 th August 2017
2.	NFC- Hyderabad.	24 th July 2017
3.	sewage water treatment plant, Nagole, Hyderabad	27 th Oct 2017
4.	CMET -HYD	21 st Dec 2017
5.	Clair Industries -HYD	15 th Feb 2018

Guest Lectures

S.NO	Name of person with designation	Name of the topic	Date and venue
1.	Mr. Milind Murumkar, Advisor, AFR VICAT Group,	Sustainable Solutions for the Management of Wastes	July 15 th 2017 , D-Block Auditorium
2.	Dr.Murali Banavoth, Assistant Professor, Department of Chemical Sciences,	Solar Energy Cells and Advanced Solar Energy Materials	August 19 th 2017, A-Block Seminar Hall

	University of Hyderabad		
3.	Dr. Ramesh Babu Adusumalli, Associate Professor, BITS Pilani, Hyderabad Campus	Significance of Cellulose and Carbon Fiber Technology	September 15th 2017, B-Block Auditorium
4.	Swathi, Yobilishetty, Manager AFR, Bharathi Cement Corporation Private Limited.	Sustainability in Cement Industry	September 15th 2017, B-Block Auditorium
5.	Prof. Sarma. V. Pasupati Chair of Energy Engineering Program, Pennsylvani a State University, USA and Director of online Education in the John and Willie Leane.	Research Needs in Advanced solid fuel utilization	December 15th 2017, D-Block Auditorium
6.	Dr. Y. V. Swamy Chief Scientist & Head, BEES Division, CSIR-IICT Dr. D. P. Rao Managing Partner, Process Intensification consultants –HYD	Chemical Engineering And Technology : Advancement And Associated Safety Aspects	January 24th 2018, Auditorium, NFC, Hyderabad
7.	Dr. Keshav Rao .V Former Senior Vice President Oil and Gas Business	Petroleum Industry : Emerging Trends And Opportunites For Engineers	Feb 16th 2018, D-Block Auditorium
8.	Dr. S. Sridhar Principal Scientist CSIR-IICT HYD	Promoting Industrial Development & Social Welfare Through Innovative Membrane Technology	Feb 22nd 2018, D-Block Auditorium
9.	Dr. Karthik Chetan, Professor, BITS Pilani, Hyderabad Campus with a topic of	“Recent advances in material science and engineering chemistry”.	28th March 2018, A-103

Workshop

1.	G. Vijay Kumar Head of Process Engineering Group HYD	Applications Of Theory To Process Industries	Feb 23rd-24th, 2018, D-Block Seminar Hall
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Department of Chemical Engineering organized a guest lecture on the topic *Sustainable Solutions for the Management of Wastes* delivered by Mr. Milind Murumkar, **Advisor, AFR VICAT Group**, on **July 15th 2017** .

The lecture by Mr. Murumkar provided technical insights to the students into the Cement Industry and its importance in eliminating wastes. Various case studies were discussed by the speaker which provided greater understanding about the dynamics of process principles, industry procedures and composition of wastes. The waste treatment technology discussed by the speaker can be implemented in treating in almost all types of solid wastes. Bringing this technology to use in treating liquid and gaseous wastes can also be thought of by performing research in this area.

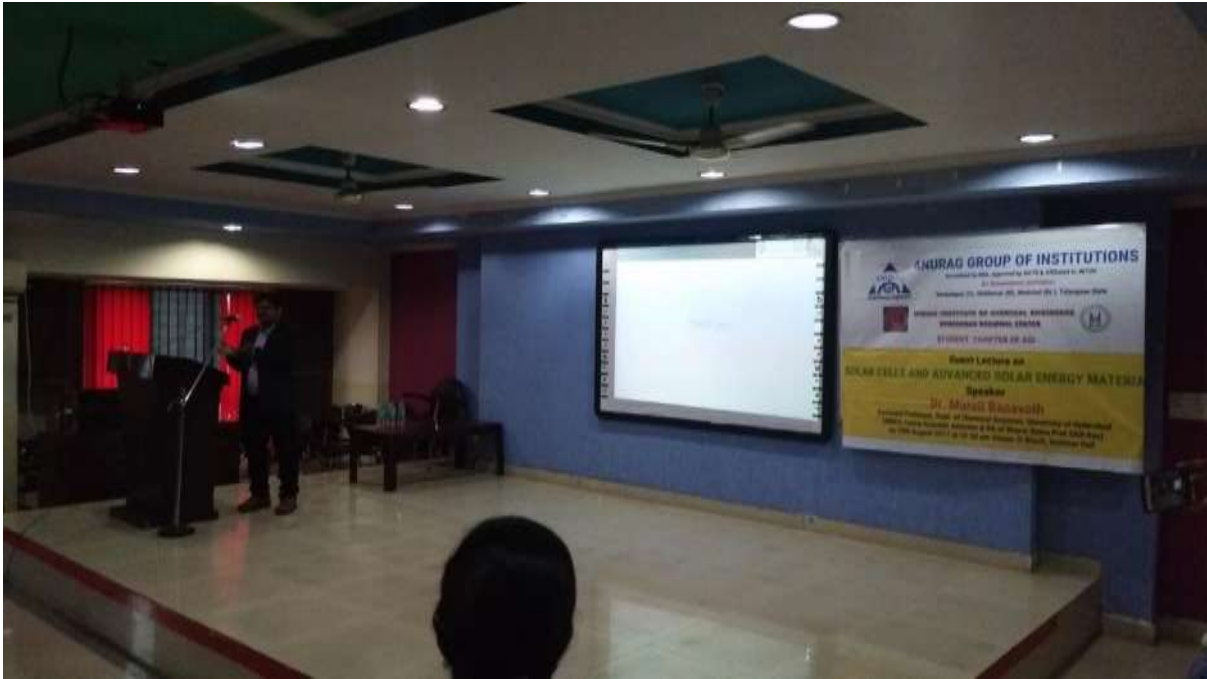




Department of Chemical Engineering organized a guest lecture by **Dr. Murali Banavoth**, Assistant Professor, Department of Chemical Sciences, University of Hyderabad on the topic **Solar Energy Cells and Advanced Solar Energy Materials** on 19th August 2017.

The speaker discussed various types of Solar Energy Cells viz. Inorganic Solar Cells, Organic Solar Cells and Hybrid Solar Cells. Various new materials that are being studied in various parts of the world was also discussed. Special attention was given to Perovskite Crystals manufacture and usage in solar energy production .





- ✚ Department of Chemical Engineering organized an **Industrial visit to NFC, Hyderabad** for the students of III year chemical on 24th July 2017. They visited centres relating to Zirconium fabrication plant, Uranium oxide plant, Zirconium oxide plant. Nuclear fuel complex is a cell which fabricates the nuclear fuel. On the whole we have 21 nuclear reactors in India. It supplies fuel to all the reactors. Uranium is the basic raw material required to produce nuclear energy. In India Uranium is available in two forms and the content of Uranium in ore is so less.
Example: 1 kg of natural Uranium ore consisting of 650 milligrams uranium content and remaining are impurities and isotopes of Uranium.



- ✚ Department of Chemical Engineering organized an **Industrial visit to Prathista Industries, Hyderabad** for the students of III year chemical on 18th August 2017. **PRATHISTA INDUSTRIES LIMITED** is a 20 year old, India based Multinational Company. They are into the business of Manufacturing and Marketing Eco friendly Bio technology products viz., Organic Agri inputs, Bulk drugs, Bio fertilizers, Botanical crop protectors and Animal Feed Supplements and Food. They are the first Company to Commercialize ICAR innovations to produce "***Make in India***" products for agricultural segment which includes Nano fertilizers & Nano micro nutrients under INM program.



✦ The Department of Chemical Engineering of Anurag Group of Institutions (Autonomous), Ghatkesar, in collaboration with Indian Institute of Chemical Engineers (IIChE) Hyderabad chapter held a two day National Level technical fest Rasayanika 2K17, on 15th and 16th September. The event was themed “Sustainable solutions towards a Greener Economy”.

Rasayanika 2K17 was presided by Dr. M. Mukunda Vani, Head of Chemical Engineering Department, Anurag Group of Institutions and Mrs. M. Shireesha, Assistant Professor, was the convenor. Mrs. Sheela, Chairperson-IICHE, Hyderabad Regional Centre and Dy. Chief Executive, Nuclear Fuel Complex was the Chief Guest. Mrs. C. SharadaPrabhakar, Scientist G, Deputy Director, Advanced Composite Centre, DRDO, Hyderabad was the Guest of Honour and Mr. Milind Murumkar, Advisor, AFR, Bharathi Cement Private Limited was special guest at the event. Mr. Gopal P. Puranik, Senior Consultant/Advisor at Stratview Research and Biomax Life Sciences was chief guest for concluding session. The guests shared technical experiences in their talks and encouraged students to actively participate in research activities.

Student participants from across the country, mostly from the states of Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra and Goa attended the event to showcase their technical skills and knowledge with paper and poster presentations, model making, compound preparation etc. A number of non-technical events like spell bee, treasure hunt, cricket quiz, tambola and entertaining performances like dancing, singing and live plays too, were part of the fest.

The fest was concluded with certificate and prize distribution to the winners of the events and also, a cultural event where students enjoyed the time with singing, dancing and other fun activities.



Guest Lecture was conducted by the Dept. of Chemical Engineering on 15th of Sep 2017. The speaker is Swathi, Yobilishetty, Manager AFR, Bharathi Cement Corporation Private Limited.

Topic: Sustainability in Cement Industry

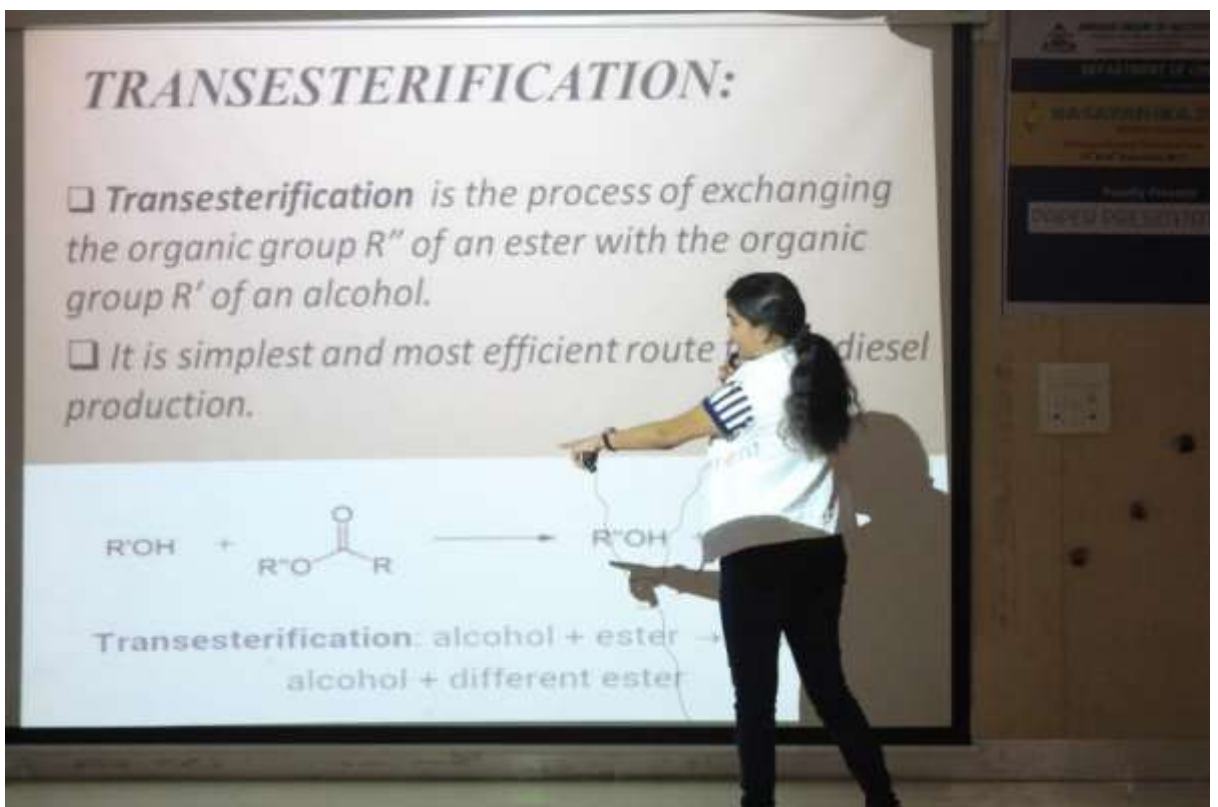
Various case studies were discussed by the speaker which provided greater understanding about the dynamics of process principles, industry procedures and composition of wastes. The waste treatment technology discussed by the speaker can be implemented in treating almost all types of solid wastes. Bringing this technology to use in treating liquid and gaseous wastes can also be thought of by performing research in this area.



Topic: Significance of Cellulose and Carbon Fiber Technology: Dr. Ramesh Babu Adusumalli, Associate Professor, BITS Pilani, Hyderabad Campus provided a thorough understanding of cellulose structure, its possible applications in various fields of engineering and research. He also discussed about various carbon fibers that have been produced artificially and their applications. Carbon fibers derived from wood was discussed in detail.



Paper presentations





Poster presentations



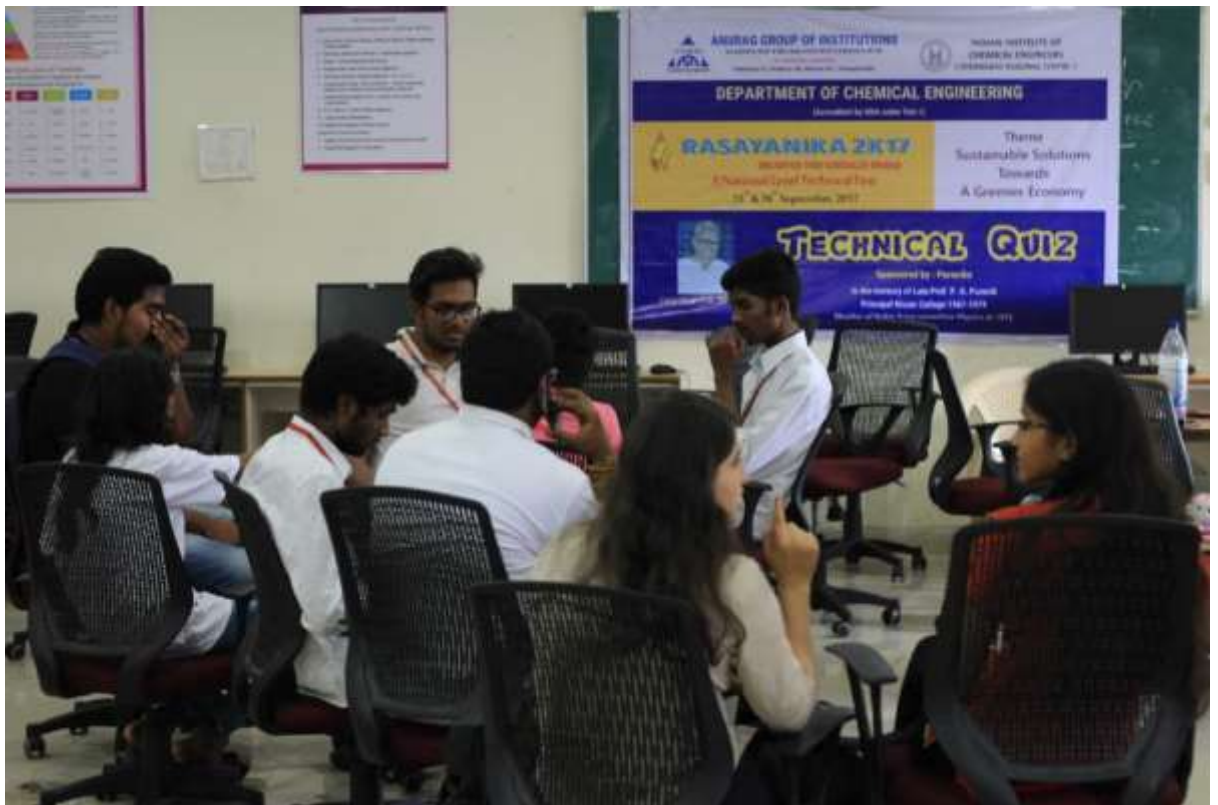
Compound preparation



Model making



Quiz



Valedictory Function: It was held on 16th Sept 2017 at 3.00pm. Mr Gopal P Puranik, Sr Consultant and advisor at Stratview Research, Former VP, Biomax Life

Sciences was the chief guest. He addressed the students and shared his experiences and also briefed about the sustainable solutions towards greener economy and distributed the prizes to the winners.



Winners



- ✚ Department of Chemical Engineering organized an **Industrial visit to sewage water treatment plant, Hyderabad** for the students of II year chemical on 27th October 2017. In this visit, they could understand how Sewage water treatment is done in the plant. The treatment is done in series of stages step wise. They demonstrated i.e in step one filtration and sedimentation followed by biological degradation and separation.



GUEST LECTURE on “Research Needs in Advanced Solid Fuel Utilization”

DATE: 15th December, 2017, Friday

Resource Person:

Prof.Sarma.V. Pasupati

Chair of the Energy Engineering Program, and Director of Online Education in the John and Willie Leone Family. Department of Energy and Mineral Engineering at Penn State



Key Points/Highlights:

□ This lecture highlighted the importance of the current energy crisis and pollutant emissions and also the modern technologies which could be availed to save energy.

- The current global energy situation in terms of solid fuels and comparison of the countries based on their consumption of energy and the development of that country was elaborately explained.
- CO₂ has reached very alarming rates but not all is lost as methods to use this CO₂ without simply releasing it to the atmosphere are being developed.
- Although new green energy technologies have been developed, the materials that go into making solar panels, windmills etc. have to be imported from various other countries and some require rare Earth metals which are scarce and will be depleted soon.
- Students were made explore the research areas in this field, look out for means to meet the current needs of the Process Industry to control the Excessive production of Carbon dioxide.

INDUSTRIAL VISIT TO "CENTRE FOR MATERIALS FOR ELECTRONICS TECHNOLOGY(C-MET)".

Date: 21st December, 2017, Thursday.

Resource Person(s):

Dr. R. RATHEESH, Director, C-MET.

Mr. ARBIND KUMAR, Scientist F, C-MET.



Highlights of the Visit:

- Students were educated on how Huge Plants for the Production of Hafnium have been functioning.

- Students were not only enthusiastic to see the equipment's functioning, but they were also eager to hear that there are several exciting opportunities for them in the field of Material Sciences.
- Indigenous development of procedure for extraction of precious materials such as Ag, Au, Cu, Pt etc from electronic waste were unravelled.
- Chromatographic techniques which are quite useful for the analysis of substances have been thoroughly explained by the scientists there.
- Students returned from the plant with an insight into the working of the Plant and its Operations.

A SEMINAR CONDUCTED ON “CHEMICAL ENGINEERING AND TECHNOLOGY: ADVANCEMENTS AND ASSOCIATED SAFETY ASPECTS”

DATE: 24TH JANUARY, 2018, WEDNESDAY.

Venue: Nuclear Fuel Complex ON BEHALF OF IChE – HRC.

Attended By: B.TECH (Chemical Engineering II Year Students).

Resource Person(s):

- Dr.Y.V.Swamy, Chief Scientist & Head, BEES Division, CSIR-IICT.
- Dr.D.P.Rao, Managing Partner, Process Intensification Consultants, Hyderabad
- Mr. P. V. Vidyadhara Rao, ESD Control Systems.



HIGHLIGHTS OF THE SEMINAR:

- The seminar emphasized upon the role of Chemical Engineers to control the greenhouse emissions and explained its impact on the surface ozone formation and the climate.
- Thought provoking aspects such as the Incorporation of Process Intensification, 3-D printing, Internet of Things, Artificial Intelligence in the Process Industry were elucidated
- Significance of the Safety management and the fire and explosion hazards due to static electricity were demonstrated.
- Inherently safer Chemical Process Designs had been illustrated.

An Industrial Visit to the Clair Industry

Date: 15th OF February' 18, Thursday.

Resource Person(s):

Dr. K. Sainath

Managing Director,

Clair Industry.



Highlights of the Visit:

- Air Pollution Control equipment like Electrostatic Precipitators, Reverse Air Bag Houses, Pulse Jet Bag Filters, Industrial Fans, Gas Conditioning Systems to cement, steel, power and other process industries were fabricated in the Clair Industry.
- In-depth understanding of the process requirements were explained to the students.
- Construction and erection expertise of the equipments and auxiliaries to achieve the desired performance from the equipments have been demonstrated to the students.

A GUEST LECTURE ON “PETROLEUM INDUSTRY EMERGENT TRENDS AND OPPORTUNITIES FOR NEW ENGINEERS”

Date: 16TH OF February’ 18, Friday.

Resource Person(s):

Dr. V.K. Rao,

Former Director General of Hydrocarbons in Ministry of Petroleum and Natural Gas,
Government of India





Highlights of the Guest Lecture:

- Our expert consultant in this segment have analysed the current context of the oil industry and the main factors that influence it, surveying the main trends that should most strongly direct the movement of the sector.
- The various uncertainties that may impact this market were also discussed.
- In contrast to the increased energy demand due to population and urbanization growth, a trend of deceleration of this same demand appears due to technological advances that optimize energy use.

A GUEST LECTURE ON “PROMOTING INDUSTRIAL DEVELOPMENT AND SOCIETAL WELFARE THROUGH INNOVATIVE MEMBRANE TECHNOLOGY”

Date: 22nd OF February’ 18, Friday.

Resource Person(s):

**Dr. Sridhar,
Principal Scientist and Project Leader,
Membrane Separations Group,
Chemical Engineering Division, CSIR IICT**



Highlights of the Lecture:

- Membrane separations in water treatment were elaborately explained in this lecture.
- Reverse osmosis, the main treatment used for the treatment of water for drinking were setup in many villages by our expert consultant.
- Fuel cells for the functioning of membranes demonstrated.
- Free water supply using membrane technology in and near iict were set up for people during hot summers.

Workshop on “Application of Theory to Process Industries for Engineers”

Date : 23-02-2018 to 24-03-2018

Resource Person: Mr. G. Vijay Kumar, Process Engineers Group





- Students were exposed to the how chemical engineering is one of the most important yet most under rated engineering stream offered. They were given comparisons of the annual salaries which are offered to Chemical Engineers as compared to other engineering fields and we rank far ahead of them.
- We were then given examples of the job requirements which an industry desires from its candidates and how many of the job applications requested for the ability to draw and understand PFDs and P & IDs as well.
- They were given the meanings of new terminology such as line sizing, piping, process streams, PSVs etc. They were also shown examples of PFDs and P & IDs and their complexity but also their huge importance for an industry.
- They learned about the phases of a project and how different equipment is cleared for usage in the industry and the process which takes place for the order of equipment
- The different types of pumps and their various differences and for which types of liquids each pump is more useful for were thoroughly explained.
- The construction and fitting and range of optimum performance were also explained.
- The complexity that they felt when seeing a PFD for the first time slowly faded as the workshop went on and by the end they had drawn their own as well.

process optimization for adhesive/binder, food/gels, 3-D printing, microencapsulation and tissue engineering applications

Real-time investigation of processes such as, polymerization, protein denaturation, liquid-liquid phase separation, glass formation, annealing, physical aging and corresponding secondary relaxation processes by using dielectrics, calorimetry, ultrasonics and thermal conductivity techniques were elaborately explained.

In session-II-presentations started by participants according to schedule



DAY II Presentation



Anurag Group of Institutions (**formerly C.V.S.R COLLEGE OF ENGINEERING**) has organized a two day national level technical fest- "**AAGAMA 2K18**" on 16th and 17th of March 2018 of which the Department of Chemical Engineering is also a part. The Technical fest aims at developing the knowledge and skills of the student community and their culture. It provides a platform for every student to interact and exchange their ideas on the present Technology trends.

Student participants from across the country attended the event to showcase their technical skills and knowledge with paper and poster presentations, Project Expo, compound preparation etc. A number of non-technical events like spell bee, treasure hunt, cricket quiz, and entertaining performances like dancing, singing and live plays too, were part of the fest.

The fest was concluded with certificate and prize distribution to the winners of the events

Project Expo





