

Newsletter



SCHEME

Society Of Chemical
Engineers



Team Literary and Publications is pleased to issue the first newsletter of the chemical engineering department. In this issue, we have endeavored to give our readers a concise, yet comprehensive view of events, internships, and projects of the year 2016. Thanks to all individuals who contributed to this edition by sending their piece of writing. We wish all the readers of this publication an enjoyable time of reading.

Tooba Ahmed
Editor in Chief.



Scheme since its inception has actively been engaged in promoting educational activities including arranging seminars, project exhibitions and publishing magazine which comprise technical information for the students. This Society is now preparing to publish a newsletter which will contain information about activities carried out in the department during the year. This action of Scheme is commendable as it will help compiling all information which will be useful for the students. Students of Chemical Engineering Department have no doubt been doing excellent in their education but along with that they have also been involved in co-curricular activities which will help them to improve their soft skills. I wish all the best to the team of Scheme and hope that they will keep on doing these efforts for the promotion of co-curricular activities.

Prof. Dr. Muhammad Tufail
Dean, CPE Faculty.



It is a great pride for me to announce that the Department of Chemical Engineering is going to publish its first ever newsletter. Students of this department deserve appreciations as they have put tremendous efforts to bring something new and remarkable. I acknowledge their teamwork and wish them all the luck for their future endeavors.

Prof. Dr. Inayat Ullah Memon
Chairman, Chemical Engineering
Department.



Students of chemical engineering department are publishing their first edition of "THE NEWS LETTER" from the platform of student's society "SCHEME". I really appreciate the newsletter team for this brilliant work and I am sure you will continue and manage your academic activities and co-curricular activities. Good luck team "THE NEWS LETTER" and team "SCHEME".

Ms. Alia Ahrar
Lecturer Chemical Engineering
Department.

The students of final year batch (2012-2013) are working under the supervision of respected faculty on a number of innovative projects which aims at utilizing the potential of these students and shaping the new dimensions of creativity.

Final Year Projects

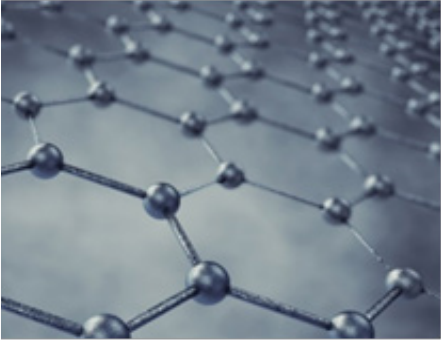
Comparative Study of Coal Water Slurry and Coal Water Slurry plus Shredded Tires

It is an innovative research based project aimed at incorporating pulverized scrap tire in conventional coal water slurry to potentially increase the calorific value and reduce the need of stabilizers. Use of scrap tires not only avoids unnecessary consumption of natural resources through alternative use of waste tires but also fulfills the ideal objective of recovering and reusing all resources without detrimental impact upon our environment.



Synthesis of Graphene from Indigenous Coal. An Alternative Non Burning Solution

The main objective of this project is to avoid the drawbacks that are associated with the combustion of coal. Another objective is to utilize this fossil fuel as much as possible before it gets depleted. Graphene is the only thinnest, 2D material which possess a vast range of versatility in its nature. It is ultra-light, 200 times stronger than steel, incredibly flexible than rubber. The applications of graphene are in the fields of energy, membranes, composites and coatings, bio-medical, sensors, electronics, etc. It would be safe to say that graphene synthesis is a disruptive technology; that could bring new products to the market and can even replace existing materials.



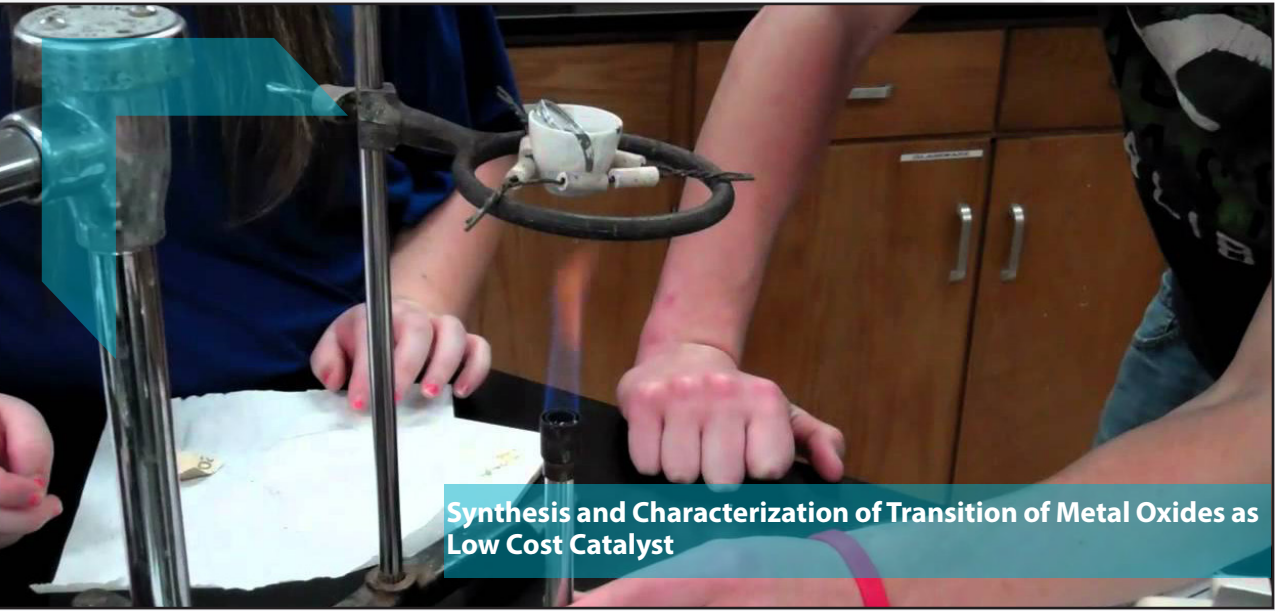
Modeling and Simulation of 100 MW Integrated Indigenous Coal Gasification Combined Cycle Power Plant

The integrated gasification combined-cycle (IGCC) process involves complete gasification of the fuel under pressure. The raw gas, produced being fairly hot, is cooled in a heat recovery steam generator (HRSG). The cooled, medium-heating-value gas is then desulfurized and burnt in the combustor of a gas turbine to produce electricity. Waste flue gas from the turbine is used to heat the water for the boiler. Steam from the boiler produces additional electricity in a steam turbine. The combined efficiency of this process is in the range of 42 to 45%. This generates very low level of air and solid pollutants.



Synthesis and Characterization of Transition of Metal Oxides as Low Cost Catalyst

This project involves synthesis of manganese dioxide catalyst focusing on achieving desired Nano-structure and morphology that would give the



highest catalytic activity. The application areas of this project includes super capacitors, glucose and cholesterol biosensors, Li-ion batteries and others. Typical route of reported synthesis was used with variations and the effect on structure was studied. This involves several tests which are yet to be done.

Dynamics Control and System Identification of Distillation Column Using Aspen Plus

Steady state simulations are being performed using Aspen Plus[®] followed by Aspen Dynamics[®] licensed software of Aspen Tech[®]. The purpose of system identification is to derive model from available input and output data of the system. The basic objective of this project is to describe the identification of a pilot scale of acetone-isopropyl alcohol distillation process and determine the transfer function for the working model.



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Event Calendar 2016



Tuesday

Jan
26

Welcome Party



WELCOME PARTY '16

It is safe to say that the most awaited event for every freshman is their Welcome party. This year's welcome party was given to the batch of 2015-16 on 26th of January 2016. The event was organized by second year students and was held at the Casamento hall located in North Nazimabad. The event started off at 6pm with a thrilling performance by the hosts, followed by a singing performance by two freshmen. The audience was introduced to a video made by second year students encapsulating the people and life in the Chemical department. The event included other bits such as stand-up comedy, an electrifying dance performance, a surprise mob dance, several solo and band performances. Dinner commenced at 10:30 pm. The event ended with the distribution of the most awaited awards of the evening that is "The performer of the night" and "The Lady and the Lord of the night". Maaz Hashmi was awarded the former title while Javeria Arshad and Sabih Mohiuddin were

awarded the latter.

PROJECT AND POSTER COMPETITION (2015 & 2016)

In 2015, SCHEME took the initiative of organizing the 1st ever Project and Poster competition on Inter Sindh level in NED University. It took place at the university's main auditorium on October 13th. Around 45 practical and model based projects were presented and a panel of judges from some of the leading industries and universities evaluated them. The idea of PNP was to provide an opportunity to students from different engineering universities to bridge the gap between academia and industry. A cash prize of Rs 50,000/- was divided between the two winning teams while the teams on 2nd and 3rd positions received a total amount of Rs 30,000/- and Rs 20,000/- respectively. Outstanding response from students and encouragement from industries led SCHEME to organize PNP-16 this October. Once again we will try to bring forth a platform where interaction between the students

and industries is provided and students are given a chance to present their efforts and market them.

BLEED GREEN! LEGACY CONTINUES!

#PAK/IND #T20CWC2016

On March 19th, for the second time in the history of NED University, SCHEME organized a live match screening of India vs. Pakistan at the fountain area, NED main auditorium. The success of the event was reflected by the spectators. Around four-hundred and fifty students attended the event. They enjoyed the whole transmission at raised sentimental level. Wickets were celebrated and runs were cherished. SCHEME holds the record of being the only society in NED to organize a live screening for two consecutive years.

Events & News

Tajdeed-e-Wafa

Tajdeed-e-wafa was a one-day event held on the 12th of August this year, organized by SCHEME.

With everyone dressed in green and white and the department strewn in crepe paper, flags and balloons, Tajdeed-e-wafa started with a cake cutting ceremony led by the chairman, senior teachers, and advisors. This was followed by the flag being taken off from the department, and students carrying it through the university - from the chemical department to the main gate, from the main gate to the visitors' gate, and then back to the department, all the while chanting rallying cries in praise of the chemical department and Pakistan.

CYBORG 1.0

Cyborg 1.0 was a gaming tournament hosted by SCHEME. The games included in the event were FIFA 16 and Counter Strike 1.6. FIFA was played on the Xbox 360, unlike Counter Strike, which was played on computers. Substantial number of teams registered for FIFA in singles and pairs. They made their way to the finals where they won a certain amount of prize money and certificates of participation. Counter Strike 1.6 was organized in the computer lab of our department in which 10 teams, each

consisting of 5 members, participated. In the end, it was the victors who had the bragging rights against their opponents. The tournament lasted three days and was a fun filled event.

ENGINEERS BEYOND ENGINEERING

Engineers Beyond Engineering was yet another session organized by SCHEME on 10th March 2016. Alumni of NEDUET Chemical Engineering Department were invited to provide insight, and share their experiences regarding the industrial world. Students learned how leadership, communication and management skills along with good academic credentials, help one to progress and adjust in today's competitive and demanding industrial sector. In essence, emphasis was laid upon the importance of both technical knowledge-based learning together with personality development

INDUSTRIAL VISIT PEPSI.

SCHEME organized an industrial visit for freshmen and sophomores on March 31st and April 1st 2016 at Pakistan Beverages Limited (Pepsi Cola Bottlers). Students were taken to S.I.T.E, Manghopir road, Karachi, where the industry is located. There they visited the packing compartment of the industry and

were also given cola-drinks to beat the heat. Professionals assisted students regarding how the machinery works and packing is done. Students were overwhelmed by the experience, and got a glimpse of their future professional environment.

Magazine(Deus Ex Chemica)-2016

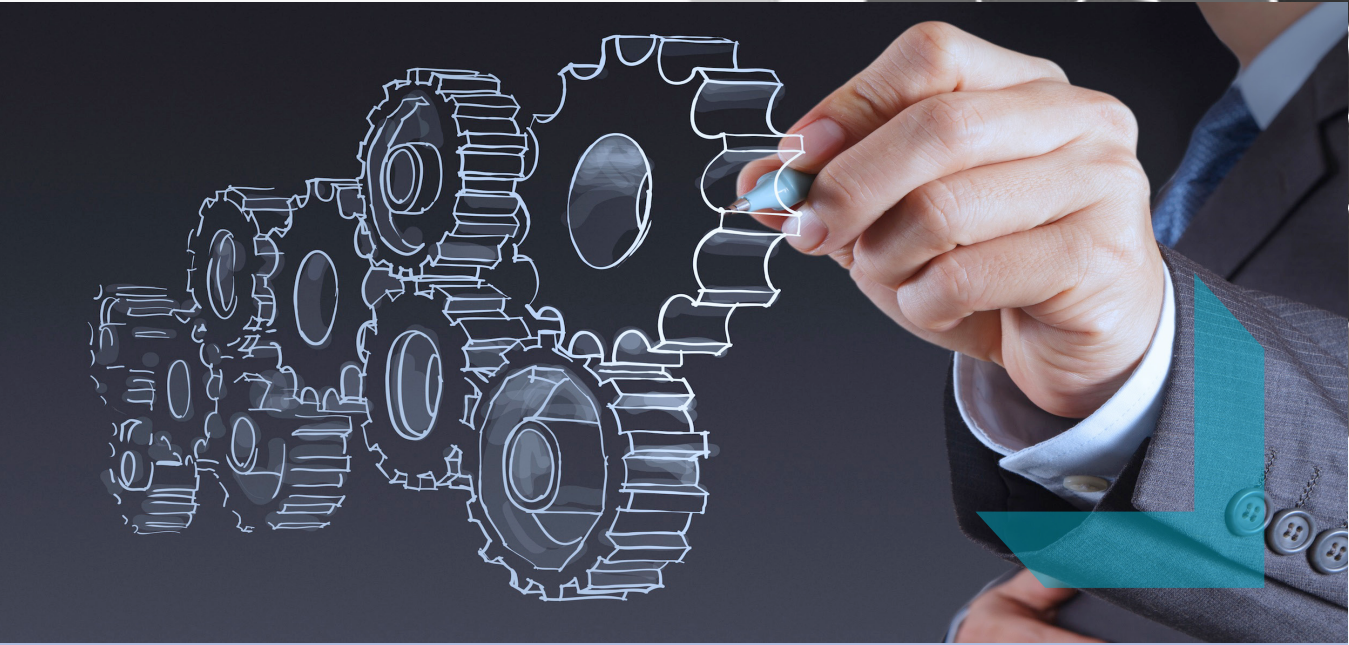
The department of chemical engineering published its first magazine in 2014. The second magazine is now in progress and will be seeing its launch soon. The magazine comprises of articles from all four batches. The purpose of the magazine is to showcase the wide range of thoughts of the students of chemical engineering. Be on the lookout for the magazine when it launches.

ENGINEERING RESEARCH IN FOCUS

SCHEME organized a productive 2-hour workshop focusing on the importance of engineering research. It was held at CIS lecture hall on 16th February 2016. The workshop was conducted by two honourable PhDs from the University of Manchester; Dr. Sohaib Zia and Dr. Muhammad Ali. With a thorough discussion on how to pursue research, the first phase of the workshop aimed at providing guidance for Final Year research based projects.



Internship Experiences



An internship is the best way to enhance one's technical skills and practise what a person learns at the University. Interning at Fauji Fertilizers, where they manufacture Ammonia, Urea and DAP fertilizer, helped me gain hands on experience of the plant. This enabled me to gain technical prowess. Interning at FFBL is a choice you will not regret since they provide a friendly working environment, thanks to dedicated professionals working there. My advice to future interns is to be proactive, take initiative and get involved with as many opportunities as you can which will help you challenge yourself.

Yusha Ul Hassan



I did my internship program at BYCO Petroleum, renowned petroleum refinery, in summer 2016. This industrial exposure has groomed all the internees in their respective departments and has given us exposure on how industrial operations work. I learned useful technical information regarding Operations and Oil Movement. The internship is the best way to get hands on experience and learn about types of equipment used in industry. Being a student of Chemical Engineering, exposure to such an environment was essential for me, and I am grateful to be a part of the BYCO family.

Syed Irtiza Ali



Ned University provided me a platform to fuse my theoretical knowledge with practical models by associating me with LOTTE CHEMICALS PAKISTAN LIMITED. Lotte chemicals is a multinational company that synthesizes PTA (pure terephthalic acid). My four-weekinternship at LCPL comprised of being exposed to reaction area, solvent & catalyst recovery units, and DCS at oxidation plant. The best feature of Lotte chemicals is its environment and its employees, who are always ready to guide you in the best possible way. I had the opportunity of working in both operations and process. In short, I had the experience of working with best chemical engineers in the best firm of Karachi.

Tooba Ahmed



The internship opportunity I had with Engro Polymer & Chemicals Limited was a great chance for learning and professional development. Unlike other internships, this one was a bit special; in that that I was assigned a project that involved designing of a simulation model of a distillation column that was economically feasible. The project, if viable, could even be commissioned for actual plant operations in the future. Given the scope of my project, I had to communicate with different interfaces, such as the projects department and the utilities department. The experience surely broadened my horizons, and I can safely say that it made me a much more realized individual with critical acumen.

Zaid Bin Ghazi

