**Phrase 1: Introduction**

Coalescence is the annual symposium of the Department of Chemical Engineering, BIT Mesra. The three-day symposium is organized in association with the Indian Institute of Chemical Engineers’ (IIChE) Students’ Chapter of BIT Mesra. The word ‘Coalescence’ in itself is a scientific phenomenon, which signifies conglomeration of separate ideas and incorporating them altogether in a nutshell for the greater good. Every year, the symposium has a particular theme and a social cause.

The theme for Coalescence 2018 was ‘Synthetic world- Plastics and people’.

**Phrase 2: Aims and Objectives**

The basic aim of Coalescence is to bridge the gap between industry and academics by providing sufficient exposure of the industrial scenarios, their problems, and their approach to solutions in a small scale. This in turn not only helps the undergraduate students to get a wide exposure to their branch of study, but also helps the administration to identify the fields where they might suggest large-scale improvements so as to cope up with the international standards of the chemical industry.

The aims of Coalescence are as follows:

* Bridge the gap between academics and industry via events, workshops and guest lectures.
* Induce some momentum among the undergraduate students of Chemical Engineering from their mundane activities in the form of events, which have both the elements of engineering as well as intuitive interaction.
* Provide proper alumni interaction so that the present students can get to know their field of work in the industry.
* Internships/vocational trainings/projects of interest.

**Phrase 3: Activities**

“An empty mind is a devil’s workshop”, is what we truly try to instil in the minds of our members as well as non-members. Keeping this in mind, we come in handy with a plethora of events to keep everyone engrossed and enlightened with the spirit of engineering technology. The platter of events come as thus:

1. ***Illuminati/Paper presentation*:** Historically, Illuminati is an enlightenment society which dates back to Bavaria. Their main aim was to promote rationalism amongst the masses. Paper presentation event was organized, to remove the fog that had accumulated over certain obscure topics, and to give an insight into what the present generation has a view on the topic. The event was judged by Dr. Gautam Sarkhel, Professor in the Department of Chemical Engineering with interests in polymer technoloy. The major topics which were presented included the following: ***Applications of self-healing polymers on automobiles, Applications of polymers as construction material and Modern methods of recycling waste polymer products.***
2. ***Industrial Design Problem***: Almost every industry has certain problems which needs a proper solution so as to enhance their profits. At present, the refinery industry is facing the complex issue of optimizing heating oil temperature range for their atmospheric distillation unit. The oil which they have been using has a very low flash point, hence it has to be ensured that the temperature doesn’t exceed the flash point. Taking this problem under consideration, the IDP had been organized, where solutions of various possible combinations have been brought forward. The event was presided over by Subhodip Banerjee, President of IIChE Students’ Chapter and GET at Reliance Industries Limited.

The problem was discussed extensively, and the various factors causing the problem were taken under consideration. An estimated design of Shell and Tube Heat Exchanger was also proposed during the event.
3. ***Chem Blaze***: Chemblaze, a popular quiz event was organized during Coalescence 2018 with an aim to test the technical awareness of participants. The event provides a massive platform where students unleash their intellectual and technical talents and prove their mettle by fighting out the toughest in the league. The 2017 edition saw enthused students from across the campus that made the event bigger and much more competitive. Vying to get a place in the finals, the participants in a team of two made countless attempts to crack thought provoking aptitude and technical riddles. The event was conducted in two rounds. After an initial screening round, top 5 teams were selected to win the coveted prize of Chemblaze. The final round was divided into 4 sections. The different rounds had questions from various disciplines like nuclear technology, process optimization, and elementary principles of chemical engineering and so on. The event was a huge success which saw enthusiasm from both participants and the audience.
4. ***Chem-e-car***: The participants came prepared with their prototypes at the arena. Inspection was done before the commencement of the event. Basic resources were provided by the organizing team of Coalescence 2018 during the inauguration ceremony of Coalescence 2018. In case the participants wish to use chemicals other than those provided, they may use it at their own expenses. Participants needed to submit an abstract indicating their basic requirements. The abstract covered the following points:
* Resources (including the chemicals used)
* Chemical Reaction
* Design along with justification of the design parameters used

Participants weren’t allowed to use their own resources.

Points were awarded on the following basis:

* Resources (including the chemicals used)
* Chemical Reaction
* Design along with justification of the design parameters used
1. ***Rasaayan Negotium***: Industrial Auction scenario in which the participants bade for several components according to the Industrial chemical process assigned to them. Each component had some base price value and certain specific characteristic, advantage and drawback. Participants had to assess all these factors and bid economically to complete their process setup.
2. ***Top it to Win it***: This event was also a fun event which was aimed at our Social activities of hunger elimination, details of which are mentioned in the CSR section. The event was organized on the eve of Coalescence 2018, and the theme was also released on this occasion. In this event, cakes were to be dressed with toppings and other additives, and the one which was most appealing was selected. The turnover was more than expected, and this event gave a boost to Coalescence 2018.
3. ***Chain Reaction***: Participants had to connect all the images associated to get the big picture lying behind.
4. ***Shoot It***: Photography is an art, so why should it be despised? Considering the art of photography, which sometimes is crucial for disaster planning in a process plant, the event was launched. The turnover was appreciably large and the theme was in accordance with the theme of Coalescence 2018.
5. ***Chem-e-Maze***: Participants were provided with a combination of puzzles and riddles, which indicated towards a specific location within the Department/campus premises. The event was designed to provide the element of fun, amidst the brutalities of extreme chemical engineering related events.
6. ***Green City Challenge***: The contestants were given a certain area in our college or outside like IC area, a certain department, hostel etc. where they had to find out the major energy losses there and suggest changes. There are lot of wastes which can be cut down, processed or reused. They had to give suggestions regarding them. The suggestions were in the form of a presenttion or a working model but points depended upon their feasibility and effectiveness. The first round consisted of the submission of the abstract of their proposal(250 words). The selected candidates had presented their proposal.

Points awarded were based on feasibilty, innovation and delivery. Plagiarism was not allowed. Hypothetical scenarios were detested.

Since the last three years, Coalescence has been inventing new sorts of events to keep the students of the Department of Chemical Engineering agog with activity.

**Phrase 4: Corporate Social Responsibility (CSR) Activities**

The sole purpose of engineering is the enhancement of mankind by developing processes and optimizing them. Since the last year, Coalescence has proved its niche in the field of social welfare activities by promoting awareness programmes via its ‘Social Cause’ section.

Coalescence 2018 witnessed an awareness program in joint collaboration with Dristi, an NGO run under BIT Mesra, and Elkos Pens Limited in Pancholi village, where stationery products were distributed under a painting competitioin, which was organized to make people aware of the impacts of plastic products in our daily lives. The event also emphasized upon the need of awareness regarding plastic products. The event turned out to be a scintilling success.

In an attempt to eradicate hunger, Team Coalescence and Winkies in association with National Service Scheme (NSS), BIT Mesra, organized a FIGHT AGAINST HUNGER CAMPAIGN on 5th April 2018.The campaign targeted the following neighboring villages: Kedal, Nevri and Mesra East.

The campaign was based on the theme, “Hunger knows no friend but its feeder." The issue of hunger is rising and the ironical part is that there is more fruit in a rich man's shampoo than on a poor man's plate!

Coalescence team along with NSS Volunteers distributed food packets to show its commitment and sent a strong message that no empty stomach is a key to a peaceful world!

**Phrase 5: Modus operandi for the upcoming session**

Being a technical symposium in name as well as deeds, the events’ schedule chalked out for the upcoming session will be slight different from the previous session. This time, we shall be incorporating a rocketry event (temporarily assigned as ***Chem-e-rocket***) where a prototype of rocket will be designed and launched using proper knowledge of dynamics.

The other events which will be there in our baskets will be a more developed form of “Alumni interactions”. This will enable present students to know about their role in the industries once they graduate out of their university life.

Also, the Industrial Design problem will be more updated, incorporating various industries which are in the business, like RIL, Vedanta industries, SAIL Ranchi and HINDALCO.

Proposals for developing and optimizing an electrical switch using chemical reactions is also in the bud stage.