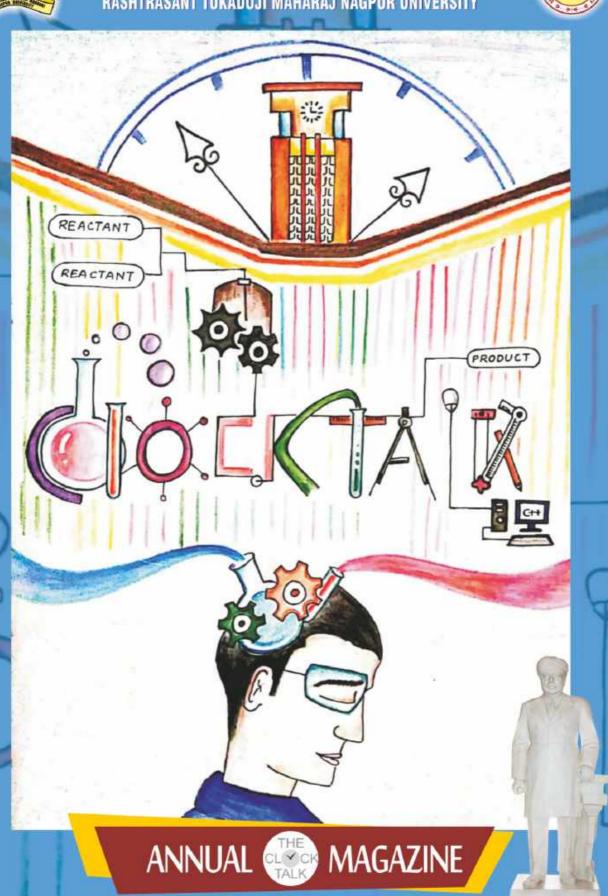


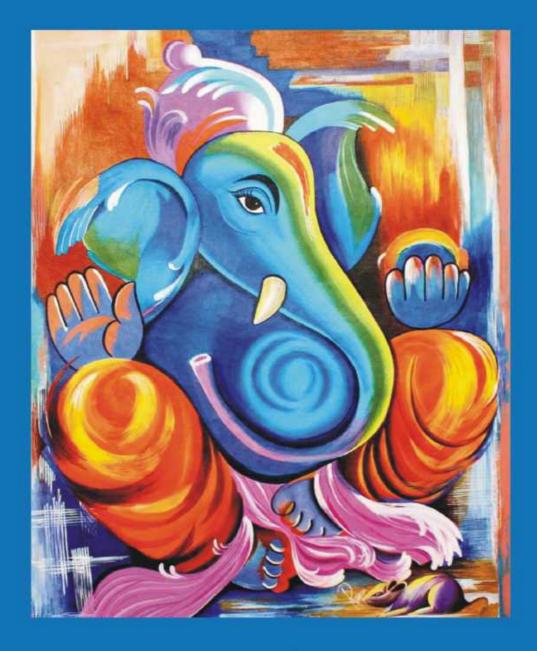
## LAXMINARAYAN INSTITUTE OF TECHNOLOGY



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY



2019



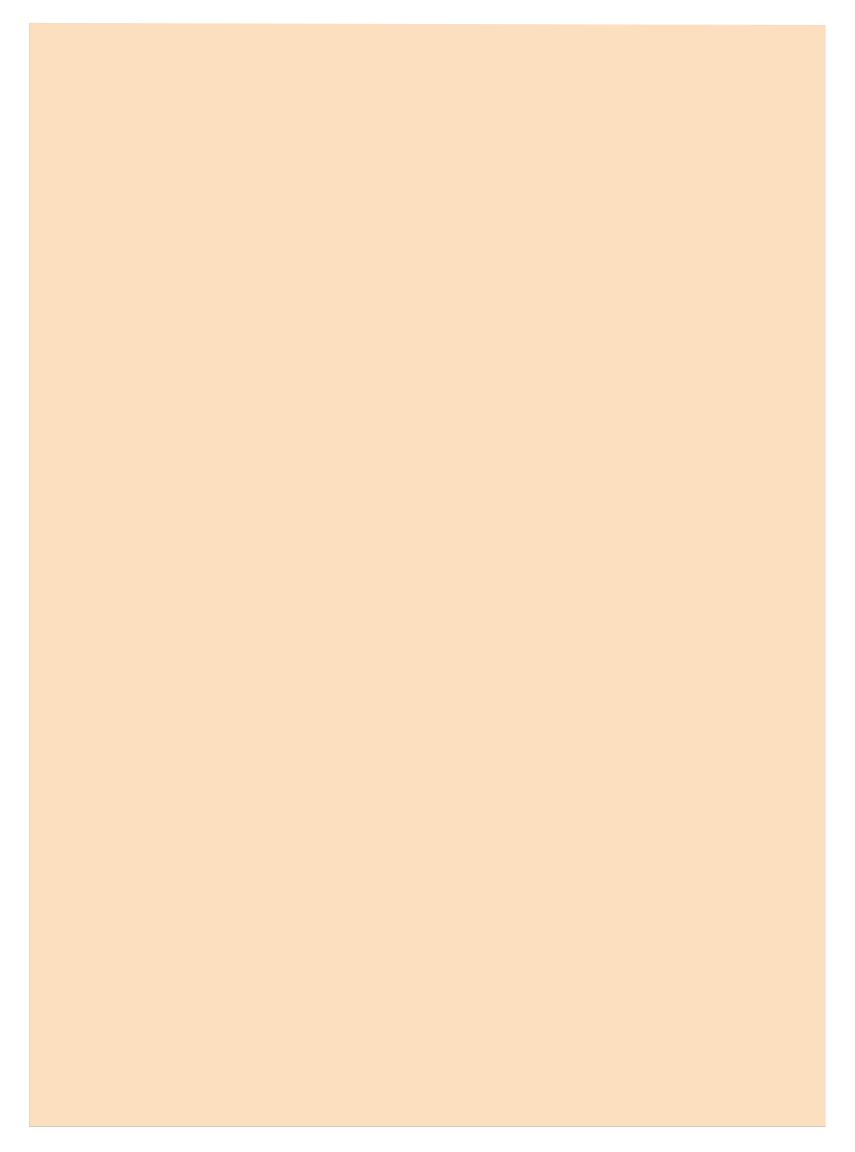
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## OUR INSPIRATION

### Rao Bahadur D. Laxminarayan

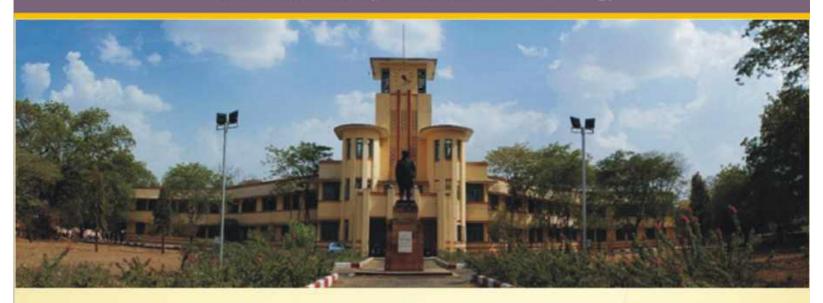


Laxminarayan Institute of Technology, established in 1942, owes its existence to the munificent donation of the Late Rao Bahadur D. Laxminarayan of Kamptee who by sheer hard work and in spite of many difficulties, not only amassed a considerable fortune, but became a prominent figure in the public affairs of the Province.

During his lifetime, it must have striked his mind that the backwardness of the Province was due to the lack of effective higher education, training and research in Technology. Furthermore, his work brought him into contact with problems which required the aid of Technologists for their solution, and in order that this want should not stand in the way of progress, he bequeathed the main part of his property, then estimated as Rs. 35, 20,540, to the Nagpur University by his Will, dated 3<sup>nd</sup> May 1930, for the purpose of "Teaching of Applied Science and Chemistry".

Vidarbha region is blessed to have gems like Rao Bahadur D. Laxminarayan. An industrialist with a revolutionary vision, Laxminarayanji brought a progressive change in the field of research and technology. 'Development can only take place if we progress towards cultivating science and technology', was his strong belief, which he did put to practice as well. The Institute will always revere him, for we owe our existence and identity to him.

### **About Laxminarayan Institute of Technology**



#### Our Vision

The vision of LIT is to provide integrated education of the highest quality at all levels in the field of Chemical Engineering and Chemical Technology and to become a leading Center of Excellence in the country. Also, to improve and prepare the students to function effectively in the multifarious modern work environment with ability to shoulder professional leadership roles and to create the center of excellence that cultivates innovations in chemical, biochemical, environment, materials and energy engineering.

### Our Mission

- The Institute is committed to provide quality education, to conduct research and development activities to meet the needs of chemical process industry.
- To provide eminent technical education in Chemical Engineering stream.
- To build technocrats as per the needs of changing scenario of industries and rapid technical changes at national and international level.
- To inculcate innovative cultured personality with versatile academic performance as well as entrepreneurial skills for social benefits.
- To provide ethical professional practice and to establish scientific and technological basis for chemical engineering practice.

## राष्ट्रसंत तुकडोजी महाराज



## विद्यापीठ गीत

या भारतात बंधुभाव नित्य वसू दे। दे वरचि असा दे। हे सर्व पंथ-संप्रदाय एक दिसू दे. मतभेद नसू दे।। धृ.।।



## DIRECTOR'S DESK

Firstly, I would like to congratulate our Annual Magazine "The Clock Talks" Team for winning the Third Prize in the year 2018-19 in their maiden attempt. Naturally, the expectations from this year's team are more and I am sure that they will work hard and bring out the magazine in best possible form.

The role of a magazine is to provide a platform to showcase creative expressions of students.

I congratulate the dedicated team of students ably guided by our faculty members who have put their efforts for bringing out the second edition of "The Clock Talks".

I also wish all the students of final year success in their future endeavors.

Dr. Raju B. Mankar Director, LIT Nagpur



## CO-ORDINATOR'S DESK

Every year is a new learning opportunity and as we have moved into this New Year, we should be keen and passionate for seeking knowledge. For this endeavour the students of our institute put forward another enriching edition of the annual college magazine "The Clock Talk". I feel immense pleasure to share with the readers that our college magazine "The Clock Talk" won the third prize at the Rashtrasant Tukadoji Maharaj Nagpur University (RTMNU) level in its very first year of participation. This highlights the calibre and efforts of the students involved in making it a great success and motivate us to improve our content and put our best foot forward.

Learning is a process of constantly updating in an ever changing and challenging world. In order to keep our students updated and business relevant, our institute organizes technical talks by eminent personalities, conferences, quizzes and technical fests every academic session. To achieve new heights of academic excellence, students need to strive hard and also participate in co-curricular, extracurricular and social activities throughout the year: which is an area of great focus and pride for the institute. That is why it is very normal when I see my students juggling their day to day academic work pressure with reciting poems, writing blogs, technical reports, clicking nature's beautiful pictures and many more. In order to express their vibrant thoughts and to exhibit their hidden talent of writing skills, the college magazine provides a wonderful platform. Our college magazine "The Clock Talk" gives glimpses of academic and co-curricular activities of LIT so that readers may understand the college even better. Last year was the first time we participated in the university-level magazine competition. This year also our dear students contributed nice poems, write ups, technical reports with full enthusiasm.

I hope the readers will enjoy the second issue of the magazine "The Clock Talk" as much as we have enjoyed in its creation. I am highly thankful to our motivator Director Dr. Raju Mankar for his constant support and I also thank the editorial board of teachers for their kind support for strengthening student teacher relationship.

I thank all the faculty members who have sent inputs about various events conducted in their respective departments. I would like to thank all the students who have contributed articles, poems, blogs etc. for magazine. Lastly, I am highly thankful to my beloved students of Magazine committee for their tireless efforts without which this would not have been possible.

Dr. Shubha P. Dautpure (Kotambkar)

Professor and HOD Mathematics Department, LIT, Nagpur

## MAGAZINE HEAD'S VIEWS



Rahi Kulkarni Magazine Head (The Clock Talks)

From being an editor for 'The Clock Talks' in the year 2018 and working under the most humble and talented seniors, our Magazine Head and the Chief editor for 2018, I saw, understood and learnt how a committee should work together for a magazine. When we were introduced to the magazine by our teacher coordinator, S. Dautpure Ma'am, it was not just a job to fill the pages of a book, we had a chance to explore the talent we had in our own college.

People with skills and talent now had a platform to showcase them, without being judged. Being the Magazine Head for 2019, I understood things weren't as simple as we thought. I feel blessed to have such a dedicated and hard-working committee. Every member of the committee has something which others can learn from them. Be it time management, sense of judgement, leadership etc. Every member performed their roles just the way it was expected. One thing that I always admired about the committee was their patience. Whenever we had some 11th hour changes, maybe suggested by me or the Chief Editor, Vedant Adhau, or straight from the Teacher's Editorial panel, the team members never showed a sign of distress and completed the work without procrastinating.

## CHIEF EDITOR'S VIEWS



Vedant Adhau Chief Editor (The Clock Talks)

Success is a journey, not a destination and the journey towards the making of the magazine which you hold in your hands has been life changing. Now when I see myself and my team, it reflects in our persona, the skills we have acquired, the connections made and the inner growth of mind. A College Magazine is a mirror of the college life. It reflects the creative and innovative side of the students and the educational, cultural and social activities happening in the Institute.

I am very proud to be the Chief Editor of the 'Clock Talks' magazine, which includes the Technical writeup's, Creative Articles which will make you wonder upon the thinking of the students and poems which will touch your soul.

And one of the unique feature of our Magazine is you can read it on the go, on your mobile screens just by scanning the unique QR featured at the bottom of the content page.

Enjoy reading the 'CLOCK TALK'

## FACULTY EDITORIAL PANEL



Dr. Shubha (Kotamkar) Dautpure
Teacher Co-ordinator
Head of Department Applied Mathematics



Dr N. ThejoKalyani Chief Editor - English Assistant Professor Applied Physics



Dr. Shilpa A. Pande Chief Editor - Marathi Head of Department Applied Physics



Dr. Pratibha S. Agrawal Chief Editor - Hindi Head of Department Physical Chemistry

# THE COMMITTEE



( Picture Courtesy - Somoudeep Biswas, Final year C.T )

(From L to R - Dr. Shilpa A.Pande, Dr.Pratibha S. Agrawal, Dr. R. B Mankar, Dr. Shubha Dautpure, Dr. N. Thejo Kalyani)

## STUDENT EDITORIAL PANEL

Position	Name	Year
Magazine Head	Rahi Kulkarni	3rd
Chief Editor	Vedant Adhau	3rd
Publication Head	Shreya Marar	3rd
English Head Editor	Renuka Gajaralawar	3rd
Hindi Head Editor	Mrunal Hulke	3 <sup>rd</sup>
Marathi Head Editor	Piyush Amrutkar	3rd
English Panel	Mirza A.H Baig	3rd
	Om Chaturvedi	3rd
	Trupti Bhore	2 <sup>nd</sup>
	Dibyanshu Dwivedi	2 <sup>nd</sup>
	Neha Vensiani	1 <sup>st</sup>
	Rahul Bhatkar	1 <sup>st</sup>
Hindi Panel	Arindam Sinha	3rd
	Shivani Hurmade	2 <sup>nd</sup>
	Ritika Wawge	2 <sup>nd</sup>
Marathi Panel	Shraddha Chaudhari	3rd
	Prajakta Tayade	2 <sup>nd</sup>
	Shreyas Mahiskar	2 <sup>nd</sup>
Advisor	Aniket Kalambe	4 <sup>th</sup>



# Technical Section





## FUTURE TIMELINE NANOTECHNOLOGY

- The past 70 years have seen the way we live and work transformed by two tiny inventions. The electronic transistor and the microchip. Ever thought that what it takes to fabricate them.... it's the nanotechnology.
- A nanometre (nm) is one billionth of a meter and so this kind of engineering involves manipulating individual atoms using various high class and modern fabrication techniques.
   These nanomaterials find numerous applications in present era.
- Wearable fitness technology means we can monitor our health by strapping gadgets to ourselves. But by scaling down this technology, we could go further by implanting or injecting tiny sensors inside our bodies.
- Newly invented sensors have the sensing elements made in nano size making highly effective and efficient with highly compact size.
- In addition to this nanotechnology finds numerous
  applications in self-healing structures, data storage, pharma
  industries, catalyst manufacturing industries, making it a
  technology to watch out for in a near future.....

-Atharva Themdeo

## APPLICATION OF NANO TECHNOLOGY IN FOOD PACKAGING

-Shalvi Bhalerao, Vaibhavi Mangrulkar, Shreya Kamad 3rd Year CE



Nanotechnology is the branch of technology that deals with the making of structures that are less than 100 nanometres long. It is recently being used for food packaging. Its use is continuously increasing for reducing the problems found during storage, preservation and packing of food items. Nanotechnology has vast potential for extending the life of food and its safety. It focuses on the removal of unwanted carbon dioxide through nanoparticle films to lengthen the food's life. Application also provides protective barriers to flavour and taste masking, controlled release and better dispersability for water-insoluble food ingredients and additives.

This technique mainly uses the effect of different nanoparticles, nanosensors, nanocomposites on the food to be packed. It provides various benefits like increases life of food, ensure food safety, minimize spoilage, preservation of food etc. Also the use of biodegradable films ensures environment safety. Antimicrobial protection to food products as well as temperature and humidity resistance has paved the way for the increased use of nanoparticles in food packaging. Nanotechnology offers many possibilities in food safety and packaging, as an example, gas barrier structures with nanoparticles in plastics that could prevent the diffusion of gas such as oxygen and water vapour by creating tortuous paths. Addition of nanoparticles to existing food can enable increased absorption of nutrients. Another key application is additives which could easily be absorbed by the body and could increase product shelf life. There is a wide application of nanotechnology in food packaging like it can be used to detect bacteria, colour quality and safety for increasing the barrier properties. Although there are great applications of nanotechnology, it is still under research. It is a potential packaging material with application on development. As developments in nanotechnology continue to emerge, its applicability to the food industry will increase potentially.



-VedantAdhau

3rd Year CE



Most users of information technology have a fair idea about Bitcoin, the way it works, the value it holds, etc. But hardly anyone knows the technology underlying it, which is blockchain. This is understandable: all of us use the Internet in our day-to-day lives, listen to music on Wynk, download or stream movies, access information on Wikipedia, etc. without understanding how the underlying technology actually works. But Blockchain as a technology is nothing less than a revolution; it has applications far beyond bitcoin.

#### WHAT IS BLOCKCHAIN?

Blockchain is a decentralized, distributed and public digital ledger that is used to record transactions across many computers so that the record cannot be altered retroactively without the alteration of all subsequent blocks and the collusion of the network.

When it comes to storing of data in digital form whether it is accounts of corporations, personnel data stored by an organization, Aadhaar record maintained by the government, videos on Youtube, etc., it is stored on a centralized server and accessed over the network connected to that server. This traditional form of data storage has various issues such as the safety of data from unauthorized access, alteration of data without permission, loss caused bydamage to the server, etc. On the contrary, data in a blockchain is kept in the decentralized form of continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block typically contains a cryptographic hash like a password of the previous block, a timestamp (indicating the time of insertion of record) and transaction data. The main feature which makes blockchain unique and decentralized is that it is maintained by a peer-to-peer network that follows the rules for inter-node communicatie validating new blocks. Blockchain was invented by Satoshi Nakamoto in 2008 to serve as the public transaction ledger of the cryptocurrency bitcoin.

#### **HOWITWORKS**

To put it simply, consider a blockchain as a file. Each new page created i.e. block will be inserted in file i.e. blockchain. Every page has some data, the password for that particular page and password for the previous page. The data stored in the blockchain depends upon the type of information stored. For example, each page of the bitcoin file will contain the information of the sender and the receiver of money and amount of money involved. The feature which makes it so secure is the password (technically, hash) attached to each page and the linkage of hash to previous page. Once this hash is changed, it will no longer be considered as same page and thus hash for all the further pages needs to be calculated again, making it practically impossible. The changing of hash for a particular block is done by using a technique known as proof-of-work, which for every change requires computer- based calculations. For example in the case of bitcoin, it takes about 10 minutes for proof-of-work to add a new block to the chain. Everyone joining the chain will have a copy of the file, just like Wikipedia, where everyone on their computer can see at the same time which information has been entered and altered by all the users globally over a period of time. If there are any changes then those are to be verified by the consensus of people who have joined the network.

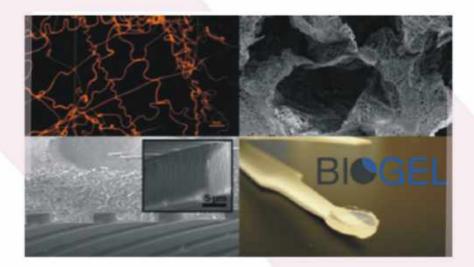
#### APPLICATIONS OF BLOCKCHAIN

Till date we have practically seen only one application of blockchain, which is Bitcoin. It is because of this technology that a fully independent, reliable and safe financial system has emerged in the economy without the need for intermediaries like the Reserve Bank of India State banks or other financial institutions. The other applications include smart contracts, storing medical records, personal records, land records, etc. Blockchain-using smart contracts would generate invoices that automatically get paid after receipt of goods. Another examples: in case of shares of listed companies, dividend automatically gets distributed once profit reaches a specified threshold. This holds the potential that data related to sales and purchases of an organization can be maintained on a private blockchain with the vendors being the participants in the network Payments and settling of balances could be done automatically based on the terms of contrast, provided the conditions mentioned in the contract are satisfied. The complex parameters required to set up in a chemical industry can be stored efficiently and can be used to run AI based system control. According to Accenture, an application of the diffusion of innovations theory suggests that blockchain attained a 13.5% adoption rate within financial services in 2016. therefore reaching the early adopters phase. Land records can be similarly maintained by the government. A blockchain can assign title rights based on the offer and acceptance of a transaction between concerned parties. Such records then become immutable, therefore risk of tampering is nullified. Such records are also very easy to access, thereby eradicating complications related to ownership claims. Till date we have seen only the tip of the iceberg when it comes to this innovative technology.



### BIOMEDICAL APPLICATIONS OF HYDROGELS: AN INNOVATIVE ALTERNATIVE.

-Shreya Marar, Tejas Ghoradkar 3rd Year CE



#### Hydrogels are three-dimensional, hydrophilic, polymeric networks, capable of absorbing large amounts of water or biological fluids.

Hydrogels consist of natural or synthetic materials that can absorb several times their own dry weight. They have received considerable attention in the past few years, due to their exceptional utility in a wide range of applications.

Hydrogels are 'biocompatible' i.e., they absorb water and physiological fluids, which makes it more biodegradable and due to their high-water content, porosity and soft consistency, they closely simulate natural living tissue, more so than any other class of synthetic bio-materials. Hydrogels may be chemically stable or they may degrade and eventually disintegrate and dissolve.

Hydrogels may be of two types-Chemical and Physical.

If molecular entanglements and/or secondary forces such as ionic, H-bonding or hydrophobic forces play the main role in forming the network, these are Physical Hydrogels and it is possible to dissolve them by changing environ-mental conditions, such as pH, and the ionic strength of solution or temperature.

In 'permanent' or 'chemical' gels, the network of covalent bonds joining different macromo-lecular chains can be achieved by cross-linking polymers in the dry state or in solution.

#### **Contact Lenses**

Nowadays Silicone Hydrogel (SiHy) lenses have become prevalent in the market due to their: Higher oxygen permeability, higher wettability, comfortable fitting.

#### **Tissue Engineering**

It involves the improvement or replacement of specific tissues or organs using engineered materials and synthetic strategies. Tissue engineering is a more recent application of hydrogels, in which they can be applied as space filling agents, as delivery vehicles for bioactive substances or as three-dimensional structures that organize cells and present stimuli to ensure the development of a required tissue.

#### **Drug Delivery**

The high porosity that characterizes hydrogels can easily be adjusted by controlling the density of cross-links in their matrix and the affinity to water. Their porous structure also allows drugs to be loaded and then released. The advantages offered by hydrogels for drug delivery applications include the possibility for sustained release, which results in maintaining a high local concentration of an active pharmaceutical ingredient over a long period. Mechanisms to release the drug loaded in a hydrogel is to diffusion controlled, swelling controlled, chemically controlled and environmentally-responsive release.

#### **Hygiene Products**

**SAPs or Superabsorbent Polymers** have been firstly commercially produced in Japan in 1978 for use in feminine napkins, and this early material was represented by a cross-linked starch-g-polyacrylate.

They are used in adult diapers too. Further developments in these applications are expected with the formulation of the materials containing enzymes and other additives to prevent infections and unpleasant smells. Additionally, taking the scale of production of these materials into consideration, there is a clear need in environmentally friendly hygiene products that undergo biodegradation.

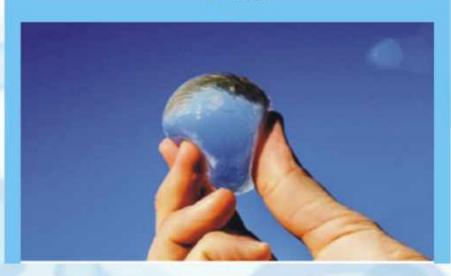
#### **Future Potential**

Hydrogels are widely present in everyday products though their potential has not been fully explored yet. These materials already have a well-established role in contact lenses, hygiene products and wound dressing markets but commercial hydrogel products in tissue engineering and drug delivery are still limited. More progress is expected in these areas. Limited commercial products with hydrogels in drug delivery and tissue engineering are due to their high production costs. Hence the future lies in the possibility of innovations in biodegradable hydrogels, which can be utilised for various applications.



## FOR PLASTIC WATER BOTTLES

-Samidha Tamboli, Harini Rao, Pratibha Agrawal 3<sup>rd</sup> Year, CT



- Disposable plastic water bottles are a convenient way to stay hydrated.
- But they have major consequences on the health of our planet—not to mention the people who drink from them.
- The production and disposal of bottled water negatively impacts the Earth's resources, the size of our landfills, and even the level of water pollution in the fluids you drink every day.
- Bottled water isn't just bad for the health of our planet—it has a detrimental effect on our own bodies.
- Water bottles contain chemicals like BPA and antimony that can cause reproductive issues, asthma and dizziness.

# Edible water balls. The water you can eat! Quench your thirst with an edible water bottle!

- Water is one of the precious compounds on Earth.
- Availability of pure drinking water for human consumption is inevitable. Currently, major fraction of drinking water is supplied though various non-biodegradable packaged materials.
- However, use of non-biodegradable plastics for packaging is resulting in generating of huge quantities of waste.
- Alternatively, biodegradable (eco-friendly) water packing materials can be considered as a solution.
- This edible water 'bottle' plans on replacing millions and millions of plastic bottles which are thrown away every year.

#### This is how it is made -

- These biodegradable water balls are composed of brown algae (sea weed) and are edible materials.
- The preparation of edible water balls is very easy, and can be prepared at home.
- The preparation involves mixing of sodium alginate and calcium lactate with drinking water.
- This forms a gelatinous membrane structure and retains the drinking water in the middle of a gelatinous structure.
- Sodium alginate (NaAlg) coagulates when exposed to calcium chloride (CaCl<sub>2</sub>) and forms calcium alginate (CaAlg<sub>2</sub>) and sodium). chloride (NaCl)
- The prepared calcium alginate ball with water is considered as a refreshing edible water drink and does not require a separate vessel like a bottle or a cup to hold water.
- 2NaAlg+CaCl<sub>2</sub>-->CaAlg<sub>2</sub>+2NaCl...

#### Drunk your water?

Now eat the bottle it came in!

- These water balls are ecofriendly and serve as an alternative to plastic bottles.
- Drinking water from inside a soft edible membrane made from natural seaweed extract is considered as a sustainable product in the long run.
- It's a spherical packaging made of seaweed, entirely natural and biodegradable.
- This water bottle can even encapsulate any beverage including water, soft drinks ,spirits and cosmetics.
- These edible water balls can be used at major events such as marathons and music festivals in the near future.



### FUEL FROM SEWAGE

-Sakshi Admane I\*Year



There is a risk of decline in petroleum production derived from fossil fuels due to limitations of resources in the future. Also, about 80 percent of the sewage generated all over the world remains untreated leaving behind a question about its disposal in front of us. And therefore, we find a solution to both these problems – "Fuel from Sewage". It may sound like science fiction but waste water treatment plant across the world may one day turn ordinary sewage into bio crude oil.

Hydrothermal Liquefaction mimics the geological conditions earth uses to create crude oil using high temperature and pressure to achieve in minutes, something that takes mother nature millions of years. Hydrothermal Liquefaction may also be used to make fuel from other types of wet organic feedstock, such as agricultural waste. The heat and pressure is applied to the waste materials resulting into bio crude and an aqueous liquid phase. In addition to the bio crude, the liquid phase can be treated with a catalyst to create other fuels and chemical products.



### HERBAL SHAMPOO

-Harsh Fale, Toshi Meshram, Tarini Duragkar 2<sup>nd</sup> year CT



Shampoo is a hair care product, originating from the Indian subcontinent, typically in the form of a viscous liquid, that is used for cleaning hair. The typical reason of using shampoo is to remove the unwanted build-up of sebum in the hair. Its basic composition contains ammonium chloride, ammonium lauryl sulphate, glycol, sodium lauryl sulphate (SLS) to create lather, polysorbate used to solubilize fragrance oils and essential oils, citric acid as an antioxidant, Quaternium-15 as fungicidal preservative. Many shampoos are pearlescent. But nowadays, hair fall is being a serious issue, SLS present in formulation of shampoo can cause hair loss, also it leads to dry and itchy scalp, it may also cause irritation to eyes. Thus, a research was conducted to produce shampoos with certain herbal ingredients. This would be normal shampoos but with some herbal extracts. This herbal extract would work to recover the loss caused by the normal shampoos and will make it suitable to provide more nourishment and enhancing effect than normal shampoo. High cost of this shampoo would be a major limitation, which makes it necessary to minimize the expenses. Thus, the overall research aims to form herbal shampoo with more nourishment values and available at low cost.

## GRAPHENE AND ITS DERIVATIVES APPLIED AS ADSORBENTS, FOR HEAVY METALS REMOVAL FROM AQUEOUS PHASE

-Piyush Amrutkar 3" Year CE



Dyes and heavy metal ions discharged to water bodies have become a worrisome issue because of their persistency and toxicity. In order to secure the innate beauty of our planet and to conserve our non-renewable natural resources, specifically, water, it is essential to check and/or to minimize heavy metal ion and dye concentrations before discharge. Adsorption is considered as a robust and widely acclaimed water decontamination technology. In material science research, much attention has been focused on graphene, a carbon allotrope with a two-dimensional sheet-like structure possessing unique structural properties that has been utilized in various research areas. Theoretically, the surface area of graphene is 2630 m<sup>2</sup> g<sup>-1</sup> which is excellent for adsorption.

Graphene, discovered in 2004 by A. K. Geim and K. S. Novoselov is considered as promising candidate for the post silicon age. Research on graphene is a rapidly progressing field, with new concepts and applications appearing at an incredible rate. Surface properties such as surface area and pore size distribution influence the adsorption on graphene. The graphene showed an ultrahigh specific surface and no porosity. In order to improve the adsorption capacity of graphene, the introduction of porosity is an efficient and feasible method. Combining other porous materials with graphene can introduce porosity.

Numerous research reports have been appeared for the utilization of Graphene and its derivatives for the adsorption of heavy metals.

Experiments were conducted in order to remove heavy metal ions form aqueous phase using various graphene derivatives. Most of the adsorption studies data fitted well with Langmuir adsorption isotherm. Maximum adsorption capacities for various metals are tabulated below.

Metal	Maximum Absorption Capacity (mg/g)	
Sb(II)	10.92	
Fe(II)	299.3	
Co(II)	370	
Pb(II)	35.47	
Cr(II)	21.57	
Pb(II) [Sio2 Graphics]	113.6	
Hg(II)	93	
Ag(II)	64	
Co(II) [amine-modified GO]	116.35	

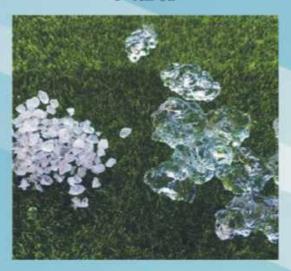
The large scale, cost-effective, and ecofriendly preparation of high quality graphene and its derivatives are essential for many applications. In case of electrostatic interaction, anionic pollutants are usually favored by low pH value. Anions have been proposed to be adsorbed through specific and non-specific adsorption. Nevertheless, the adsorption of cations and anions is based on three adsorption mechanisms consisting of electrostatic interaction, ion exchange, and complex formation. The adsorption isotherm and kinetics can be described by the Langmuir isotherm and the pseudo-second-order model. The adsorption process for graphene-based materials is spontaneous, endothermic, and feasible.

Moreover, advances in both fundamental physics and chemistry and practical techniques will enable revolutionary applications based on graphene and its composites to expand the horizons of graphene nanocomposites and open up new windows in environmental remediation and restoration.

#### CELLULOSE-BASED SUPERABSORBENT

-Rahi Kulkarni

3rd Year CE



Superabsorbent Polymers are water-swollen polymeric materials that maintain a distinct three-dimensional structure that includes cross linking polymer-polymer reaction which is used for absorbing water up to 100-1000% of its own weight. SAPs have already been widely used in agriculture and many other areas. They are suitable for agricultural applications as a soil conditioner and nutrient carrier. Agricultural applications are likely to witness highest gains in the next few years because of superior water retention properties required for crops in rainfall/water scarce area like Maharashtra, India.

Superabsorbent polymers are made out of polyacrylamide or Acrylamide which is produced using propylene, which is obtained by thermal cracking of crude. Acrylate-based SAPs encourages contamination of soils with toxic metal elements which is of a great concern to scientists and the general public. As an upcoming chemical engineer, an alternative to the petroleum and petrochemical industry seems like an essential topic to be discussed and the thought led us to study 'Cellulose Based Superabsorbent Hydrogels'. These hydrogels as a friendly alternative to acrylate-based SAPs were made using derivatives of sodium salt of carboxymethyl cellulose, hydro methyl cellulose and starch as starting materials.

Carboxymethyl cellulose was synthesized using Lignocellulosic sawdust by process of an organic base and a weak acid, mixing it with starch. Superabsorbent Polymer made using CMC and Starch exhibited an environmentally friendly enhancement in soil due to its biocompatible nature. Optimal water retention by the SAP investigated suggested that it is optimised when 2.3% aluminium sulphate was used as a cross linking agent. Agent if used less than 2.3%wt showed undercross linking of hydrogel whereas if used more than 2.3%wt, hydrogel was found out to be over-cross linked. At first, water absorption increases with time till state of balance is attained. After this state, hydrogels do not swell up further resulting less water absorbance power. Water molecules were absorbed due to hydrophilic groups which were immobilized in 3-D cross linked network. Costing of cellulose based hydrogels may create a barrier for its industrial production and consumption. Study shows that the global market for hydrogels totalled \$15.6 billion in 2016. The market should total \$16.5 billion in 2017 and \$22.3 billion by 2022, growing at a compound annual growth rate (CAGR) of 6.3% from 2017 to 2022. The hydrogels currently being used in the market are mainly of the raw material with synthetic nature.

#### INDIA'S LING DRIVE

-Ritika Wawge 2nd year CE



Early in 2018, at an energy summit, US underlined the opportunity to export its LNG produce to Asian powers, essentially India & China, the share of Natural gas in energy mix for these countries has been well below the global levels. According to a study, the current rate of CO2 emissions need to be roughly halved for the next couple of decades in order to restrict the rise of global temperature to 2 degree C. In such circumstances, the question is not just of energy conservation or controlled consumption but primarily of the availability of cleaner fuels. India remains one of the fastest growing economies with enormous demand for fossil fuels, unfortunately it is highly dependent on foreign crude & natural gas sources. Even today, millions of Indian households are deprived of electricity supply & millions others are associated with improper power connections, therefore there lies a great scope for Natural gas development & network expansion.

Petronet LNG was incorporated in 1998 as a joint venture among domestic oil & gas majors with a vision to contribute towards the nation's energy security by leveraging the company's unique position in the LNG value chain. Decades later, the company has come a long way with operating capacity of more than 20 MMTPA (equivalent to 80 MMSCMD of Natural gas) with full fledged terminals at Dahej & Kochi, Dahej Terminal was South East Asia's first LNG receiving & regasification facility & initially commissioned with a capacity of 5 MMTPA. Petronet has forged supply contracts from Middle East, US, Russia & Australia till date & is eyeing a more diverse portfolio to prevent disruption by sectoral shocks.

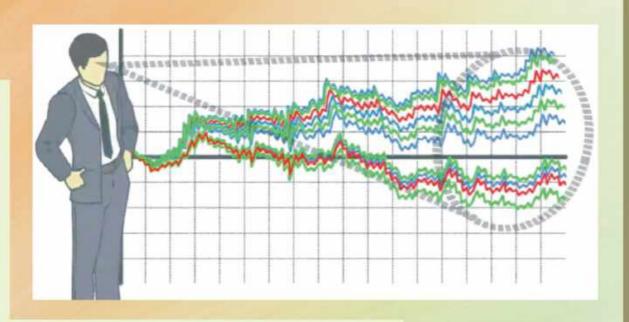
#### LNG & its applications

Liquefied Natural gas is natural gas that has been cooled to a liquid state at -160 C for storage & transportation. The fuel's volume is 600 times lesser than its volume in gaseous state, thus it becomes possible to ship natural gas thousands of kilometres away when pipeline transport is not viable. In importing regions, LNG cargoes are received at terminals where it is either stored for future use or converted to vapours for distribution to consumers through pipelines. Some of the common applications of LNG in today's world are heating operations, road transport & power generation. The Clock Talk Global natural gas demand growth is projected to grow at 1% p.a till 2035 primarily driven by power & industrial sectors, nevertheless the total supply will be mainly coming from China, US, Russia & the middle East. With 27 bcm of natural gas imports last year & CAGR of 10%, India seems to be the most likely destination for compensating the steady markets elsewhere few years later. As estimated in the latest IBEF edition on oil & gas industry, India's natural gas consumption is set to rise from 58 bcm in 2018 to 144 bcm in 2040, which will need CAGR of 4% to be realized. India's natural gas production rose marginally from 31.8 to 32.06 bcm in a year, also the proven reserves have settled for a while, the growth in consumption can be directly attributed to adequate foreign supplies. Given India's natural gas scenario, Petronet LNG is poised to play a key role to cater to the nation's energy demand & promote switching to gas from Oil & coal applications.

Tellurian is a \$2.5 billion energy start-up, centred around LNG activities that's creating tremors in United States energy, it is building the largest liquefaction export facility in the country & recently signed the largest ever deal in the history of US with India LNG importing giant Petronet LNG, which will entitle the Indian player to buy up to 5 MMTPA of LNG from the driftwood project. The signing of the deal took place in the presence of Prime Minister Narendra Modi who has been an exponent of cleaner & accessible energy around the world. It is believed that the deal's signing is motivated by India's resolution towards adopting natural gas & transition from other fossils to natural gas. Apart from the demand, India's natural gas infrastructure consisting of pipelines & regasification stations are being underutilized which raises questions over the price. Energy giant Total's Chief Executive lately commented that one of the main reasons of their acquisition of LNG project offshore Mozambique was due to it's suitable position to deliver LNG to India efficiently. Total has even picked 37.4 % stake in Adani Gas Ltd., they aim to bring competitive LNG to India, at present Government gives freedom to producers to sell gas at higher prices from difficult & unconventional fields. With the arrival of global companies &long-term revenue sharing & gas supply contracts in place, the energy market landscape is bound to transform in coming decades. Efforts are being made to exploit reserves involving gas hydrates, shale gas & harness coal bed methane in wake of rising demand across the country, supportive policies & advancements are being leveraged in every corner. LNG revolution began few years ago, maybe there's a lot more to unfold & change the order of our life.

# MONTE CARLO SIMULATIONS AND ITS APPLICATIONS IN THE HELD OF CHEMICAL ENGINEERING

-Yash Thakur (2017 Batch CE)



"Data is the new currency" as it is rightly said. In such an era, ability to turn data into crucial insights which drive business decisions becomes essential. Various tools and techniques have been developed to help decision makers appreciate the risks (better known as uncertainties) associated with the businesses/ processes and use the same risks in modelling outcomes which enable prudent decisions backed by data. Monte Carlo Simulations are one such class of computational algorithms wherein we try to model the probability of different outcomes in a process that cannot easily be predicted due to the intervention of random variables. In simpler words, Monte Carlo Simulations helps you analyze all the possible outcomes in a process by varying the random variables impacting the process. Monte Carlo Simulation can be used to tackle a range of problems in virtually every field such as finance, engineering, supply chain and science. Field of chemical engineering too which involves complex reactions and plethora of variables which the impact the final result finds tremendous use of Monte Carlo simulations.

Today the chemical engineering world is of automation and it starts from simulation of a process in laboratory. Thus, modeling helps in scaling from lab scale to bench or pilot scale and then to a plant scale. Modeling of a process works on basics of chemical engineering in terms of heat energy, momentum energy or mass balance according to the chemistry of the process. Let's say we need to design a chemical reactor for an exothermic reaction. Now, there are many variables like temperature, pressure, mass of reactants, chemical properties of reactants, cooling agent properties, material of construction of reactors etc. which needed to be taken care of while designing the reactor. Now all these variables can vary within certain ranges (say temperature can be between 100 to 200 degree Celsius) and they can occur in different combinations like high temperature low pressure and vice versa. All the combinations of variables with different ranges can result into n number of outcomes which may or may not result into desirable outcome. Hence, the laboratory data needs to be worked with different variables effecting the process and there combinations along with accurate analysis of their impact on the output. This is where Monte Carlo simulation comes handy as it helps in laying out all the possible outcomes which can happen during the chemical processes and thus engineer can design the model based on those possibilities. Without computation power of Monte Carlo Simulation, it is humanly not possible to imagine all those eventualities.

In fact, Monte Carlo simulations were first used during "Project Manhattan" during World War 2 for developing atom bombs to test the critical limit at which the bomb will explode which could not be done experimentally for the obvious reasons and hence had to be simulated using Monte Carlo Simulations. It is not a coincidence that Monte Carlo simulations were first used for modelling chemical reactions because reaction output can be quite hazardous if they get uncontrolled and thus it is important to take into account all the possibilities in the design stage only as there is little chance of error in the production stage.

As the unpredictability increases in the field of chemical engineering with complex interplay of chemical processes, Monte Carlo Simulations are increasingly finding applications in processing engineering applications, plant safety designs, understanding complex properties of reactants in R&D settings etc.



## WATER ABSORBING ROAD WITH ACCIDENT SAFETY

-Gaurav Waghmare 1st Year



#### PART 1: W.A.R (WATER ABSORBING ROAD)

MATERIALS: Cement, gravels medium sized, water.

#### INTRODUCTION:

W.A.R is designed such a way that when water from a specific source like rain water falls on road it gets absorbed by roadand that water is send to underground tanks constructed at sides of roads.

From the storage tanks the water can be carried for treatment and then can be circulated to drought prone regions of country.

Rain water or rainfall can be best or major source to fill the storage tanks by means of W.A.R.

Parking lots are best places to apply W.A.R. The road can be constructed in patches of about 50 m to cut the construction cost and maintenance cost.

Maintenance can be done by just applying vacuum to road at least in 3 months.

#### ADVANTAGES:

- Disasters like floods can be avoided.
- 2. Problems of water lodging can be solved.
- 3. Water scarcities in various parts of country can be reduced to a great extent.
- 4. If constructed in patches construction cost is less.
- Maintenance is easy and give more employment as a person is required to operate vacuum vehicle.

#### DISADVANTAGE:

- 1. Storage tanks should be emptied time to time otherwise water can damage road strength.
- 2. Have little bit less strength but can be improved using other materials in place of cement.

#### PART 2: W.A.S. (WITH ACCIDENT SAFETY)

MATERIALS: L.D.R circuit, LEDs.

#### INTRODUCTION:

This part of project deals with the major causes of accident due to low visibility in foggy areas. According to statistics more than 500 accidents happens in a year due to low visibility in foggy regions. So, we developed a simple solution for this problem using LDR circuits. When a car crosses the laser falling on LDR the photocurrent emissions stops and the LEDs or lamps planted on both sides of road in middle of each lamp post glows. So it gives us indication that their is a car behind us or in front of us. This prevents accidents to a great extent. The mechanism stops working on removal of fog with the help of another LDR circuit.

#### ADVANTAGES:

- 1. Many accidents can be prevented especially in foggy regions on bridges or roads.
- 2. Saves energy as gets automatically shutdown on removal of fog.
- 3. Ecofriendly can also be used to control the street lamps to turn on and off automatically during night and day respectively with the help of sunlight.

#### DISADVANTAGE:

1. Problem in LDR can cause system failure but can be resolved if inspection is done time to time and also the replacement of LDR.



#### PRODUCTION OF BIOFUELS FROM MICROALGAE

-Trupti Bhore, Shivani Hurmade, Trisha Dutta.

2" Year CE



Nowadays we face limited stock of petroleum derived fuel resources combined with constantly increasing demands for energy due to rapid industrialization and population growth across the world. Moreover, the combustion of fossil derived fuels has led to increasing emission of greenhouse gases such as carbon dioxide, leading to global climate changes. In order to achieve sustainable development, the critical issues noted above and the gradually rising fossil derived fuel prices have called for the needs to search for alternative sustainable and renewable energy sources.

This has made it necessary to switch to natural avenues such as microalgae. Biofuels are defined as the liquid fuels produced from the biomass of different agriculture, forest produced and biodegradable portion of industrial waste. Microalgae have long been recognized as potentially good sources for biofuel production because of their relatively high oil content (20%-80%) and rapid biomass production. Algal cells have 30% higher lipid content than soybeans and palm oils. Since the attention is focused on the materials that do not compete with food and feed production, algae have a significant potential as an alternative biodiesel feedstock. Potential algal biofuel conversion technologies are being researched. The simple method of fatty acids extraction and separation of biodiesel is the blending method on small or experimental scale. However, production of biofuels from algae is not yet sustainable economically. Challenges such as increasing oil content of existing strains, cost reduction, product development other than oil etc. have to be discussed upon. Technologies such as genetic mutation and LEAPS (Laboratory Environmental Algae Pond Simulator) are being tested to solve the challenges enlisted above.



### TYRE OIL

-Sanket Matte, Kunal Lichade, Akshay Khade. 2<sup>nd</sup> year CE.



Due to rapid growth of automobile industry there are 1.5 million waste tyre all over the world. So to deal with it various processes were discovered which mainly includes preparation of tyre oil. Tyre oil is nothing but pyrolysis oil which is obtained from waste plastic and tyres.

Pyrolysis is thermal decomposition of organic material at elevated temperature in absence of oxygen. Raw materials required are waste plastic, waste tyre, used engine oil, sludge. When raw material in the reactor is heated at a temperature greater than 350 degree Celsius it gives fuel oil(40-45%) which is used as industrial fuel or refined to diesel; steel wire(10-15%) which is sold directly or reprocessed; and carbon black powder(30-35%) which is used for making bricks with clay, when the temperature reaches 250-280 degree Celsius oil gas is obtained which is condensed to fuel oil, Which can be used to heat reactor, at temperature greater than 40 degree Celsius we get a carbon black and steel wires. Pyrolysis oil has high calorific value of about 10,000 kcal/kg. In general, 2.5 tons of waste tyre can make 1 tons of fuel oil. Tyre oil is used for burners, boilers, generators, thermic fluid heaters, diesel pumps, etc. also used for low speed engines such as digging machine, road rollers, loading machines etc. Dedusting, tail gas, recycling and odor system can control pollution to large extent in these. Tyre oil is widely used in bricks, steel and glass industry. This not only solve problem of environment but also question to shortage of energy.



# COMPARATIVE STUDY OF THE REMOVAL OF HEAVY METAL FROM SAMPLE SOLUTION USING ADSORBENTS

#### -Disha Ghosh

Chemical Engineering, 2019 Batch

Comparative study of the adsorption capacities of activated carbon and adsorbent prepared from onion peels was done. The basic aim was to remove heavy metal from water because of the harmful consequences of the presence of heavy metal. Presence of such heavy metals cause several chronic disorders, cancer, bronchitis, skin disease etc. Also it was realized that humans and animal consume such heavy metals either directly by consuming water or indirectly by consuming the aquatic animal which in turn have drunk the water. Bioaccumulation is an important aftereffect of presence of heavy metals. The different types of heavy metals include arsenic, cadmium, copper, lead, mercury etc. The conventional methods for removal of heavy metals include coagulation and flocculation, ion exchange, membrane filtration, biological remediation etc. However such methods are complex and expensive. On the other hand, adsorption is a simple approach where adsorbents are used. Adsorbent prepared from onion peels is low cost. Though as compared to activated carbon, it removed less heavy metals, yet it was effective and low cost process. Concentration- time relationship was established by UV analysis. Removal percentage of metal was determined and the best conditions at which the low cost adsorbent will satisfactorily remove metal was identified. Onion peel adsorbent was prepared by collecting large amount of onion peels and decolorizing them by boiling them in distilled water for 3 hours. Then the decolorized onion peels were kept for drying in an oven at 80 o C for 2 hours. The dried peels were weighed and drying was continued until a constant weight of the dried peels was obtained. Then the onion peels were crushed in a home mixer to the minimum possible size. These were then stored in an air-tight plastic container. After this, trial and error method was carried out to identify the right amount of acid i.e. 20% H2SO4, 50% H2SO4 and 98% H2SO4 at which adsorbent was formed. The change in concentration over a gap of 10 minutes for the 29.5 ppm solution (chosen) was measured in UV spectrophotometer, 5 readings were obtained and a graph was plotted. FTIR and SEM analysis was done to confirm the formation of adsorbent. For the removal of heavy metal copper from copper sulfate solution, different sample solutions of 0.05 N, 0.1 N, 0.2 N and 0.4 N were prepared. Then certain parameters were fixed while one was varied.

The final objective was to find the removal percentage of heavy metal in each case and then decide upon the best conditions that will support heavy metal removal.

The onion peel adsorbent was successfully prepared. The conditions at which it could remove heavy metal copper effectively was from 200 ml of 0.2 N CuSO4.5H20, 2 g of adsorbent dosage and 800 rpm of stirrer run for 1 hour. The removal percentage of copper under the above conditions was 63.6 %. When we used market available activated carbon under similar conditions, the removal percentage was 82.4 %.

We concluded that onion peel adsorbent is effective for removal of copper metal from aqueous stream. The good adsorptive capacity of this adsorbent implied that it can be looked as an alternative to costly adsorbents like activated carbon, resins etc. Also this adsorbent is biodegradable because onion peels are easily available kitchen waste. Therefore onion peel adsorbent will have less disposal issues as compared to activated carbon. The removal percentage obtained is 63.6 % which is satisfactory. Making a few modifications can certainly improve the removal percentage value.

# CHALLENGES AND OPPORTUNITIES TO TRANSFORM THE ORANGE CITY- NAGPUR

- Shivani Hurmade 2nd year CE





PERVIOUS CONCRETE

DURGAM CHERUVU LAKE

10 years ago, Nagpur was a city with extreme climatic conditions, along with long hot and dry summers. Monsoons were much awaited. Nagpur now has highest temperature which reaches up to 49° C along with monsoons delayed by almost a month in 2019. There was extreme water scarcityand water cloggingthis monsoon. The major cause of all these problems was emerging of cement roads. Joseph Aspdin in 1824, who made a major breakthrough by creating artificial cement by burning ground limestone and clay together, invented **Portland cement**. Cement is a major source of *carbon dioxide* which gradually increases global warming. It absorbs heat in warm weather and releases it during cooler periods. This effect is known as 'thermal flywheel'. Cement does not allow water to seep down and the replenish the ground water level. According to reports, a total of 126 roads of length 123 km are being concretized. Amongst them,19 km has already been concretized under phase 1, which will undergo the drainage modification as mentioned in the reports.

Proposed solution is the use of 'pervious concrete' for the construction of streets, tree plantation to reverse the thermal flywheel effect and to facilitate rain water harvesting. Pervious concrete is a unique and effective class of material means to address important environmental issues and support green, sustainable growth. Pervious concrete is used because of its exclusive properties like permeability, flexural strength, shrinkage, density and durability and low comparative cost. It is more economical than cement concrete and we save nearly Rs 29 per cubic meter along with numerous advantages. Some of the advantages are: it supports local economies, is an alternative to costly storm water management methods, prevents the water accumulation problems, and supports the phenomena of water cycle. The beautification of the Durgam Cheruvu Lake in Telengana has utilized pervious concrete. Use of advanced materials like pervious concrete for the erection of streets to resolve conservational problems in Nagpur can be applied. NMC should incorporate the use of pervious concrete in further concretization of roads and over bridges. This can also be used as pavements in gardens and public parks on the other hand by use of pervious concrete also increase the durability of vehicle tires. The groundwater level will also increase, solving the water shortage problems.



Another significant problem in Nagpur is **solid waste** and the solution to this problem is **solid waste management**. Solid waste management is a term that is used to refer to the process of collecting and treating solid waste. As long as people have been living in settlements and residential areas, garbage or solid waste has been an issue. When a survey in Pandharabodi slums was conducted, it was found that out of every 10 children in the slums, absence of daily garbage collection facilities, insufficient number of vehicles and sweepers assigned per area, no awareness about separation of dry and wet garbage, use of polythene bags for collecting garbage, breeding of mosquitoes and spreading of water borne diseases due to waste. Solutions to these problemscan be door to door collection of segregated waste and setup of waste analysis plant, amino-manure process for wet waste and plasma-incineration process for plasticwaste.

For amino-manure process human hair can be used because it is one of the highest nitrogen containing (16%) organic material and it also contains Sulphur, carbon and 20 other elements essential for plants as compared to cattle dung which contains only 0.2-0.3% nitrogen. Biological decomposition 7-8 children suffer from diseases like diarrhea and viral fever. This is due to process of human hair is quite a slow process but it can also be chemically decomposed within few hours by hydrolyzing it at high temperature. The hydrolyzed solution which mainly consists of amino acid with some fatty acid and nucleotides can be used as liquid fertilizers after neutralization. Profit made in this process is nearly 600 per liter so this process is highly economic, feasible and environment friendly. Amino-manure process can be used to produce highly efficient and cheap fertilizer which can be beneficial for local farmers.

### PLASMA INCINERATION PROCESS

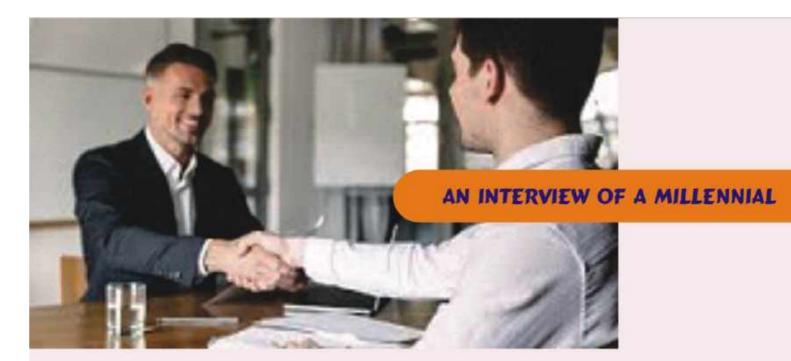
**Plasma-incineration process** involves burning of plastic waste at high temperature to produce electricity. The best part is that this plant can be set up even in densely populated areas. Low pollution, stable operation, safe and sound, high efficiency in power generation, ash recycling are its benefits. Thus, rather than using conventional methods, we should try to implement such innovative and scientific ideas to tackle such problems and to make this city and in turn this planet, a better place to live in.

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# Creative Section







(It is a nice sunny day. Mr. Z is waiting impatiently in a small well-lit conference room at a multinational organization. Ms. X, the interviewer, enters)

X: Good afternoon Mr.Z. It's great to have you today for a tete-a-tete. I'm X, the HR manager here and in-charge for lateral hires. Please feel comfortable.

Z: (keeping his phone aside which kept buzzing) Hello ma'am. It's so nice you've called me for this interview. I'm glad to be here.

X: The feeling is mutual. Welcome to our company. Can you please tell me something about you?

Z: I'm a major in mechanical engineering and minor in marketing. I've done a diploma course in Artificial intelligence. My last job was in a Fin-Tech company where I worked as a Risk Analyst. I like playing squash and in my free time I enjoy playing video games.

X: Well, that's an interestingly diverse profile (raised eyebrows and tight lips). To be honest, it is difficult for me to see how you fit in our requirement. What do you think makes the greater difference-Your work or your boss?

Z: I really appreciate such questions. To me, the job is of course a very important factor, but the right manager can make a great difference. I really think the manager has a lot to do with how a person fairs at a job. I don't want a helicopter, hovering over me and micro-managing my activities. It will be really great if I have someone who will be focused on growing together, who will be easy enough to give me the freedom to explore avenues while at the same time sees to it that my key performances are in a good shape.

X: Don't we all want a boss like that! We will try our best to get you someone who fits to the best of your measures. Just asking, was it your previous boss that made you leave your last job?

Z: Lol, Funny that you ask. Okay so, yeah, there were like various reasons I left that job.

X: Was it the pay?

Z: The pay was of course less. But when is it good enough!? What irritated me was the incompetence

X: Your boss's incompetence?

Z: Haha.. No. My previous job tolerated incompetence. My colleagues were lethargic and my boss didn't mind that all. It really ticked me off. My company has so much potential but the nonchalance was really keeping us tied back. It got frustrating for me to work there.X: Well, that's something new.

Z: Maybe, Also I didn't have a sense of purpose there...

X: Why? Was your job role not well defined?

Z: It very much was. I wish it wasn't so much. I enjoy doing cross-functional work. Moreover, I was raised to believe that I could change the world. I'm desperate for you to show me that the work we do here matters, even just a little bit. I'll make copies, I'll fetch coffee, I'll do all the grunt work. But I should see that it makes some real change. The bottom line is not my priority. My job should create some impact in the organization as well as my life.

X: But you worked there for only a year. Wasn't it too soon to ask?

Z: I don't know. At least my connections on Linkedin were doing some path-breaking work. Someone was creating a positive change in society by cleaning beaches. Someone was leading the march for women's rights. Another one of my college mate has become an influencer on Instagram and is travelling the world. My best friend joined a start-up and got involved in some really core work, creating a foundation for the business.

X: Woah! That's overwhelming. Even I hate my job right now (giggles).

Z: I don't want to do any of that exactly. All I am asking is make me feel that my work really counts, and I'll stick around for at least 5 years.

X: Well this generation is really frugal when it comes to commitments. I really don't get you millennials! You wish to change the world with your work and yet pound for flexible work hours and 5 days a week. You want the comforts of a 9-5 job but aspire to start-up just because you think it is hip. You talk about mental health on Twitter and seek validation of every aspect of your life on snapchat...

Z: Snapchat

X: Yes. You people really really confuse me.

Z: I wish it were simpler for you (giggles), but as a matter of fact it is. "Adults" look at us with presumptions. You patronize us because you have already stereotyped us in your minds. We want to be your partners in growth. We want to be considered more seriously. Maybe you have misunderstood our expectations. I want to make money, I really do, but what we want to make more is real impact.

X: Very well. So maybe you are not fit enough to be hired. Maybe we are not fit enough for you to join us, but can we come together and work in tandem to 'make an impact'?

Akshay Raje 2018 Batch CE



Farmer suicide, the most common topic known to all of us. But in spite of knowing, all of us ignore this!

So to make you realize the depth of this issue, I would like you to imagine something, suppose that you belong to a rural area, and your father is a farmer and your mother is a homemaker. You have two younger siblings. So all the load is on your father's shoulders. Everything was going fine before your village witnessed a massive drought! Your father's crops failed and now your family is facing economic troubles. So your father takes a loan from the bank. But in the next harvesting season, it rains massively and the crops fail again. Due to this your father is unable to repay the loan and your family faces financial crisis. During this your father comes to know that the government has made a policy to help the widows of the farmers who have committed suicide. According to this, the loans of these farmers would be cleared and their families would get compensation for their losses. So your father decides that he has no other option than committing suicide. Doing this would help your family! So what would you do? Would you allow your father to do so? But do you have any other option then?

You must be feeling sad and helpless right? But you were just imagining all this! This literally happens to people in real life! These are real stories! Real stories of India! I've seen this from my own eyes! People arrange a get-together at their homes and meet all their near and dear ones a day before committing suicide! When I think of all this I get shivers!

We never think about the stomachs of the ones because of which our stomachs are filled! We never think about our farmers!

As of 2018, in Maharashtra alone, more than 60,000 suicides had taken place, with an average of 10 suicides every day. Farmers commit suicide due to crop failure, debt traps and other such conditions. But these kinds of policies encourage them to do so!

Most of the policies focus on providing or repaying loans rather than helping the farmers increase productivity and income and have thus yielded the desired results.

Policy formulation is done without consulting farmers, food policy analysts or agricultural experts. Which leads to failures!

We need to understand our responsibilities and our duties! We are the future chemical engineers of our country! We are the youth of our country! All this will change only if we understand our responsibilities towards our farmers and our country! We can do a lot of things for them. We can change the quality of pesticides as chemical engineers. We can change the policies and improve their conditions. We can give them moral support!

And unless we do this and protect the backbones of our country, we cannot plan anything for the development of the country. Yes! Farmers are our backbones! They give us nutrition! They give us life! But what do we give them in return?! Suicidal deaths! Do they deserve to drink pesticides and hang themselves in return to what they do for us?!

### -Neha Vensiyani

1" Year CE



Difficult roads always leads to beautiful destination ...



The Taj Mahal of Agra is among seven wonders of world and undoubtedly a great architecture. An attempt was made to build a clone of Taj mahal. Result was not as great as Taj but can be called as mini taj. And it is in front of us as Bibi Ka Maqbara of Aurangabad. Often the term bibi is misinterpreted as wife but it is actually referred to queen begum. Maqbaras are Muslim Qabars which were built to entomb bodies to preserve the name of the dead. Bibi ka Maqbara was erected in memory of the Mughal emperor Aurangzeb's wife, Dilras Banu Begum. She was crowned with the title of Rabia-ud-Daurraini which means the modern-day Rabia. Due to Aurangzeb's long-term governorship of Aurangabad, bibi ka Maqbara was built here. However, most of the Mughal architectures are found in the north. Their capitals were in Agra and later in Delhi. But Bibi-Ka-Maqbara was one of the isolated Mughal monuments. And because of its resemblance with the great Taj Mahal, it began to be referred by many names as Mini Taj Mahal, Deccan ka Taj, the Poor Man's Taj and many more.

Mohammed Azam Shah who was the son of Aurangzeb is believed to be the one who commissioned this structure in memory of his beloved mother. You can also find this information written on the board of Archaeological Survey of India. However, there are many controversies over the ownership of Maqbara. Some say it is Aurangzeb who should be credited and some say it should be his son. But we will not trap into this and let us believe what archaeological survey of India says. There is a story which tells us how the idea to build a structure similar to Taj Mahal came into the mind. Aurangzeb was married to Dilras Banu Begum in May 1637 at the Agra Fort. She was the daughter of Shahnawaz Safavi. This marriage took place during Aurangzeb's first governorship of the Deccan which spanned 1636 to 1644. He came to the Deccan with Dilras Banu Begum in 1637. Then later in 1644, Aurangzeb's sister Jahanara Begum met with an accident. When Aurangzeb and his wife heard about the mishap, they immediately rushed to Agra. But they forgot to take permission of Shah Jahan who was the emperor of Agra. Because of which Shah Jahan sent Aurangzeb's son to Kabul and Kandahar as punishment. These two regions mentioned were considered difficult and challenging regions at that time. Aurangzeb and his wife were finally permitted to return to Agra in 1652. In the same year the masterpiece Taj Mahal was completed. They saw it and were mesmerised by its beauty. Dilras Banu Begum was so much in love with taj mahal that she persuaded her husband to construct a similar structure for her in Aurangabad. This time they took the Emperor's permission for this construction. It was then very important to take emperor's permission in the form of parwana or license. With this licence only the transport of building materials like marbles and red stone from Agra and Makrana was possible.

-OM CHATURVEDI

3rd Year CE



India is a country known for its versatile culture, traditions, its amazing people, mouth-watering food and just everything which makes it unique from other countries of the planet. Richness of religions and unique kind of art can be seen in magnificent monuments of blessed India. One can observe the amazing structures with each and every small and perfect details in them. There is a group of monuments at Khajuraho symbolising the power and charm of Hindu and Jain temples in the heart state of Madhya Pradesh, India. You will be amazed by the way this masterpiece is built in the Bundelkhand region of Chhatarpur District by the rulers of Chandela dynasty. Come let us take a ride together in the richness of monuments of Khajuraho.

Khajuraho monuments are located in the state of Madhya Pradesh, India in the Bundelkhand region in the Chhatarpur district which is about 620 kilometers southeast of New Delhi. Beautiful sculptures of these monuments are known for unique Nagara-style. There were originally 85 temples in Khajuraho. But We are now having only 20 temples that have survived the destruction of time. This place is very famous among the history lovers, travellers, students and backpackers across the globe. We are going to discover depths of these Khajuraho temples who have stood still against ravages of time. These temples are also one of the very famous UNESCO World Heritage Site known for their beautiful and fantastic stone carvings.

Name of the place, Khajuraho, has its own history of its nomenclature. Khajuraho, or Kharjura-vāhaka, is derived from ancient Sanskrit. Kharjura which is its first part used to symbolise date palm, and vāhaka, which is its second word which stands for bearer. In Desai states, Kharjuravāhaka means scorpion bearer which symbolises lord Shiva who wears snakes and scorpion garlands in his fierce form. With the declination of Chandela dynasty of central India, these group of temples were left under the cover of dense date palm trees for many years which gave its name Khajuraho.

Sir Alexander Cunningham, who was a British army engineer with the Bengal Engineer Group who later took an interest in the history and archaeology of Indian nomenclature. He grouped the temples into the Eastern group around Javeri, Western group around Lakshmana, and Southern group around Duladeva.

Khajuraho has the beautiful Vindhya range of mountains at its backdrop. There are group of sculptures in Khajuraho temples which are very famous and unique worldwide. They are the erotic sculptures depicting Kama Sutra representing the Indo-Aryan architecture. Their art itself glorifies the love of Chandela dynasty's for art and also reflects their passion and immense appreciation for the art in the land of Kama Sutra. Not only this but amazing structures of various lords has also been carved beautifully on the stones. The temples of Khajuraho were built between 950 to 1050 A.D. during the Chandela dynasty. It is also believed that at 1838, Captain T.S. Burt who was a British army engineer, rediscovered the monuments of Khajuraho.

-Om Chaturvedi

3rd Year CE

Quitters never win. Winners never quit.



"Buzz"! The alarm rang, as usual, doing its job at 7 O' clock in the morning. I woke up, went in the balcony to greet the fresh morning's new ray. With a broad smile and excitement inside, did my morning stuff and got ready for the ofice. Mummy cooked breakfast as usual and asked me to have it. All things were going as usual, but mark the date, there was something special in the vibe of the day. Last month on this date, I started my job as a junior assistant at a corporate office. So it means one month was completed and I was going to receive my first salary!

I don't know how it feels to get your reward after a month's hard work and was going to experience it soon. What will be your list of things you would do with your first salary? Well, the day went good. I came home early that evening. While on my way to home from office, I was just thinking about Mumma. She has always worked hard to earn money, nurture and educate us- me and my younger brother. Being a single mother, she never made us feel the emptiness of father. She always devoted her time for us. She is very fond of reading books. But being from a middle class family, she didn't get chance to educate further and got married early. Now that, I wanted to give her something from the money I earned, and books are the best thing to gift her. I went to the book store and purchased the books she always wanted to read. Got them packed in a nice paper. When I went home, she was doing her kitchen work. I suddenly hugged her from back, and placed the bunch of books infront of her. She opened the wrapped paper, a million worth smile spread on her face enlightening the room and that happiness glooming around seeing those books. I got that kick in my heart, I always wanted, like it skiped any beat or it beat faster than usual. Tears of happiness rolled down her cheeks when I placed my first salary in her hand. It was all worth and I am the output of her dedicated work, love, care, support and determination.

-Trupti Bhore

2nd Year CE

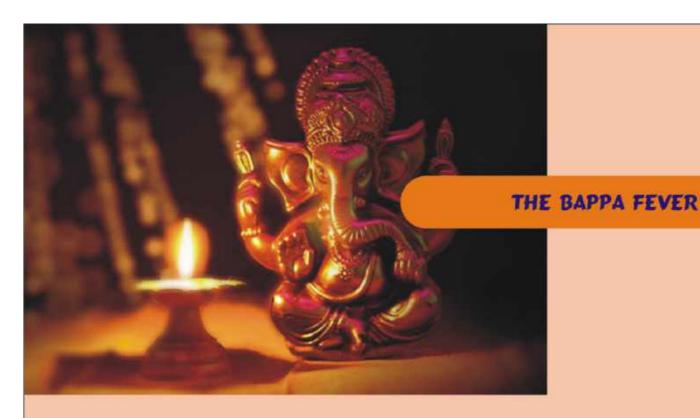


Open a search engine and as you type a query, take a note of how it predicts what you want before you even complete. Why always the personalized feed on social media accounts are so compelling? Well the only answer to this is the your data that the tech firms collect. Your extended body, your soulmate, the 'smartphone' takes notice of everything you do and this data is then pushed to a server where all this data serves to read through your mind and ascertain how you behave to different stimuli. And voila! your profiling is done. The ubiquitous word 'personalized' is a euphemism for 'profiling' today, as 'kleptomania' is for stealing. The Artificial Intelligence powered gadgets amuse us but their work is just to send feed according to our profile. With the algorithm becoming more precise, the polarization increases and gives rise to an echo chamber like feed on our social media accounts. These technology platforms that are promoted as the torchbearers of communication and exchange of thoughts have actually driven us far apart. What an irony!

The best minds hired by tech firms are not master psychologists but they know how to develop addictive products. There's nothing as such of psychology involved in such developments, but when you have a large amount of data points about anyone then psychology becomes redundant. But how do these tech firms monetize? If you are not paying for a service you are the product. This might seem too harsh. Well, your data fills their pockets. This data is used for targeted ads. Since data shows your leanings and interests, these firms are data mines and in a click millions can be targeted. The easy availability of our personal data makes us vulnerable to any kind of attack and manipulation. The weaponized ad technology impinges on your freewill. So the privacy of your personal data is important. The needle is also on the user for the privacy of their data. The whole discussion boils down to whether the users read the privacy policy before they jump on the bandwagon. But also the permissions that tech firms demand must also be kept in check. Never do we users pay heed to the letter that has an accept button coloured with blue and the decline in gray. In jiffy, we click accept and later regret. Well have you ever read one?

-Hamza Baig.

3rd Year CE



"Ganpati Bappa Morya, Pudhchya Varshi Lavkar Ya!!", to these cries I bid farewell to yet another Ganesh Chaturthi..... Going back in history, the festival was revived in the 19th century by famous freedom fighter, LokmanyaTilak, as a means to bring together and unite Brahmins and non-Brahmins during the colonial British Raj. What started off as a small public gathering spearheaded by a single man has now grown to become the heart and soul of Maharashtra. There is a certain vibrancy in the atmosphere at this time of the year. And why won't there be, after all our beloved Bappa is coming to bless us! From Lalbaug to our homes, Bappa never rejects an invitation from his devotees, gracing all of our hearts with his divine presence. It is the spirit of people, their devotion, which makes this festival so special, and I have observed countless examples which make me think so. One of my friends, along with her family, went to seek the blessings of Lalbaugcha Raja, in Mumbai, this Chaturthi, and they had to stand in queue for fourteen long hours before getting a chance to catch a glimpse of Bappa. But the moment they got to touch Bappa's feet, it was all worth it. A fourteen hour wait seemed nothing to them for this one moment of divine encounter. This year, we were blessed with a good amount of rain shower, which will hopefully carry us through till the next monsoon, provided we use it wisely! Let me share my experience, Ganesh Chaturthi is celebrated at my home as well. On the day of Visarjan, it was raining heavily, which we thought would dampen the mood of the day. But, we were wrong. There didn't seem to be much of a difference. Devotees on their way to the Visarjan, were busy dancing to the tunes of Dhol-Tasha, completely oblivious to the fact that they were drenched. The only difference was that Ganpati Bappa had to be carried under an umbrella to protect from getting wet! It's as if, for those few days, Bappa becomes a part of our family. Bappa's homecoming is celebrated with joy, while his departure leaves us with tears in our eyes and the hope to meet Bappa next year.

> -Trisha Dutta 2nd year CE

Some people dream of success, while other people get up every morning and make it happen.



### THE UNSUBTLE ART OF DISSENT

We live in a day and age where almost everyone breathing has a right to own an opinion and voice it if they choose. We might have been taking this for granted but generations of people before us have lived lives where they have been shamed, mutilated or even put to death for voicing their opinion. Although it took us almost ten centuries but thankfully we as a human kind have realised that we have to acknowledge every individual's right to think and right to speech. Now we have become acceptant of variegated ideas and are trying to inculcate them into our day to day lives. But, have we though? Have we really broadened the spectrum of our mindsets or just modernized the old narrow mentalities to suit the opinions of majority and invalidating those of the individuals. If we look over the past millennium we can clearly see how the 'politically correct' ideologies have transcended from being the opinion of an individual, like a monarch, dynasties, political parties, to opinions of the masses. Anyone holding an unpopular opinion is subjected to trial in the court of public opinion and needless to say, the jury is very much biased against the defendant. Public shaming was also a practice of punishment in forementioned medieval ages. So can we say that we are descending into the past. Hopefully, no is the answer. Dissent as described by Wikipedia is 'Disagreement with official or generally agreed ideas or opinions.'

But how can we popularize unpopular opinion? The sentence itself is an oxymoron! And the answer could be Humour or Satire. For hundreds of years artists have voiced their controversial, sometimes straightaway derogatory views in front of public under the tag of comedy and large demographic have accepted it gracefully and in good spirit. Even in the courts of Kings, jesters were appointed to lighten the atmosphere who often presented their witty outtakes on the day to day life which sometimes included the king himself. We have had great comedians like George Carlin who in his set lasting from an hour to two, presented his views on how the society forces everyone to be normal and suppresses the uncommon eccentricities. Looking back on his stuff, all the adulation that surrounds Carlin, some of his shtick now seems dated not because his content didn't age will but due to the fact that many of the battles he raged about so brilliantly have already been won. He showed that you can be blunt and harsh in your critiqué but if you are successful in making sense of your point, it will get across to the people. The best way to do it is to be blatantly honest about your opinion, being subtle about it won't make anything easier.

-Aniket S. Kalambe

2<sup>rd</sup> Year CE

Ambition is the path to success. Persistence is the vehicle you arrive in.

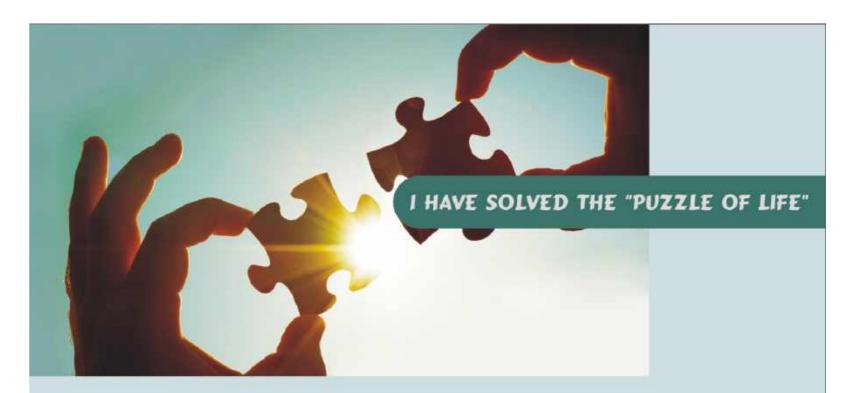


### WOMAN

Woman. Its a word too strong in itself, I guess this isn't used less often because people know the true power of the word. A woman isn't just a way to address a feminine being or a way to address a lady. Woman is a word of vigour, a word of competency, it's a word of utmost reverence and modesty. We call her by many names, give her many roles, define her in various characters and call her by different titles. The society tries to make her and break her down, tries to limit her reach and tries to make her efforts go void, but there is one thing the society can't take from her! It's her true identity as a woman because that is what she is, that is who she is. She's stronger than half the men she binds with, She's smarter than the people she chooses to talk to, she's more effcient and more competent than the people she chooses to work with, but she does all this and lives humbly with the utmost modesty. She lives like a human with a goddess in her heart, she serves the whole humanity with a queen in her soul. She does so much for us, but why do we stop her from living freely? Why do we put her in chains? And not let her thoughts run free, why do we not let her speak her feelings and voice her mind, all she's waiting for is her mind to be heard, to be felt and to be accepted, all she's waiting for is her chance to voice her emotions and tell the world what she wants, because that's the time she becomes her true self, that's when she flies away from the reaches of society and its cuffs and leaves everyone behind. She's not just a girl or a lady, she's not just a mother or a wife, she's not just a daughter or a sister, She is a Woman. She is not just a Person, she is a WOMAN.

> - Rahul Bhatkar 1st Year CE

You gotta stay hungry! Stay focused! And you better have heart! The heart of a champion!



I believe life is a very difficult puzzle but I have solved this puzzle with the help of mentors, teachers, audio lectures, reading books and talking with some wise successful people. I have figured out some words which may help you to achieve success and these are Think, Books, Hope, Courage, Start, Enthusiasm, Attitude, Patience, Perseverance, Action and Quotes.

Till now, whomsoever you consider, great minds of history are only because of their ability to Think. How high you will rise in your life will be determined not by how hard you work but by how hard you think. Books are full of wisdom and they change your thought process and the importance of thinking is just discussed above. Hope is an important factor. Everyone has problems in their life but most of the people quit when hope is missing from their lives. If the whole world is saving that there is something you can't do, but still you are the only one who is hopeful about yourself, that is enough.

Next very important word is Courage. Everything you aim for, is on the other side of your fears. When you just keep aside your fears with full courage and Start doing things, either you will achieve something and gain confidence or you will fail and gain experience. About 90% of people have ideas but they don't even try to start. So start doing things. Enthusiasm is required for achieving great things in life. If you do not have energy, you are not motivated and you start wasting your time. The enthusiasm which you have now, will not remain the same after a few years, and hence you can achieve many things when you are young. Youths are always more enthusiastic.

Next keyword is **Attitude**. Jeff Keller has his book named "ATTITUDE IS EVERYTHING" and this is one word which has various things in it. It involves how you think, how you behave, how you treat people, how you handle things and hence this is very important in life. **Patience** and **Perseverance** are two things that go side by side. If people keep mocking you that you can't do something, you need to hold your patience, work hard with perseverance and let your work and output answer them. You don't fail when you fall, but you fail when you refuse to get up. Keep on doing things you love, always carry your passion with you. Good things take time and one day you will surely achieve success.

The most important thing is how you think. But just thinking won't do it, you need to take actions. You need to convert your thoughts into reality to achieve success. Last word which I mentioned is **Quote**. Read quotes written by philosophers, psychologists, success experts, motivational speakers and great people. These lines contain deep meaning and have the power to change your life.

#### -HRISHIKESH MOHOD

4TH Year CE

You never know when a moment and a few sincere words can have an impact on a life.

## **Brother**



The man I call Brother
Is someone who is there,
The man I call brother
Is someone who always cares!!

The man I call brother
Can make me smile when times are blue,
The man I call brother
Is someone very true!!

The man I call brother
By choice, is my best of friend,
The man I call brother
Will be there till the end!!

The man I call brother
Is the blessing from God above,
The man I call brother
Is the brother that I'll always love!!

Shreya Agrawal Final Year CE



### STORIES

Everyone has different stories, Stories which they don't show Stories which we don't know.

But we ever bother to ask them?
Ask the causes of silence inside them
The reasons behind the distrust for trust in them
Reasons why they hate love!
No!
We rather judge them!
Stop being a crybaby! You are so inarticulate! You better grow up!

But now it's time to shut up!

If we can't help someone to move on,

We should stop judging them even

We should just stop making them feel so low

Rather, we should help them grow!

Neha Vensiyani,
 1st year CE

Sometimes adversity is what you need to face in order to become successful.



# DAD

You held my hand When I was small You caught me when I fell You're the hero of my childhood And my later years as well

And every time I think of you My heart still fills with pride Thought I'll always miss you Dad I know you're by my side

In laughter and in sorrow
In sunshine and through rain
I know you're watching over me
Until we meet again

-Ayush Solanke 1st Year CE



## Hellen Keller: The Fighter

She knew she could do it

But the world wasn't letting her stand

She never gave up, she worked harder and had endless hope in her mind

She wanted to reach her goal

To be successful, to achieve, to conquer the world

World said, "You are a girl and blind too you can never do it!"

But she replied," Yes I am a girl but a fierce one, I will stand and I will fight!"

- Renuka Kulkarni 1st Year CT

## HER WORLD



Away from the chaos,

She found her freedom in the fragrance of old, yellow, still the same pages of the books she once read

She was friends with people, people she never saw,

She empathized with humans she never met,

She rejoiced the success of those who never existed,

She witnessed what never happened,

And felt what never was her own feeling..

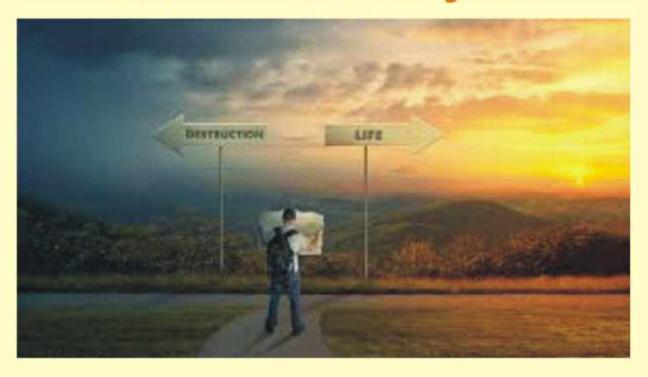
Who said reading was boring?

You see, she doesn't agree.

-Shreya Marar 3" Year CE

A goal properly set is halfway reached.

# Life- I choose you



On some griefy nights
when sufferings surround me,
I don't sit alone and cry,
But rather choose to overcome them.

In this game of uncertainties,
Even if I fail hundred times,
And there seem no chance sat hundred and oneth
I don't set back like a loser,
Rather try hard every new chance
Knowing one of them will surely loose!

In the hardships and failures
When they hit me one on other,
I don't quit,
Rather turn down those failures into lessons.

When nothing goes right,
I don't complain over the problems
Rather seek for the solutions,
Because life ,you didn't choose me, I choose you!

-Trupti Bhore

# The Rainbow People

Every person has different colours
Colours like a rainbow
But he shows only few of them
He shows only those through which people would accept him
He shows only those through which people would like him
And hides those which are bitter truths about him

But then how do we see those colours which are hidden?

How do we know and understand them if their true colours are hidden?!

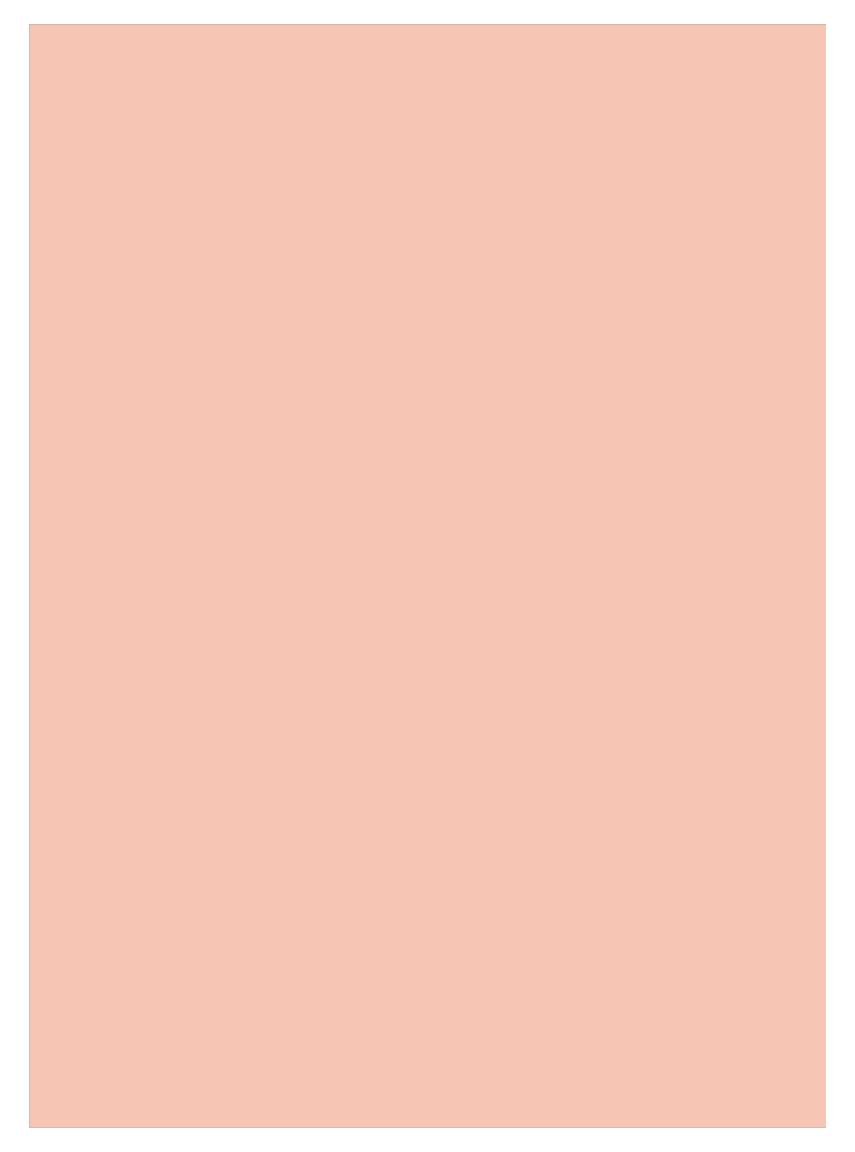
Just as the rainbow shows up in scorching sun,

These colours are seen when we see difficult times, the times when we need help, the times when we are in confusion, and the times when we face social distortion!

Neha Vensiyani 1st year CE



We must embrace pain and burn it as fuel for our journey.









## अच्छे दिन

ईश्वर खूब तेरी कलाकारी कही करोड़ो के घोटाले कहीं दो वक्त की रोटी की लाचारी।

दो बूँद पानी को तरसता किसान स्विमींग पूल में मस्ती करता नौजवान चादर में लिपटी, सिसकती है गरीबी मखमली गद्दो पर सोती है कुत्ते की खुशनसीबी।

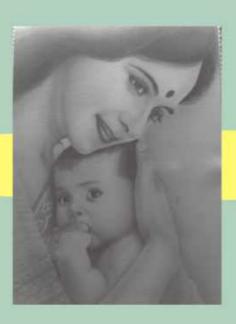
किटी पार्टी में मस्ती करती शहजादियाँ मजदूरी के बहते पसीने की गवाह वह वादियाँ अनाज की कालाबाजारी गुनाह के तरफ बढ़ती बेरोजगारी।

> तेज़ रोशनी की तलाश है। अच्छे दिनों की आस है।

> > -Bhushan Belkhede

3"Year CE

एक सकारात्मक क्रया के लिए तुम्हे एक सकारात्मक दृष्टरि खनी होगी।



## माँ का प्यार

एक ओर माँ का प्यार दूसरी ओर भारत माँ का प्यार है। जीवन जो वतन के काम ना आ सका, वह जीवन बेकार है, सरहद पर बंदूक लिए याद आता है माँ का दुलार है, पर गम नहीं अकेलेपन का, साथ मेरे फौजी यार है, एक ओर माँ का प्यार दूसरी ओर भारत माँ का प्यार है।

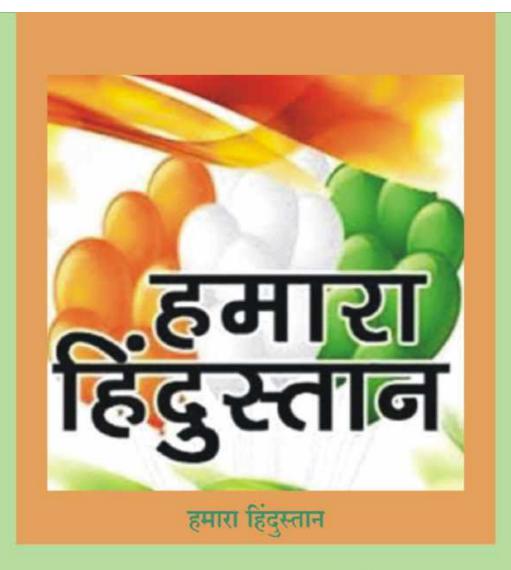
घर के सामने से जा रहे डाकिया से पूछती वह हर बार है, घर में बैठी माँ को बस बेटे की एक चिट्ठी का इंतजार है। दीवार पर टंगी बेटे की तस्वीर वो निहारती बार-बार है, एक ओर माँ का प्यार दूसरी ओर भारत माँ का प्यार है।

भारत की भूमी का ऋण तो अदा कर, दिया है मैंने माँ को उपहार यह जीवन माँ ने दिया है मुझे, है यह माँ का ही उपकार, सच्चा योद्धा मै नहीं, वह माँ का नेयोचार है, एक ओर माँ का प्यार दूसरी और भारत माँ का प्यार है।

वतन के प्रति हमें शिष्टाचार है, वतन के हित में हम हर संघर्ष के लिए तैयार है, बस यही कुछ शब्द मेरे जीवन की सुस्थितीका सार है, एक ओर माँ का प्यार दूसरी ओर भारत माँ का प्यार है।

> Vishal Nagpure 1<sup>st</sup> Year C.T.

इस बात मतलब नहीं है कि तुम कितनी धीरे चलते हो जब तक तुम रुकते नहीं।



देशभक्ति की पावन गंगा बहती रहती है।
युवाशक्ति के तट बैठा हमारा हिंदुस्थान है।
ऊर्जा का तो परबत है ये, यही सेना की ढाल है
जनहित का ये चिंतन करता, चलता हिंदुस्तान है।
मंजील अपनी ठान ली है, जुनून अपना जान लिया
जाति-धरम का भेद ना करता, हमारा हिंदुस्तान है।
तन-मन अपना अर्पित करता, करता यह अभिमान है
प्रतिभा अपनी कस के बैठा, हमारा हिंदुस्तान है।
लोकतंत्र में चिंतन करता, रखता मुकुट की शान ये,
शत्रु के बल पर चुनितन करता, लढता हिंदुस्तान है।
आखरी दम तक लड़ता रहता, सिर कभी ना झुकाता ये,
आज़ादी का जशन मनाता, हमारा हिंदुस्तान है।

- Chakradhar Raut

I" Year CE

## शायद .....मैं बच जाती माँ



काश उस दिन स्कुल ना जाती, तो मैं बच जाती माँ काश उन दरिंदो के हाथ न आती, तो बच जाती माँ।

चलते चलते पैर मेरे दुखने लगे थे, बरना उस रस्ते से मै क्युं आती माँ, बैठ जाओ गुड़िया घर छोड देंगे, काश उस लफ्ज़ के बहकावे में मै न आती माँ।

बचपना ही तो था मेरा, ये जाल कहा समझ पाती माँ; काश उन दिरंदो के हाथ न आती, तो मैं बच जाती माँ। कपडे मेरे फाड़ दिये थे, जब तक मैं कुछ समझ पाती माँ; मार पीट कर हाथ बाँध दिये मेरे, इससे पहले कुछ कह पाती माँ। चार चार दिरंदे नोच रहे थे, तू ही बता मैं कैसे खुद को बचाती माँ, चिल्लाई तो मैं बहुत थी, पर जंगल था किसे बुलाती माँ।

सारी रात प्यासा रखा मुझे, आँसूओं से भी कब तक काम चलाती माँ, मुँह में भी कपड़ा भर दिया था मेरे, बता कैसे तुझे बुलाती माँ। खून नसों में ही रुक गया था मेरा, बस हर पल तू याद आती रही माँ, तुझसे बहुत दूर जा चुकी थी, मैं जब तक उनकी हवस मिटाती माँ, शायद उस दिन स्कूल न जातीं, तो मैं बच जाती माँ।

> Shreya Agrawal 4th Year C.E.

चिंता उतनी करो की काम हो जाएं, उतनी नहीं की जिंदगी तमाम हो जाएं।

## मै अपने देश के लिए जी रहा हूँ



मैं अपने देश के लिए जी रहा हूँ देश के हर वार अपने सीने पे ले रहा हूँ।

शपथ ली है मैनें अपने वतन से, कि उसकी रक्षा मै करूंगा। अगर जान भी देना पड़े तो, उससे मै नहीं डरुंगा।

> मरते दम तक देश कि रक्षा करता मै जाऊंगा। बाद मरण के कफन से उठके फिर मैं आऊंगा।।

> यह वतन सिर्फ मेरा नहीं, तो यह भी है तुम्हारा। इसकी रक्षा करना एक जैसे फर्ज है हमारा।

अगर मैं अपने देश के लिए मिटूंगा, तो लाखों लोगों कि आवाज बनके फिरसे कही ना कहींसे उठुँगा।

> वतन के लिए शहीद होना यह मामुली नहीं खुशी यह किस्मत वालो को मिलती हैं।

जो अपने वतन से प्यार ना करें, यह उसकी सबसे बड़ी बदिकस्मती है, यह उसकी सबसे बड़ी गलती हैं।

- Chakradhar Raut

1" Year CE

इंतजार करने वाले को उतना ही मिलता है जितना कोशिश करनेवाला छोड देता हैं।

### प्यार



जब कोई पूछे प्यार क्या है, तब मैं बोलू जब दादी पूछे आज एक रोटी कम क्यों खाई जब दादी ढेर सारे काजू किशमिश डांट के खिलाए जब दादी इतना सा बुखार आने पर मम्मी को चिल्लाए जब दादी मेरे आने की खबर सुन दौडी गेट पर आकर खड़ी हो जाए जब दादी अचानक से एक गाल पर पप्पी मांगे और फिर जब कोई प्यार के बारे में मुझझे पूछे तो ऐंसे हजारों अलफाज़ मेरे लबों पर आए तो वो मेरे लिए प्यार है।

> -Om Chaturyedi 3rd Year C.E.



## यारी

थोड़ी अलग सी है हमारी यारी

ना जाने कब शुरू हुई

और ना जाने किन किन रास्तों से होती हुई
ले गई हमें ये हमारी यारी
यूं तो स्कूल में बस्ते भर खुशियाँ हर दिन बटोर लिया करते थे साथ
और अब उन पलों को वापस लाने की कोशिश हर बार छोड़ देती हमें
खाली हांथ यारी थोड़ी अलग सी है हमारी यारी

ना जाने कब शुरू हुई
और ना जाने किन किन रास्तों से होती हुई
ले गई हमें ये हमारी यारी

फिर ना जाने कहां कहां भटकते रहे उन बस्तों को ढूंढ़ते आखिर में घर लौटने को दिल को समझा लिया करते। नहीं मिलते बार बार ऐसे सितारे फिरते फिरते सही कथा किसी ने 'पुराने के साथ बैठक नहीं पुराने किस्से जिया करते है।

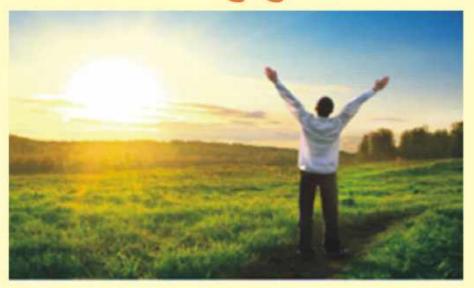
हम भी हमारे नए दोस्तों से उन लमहों का जिक्र बार-बार कर लिया करते है।

माना कि हमारे बीच अब ये कैरियर की दौड़ आ गई है पर ये दिलों के धागे अभी भी सलामत है और ना जाने ..... हमारी यारी।

> -Om Chaturyedi 3rd Year CE

भाग्य भी सहसी लोगों का ही साथ देता है।

#### अपनी वाली मुस्कुराहट



आखिर कुछ लोग छोट़ी छोट़ी चीजों में भी खुशी ढूंढ ही लेते हैं। जैसे कि वो काका जो रोज मुझे मेरे घर आते वक्त दिखते है, यूं, तो उनकी जिदगी बड़ी घिसी पिटी सी थी पर जब उन्होंने एक इयरफोन लिया तब तो मानो चिड़िया से चहकने लगे।

अलग ही रौनक आ गई थी उनके चेहरे पर आजकल वो उसमे एफ एम के गाने जो सुनने लग गए हैं। अब तो फोन कॉल में भी दरों गुफ्तगू करते पाए जाते हैं। मेरे दादा भी पीछे नहीं है इस दौड़ में।

उन्हें ग्रंथों के बीच ना जाने ऐसी कौनसी महक बांधे रखती, बेहद खुशी मिलती है उन्हें कला,देश-विदेश, धर्म इत्यादी के ऊपर पढ़ने से।

और बातों बातों में दीदी को भी कहानियां सुनाते रहते और इसी में हमारी दादी अपनी खुशी ढूंढ लेती।

रही बात मेरी माँ की तो शायद सारी माँ की यह वजह तो होती ही होगी

उनको अपने हांथ के खाने की महक से जादू बिखेरना बड़ा पसंद है। और गर पापा तारीफ कर दें तो मानो उनकी खुशी की सीमा ही ना हो। कितना अच्छा लगता है ना यूं छोट़ी छोट़ी चीजों में खुशिया ढूंढ पाना चाहे जिंदगी में ये गमो की लड़ी क्यूं ना लगी रहे ऑक्सीजन की तरह होते है ये किमती पल जिनमे हम हमारी "अपनी वाली मुस्कुराहट" ढूंढ ही लेते है।

> -Om Chaturvedi 3" year CE

अपने दिल की सुनिए, उसे पता होता है कि आप क्या करना चाहते है।

#### ये कैसी अमीरी है

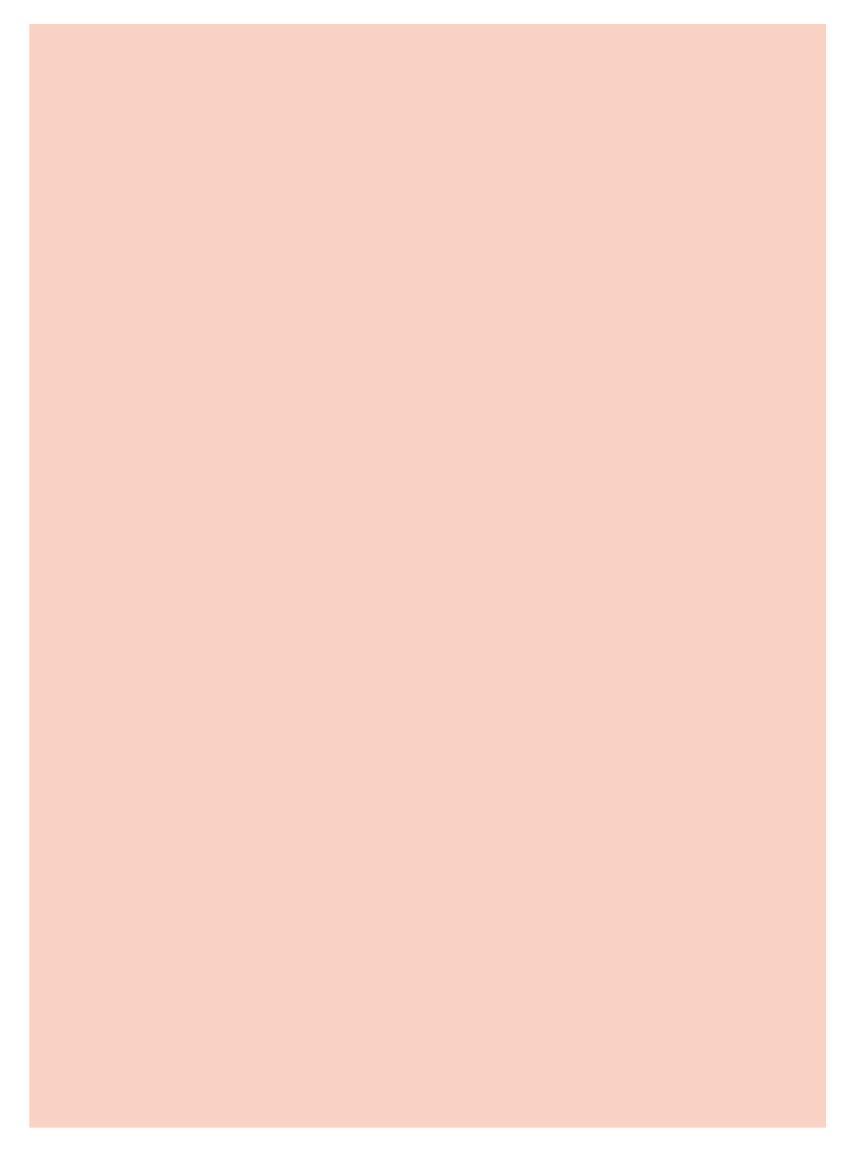


अमीरों की कलाई पर, महँगी घड़ी का प्रभाव देखा है, इनकी बेचारगी में हमने, समय का अभाव देखा है। हजार बारह सौ रूपये की थाली, अमीरों के लिए है, गरीब की दाल रोटी पर हमने, जीवन का दाव देखा है। कभी देखा है अमीरों के चेहरे पर, इंसानियत का रंग, गाँव में हमने हर चेहरे पर, अपनेपन का ताव देखा है। गरीब दो जौ की रोटी खाकर, चैन की नींद सोता है, हमने अमीरों की नींद पर, दवाओ का तनाव देखा है। चले आना बाहें फैलाकर तुम, जब शहर में दम घुटने लगे, हमने शहर से ज्यादा, स्वच्छ और खुशहाल गाँव देखा है।

-Vedant Adhau

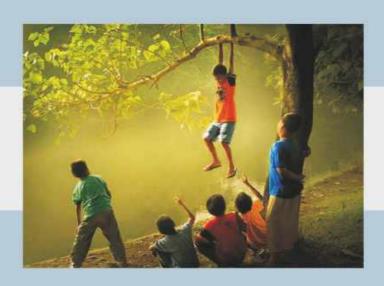
3" Year CE

जिनमें जिने कि लालसा है, उन्हें हर चीज जीवनवर्धक नजर आती है।









## हरवली ती सुट्टी

वर्गात शिक्षिका शिकवितांना मन लावून आम्ही ऐकत होतो, शिपाई काका वर्गात येताच वर्गात पार गोंधळ उडतो

'सुट्टी- सुट्टी' ओरडत वर्गात आमच्या कोलाहल असतो, उद्या 'सुट्टी' म्हटल्यावर अख्या वर्ग आनंदात नाचतो.

'आई, उद्या आम्हाला सुट्टी आहे' ऐकुन आईच्या डोक्याला ही ताप होतो, कारण आपल्या सुट्टीच्या दिवशी तिलाच कामाचा व्याप होतो.

अभ्यास न करता, सकाळापासून रात्री दमत पर्यंत खेळणारे आपण झोपेत उदयाही सुट्टी असल्याचे स्वप्न बघतो, 'ऊठ बाळा' शाळेला उशीर होईल' असे ऐकताच स्वप्नहीं तशीच लोप पावतो अनपेषित मिळालेली ती सुट्टी अगदी मन प्रफुल्लित करायची, त्या छोट्याशा सुट्टीतही गड जिंकून आल्याची मज्जा असायची

आता महिन्याची सुट्टी मिळाली तरी,
मिळालेल्या त्या सुट्टीचा आनंद नाही,
कारण WhatsApp Group वर आलेल्या
Message वर react करायला आपल्यालाच वेळ नाही.
परिवर्तनाच्या ओघात 'शिपाई काका' ही
WhatsApp ने पुर्नस्थित झाले,
अनपेक्षित मिळणाऱ्या सुट्टीच्या बारसे होऊन
निश्चित झालेले common bunk ठरले.
अनपेक्षित सुट्टीचा आनंद
common bunk ने हिरावून घेतला,
आणि सुट्टी-सुट्टी ओरडणारा वर्ग
स्वतःच मनसोक्त सुट्टया ठरवू लागला.

विनित पारवे ³Year CE

जिनमें जिने कि लालसा है, उन्हें हर चीज जीवनवर्धक नजर आती है।

#### स्वप्न



स्वप्नमय ही दुनिया दुनिया ही गोल, स्वप्न जरी मोठे तरी संघर्ष मात्र किरकोळ,

म्हणतात लहान स्वपने असणे हा गुन्हा मोठा, स्वपन जेवढ मोठा संघर्षही तेवढा मोठा

ज्यांना स्वप्न पहायचं असतं त्यांना रात्र लहान असते, आणि ज्यांना स्वप्न पुर्ण करायचे असते त्यांना दिवस लहान असतो.

> स्वप्नातून परत यशाकडे जाताना संघर्षाची हवी साथ, प्रयत्न आणि सातत्य यांनी अपयशावर करता येते मात

स्वप्नामध्ये जगताना कधीकधी जगणं विसरून जातो, मात्र माझं स्वपनचं मला जगण्याचं गुपित सांगून जातं.

माहिती आहे मला, स्वप्नामध्ये असतांना परत कश्याला मी मुकलो, उडता उडता पडताना निदान चालणं तरी शिकलो.

> स्वप्नाबद्दल बोलताना शहारतात माझे पाय, एकटा एकटाच विचार करतो स्वप्न माझे काय...? भूषण बेलकेडे

> > भूषण बेलकेडे Final Year C.E.

### थोरला भाऊ



घरासाठी, भावंडासाठी, थोरला भाऊ झिजत असतो, जबाबदारीच ओझे वाहत, उन्हा-पावसात भिजत असतो.

कोड कौतुक, हौस मौज, वाट्याला कधी येत नाही, आयुष्य सारे कष्टांमध्ये खसता खात संपून जाई

बाबा नसताना बाबा होतो, कधी मायेची माऊली होतो, तुमची आमची काळजी करत, उन्हामधली सावली होतो

तयाचे झिजणे, तयाचे राषणे, आपण थोडे जाणले पाहिजे, थोरल्या भावाचे मोठेपण, मोकळ्या मनाने मानले पाहिजे.

> अजयकुमार शिरूरे 3"Year C.F.

जिन में अकेले चलने का हीसला होता है, उनके पिछे एक दिन काफिला होता है।



## विश्वास

देवासमोर उभा होतो, हताश मी हात जोडून डोळ्यामध्ये पाणी होते, मनातून गेलो पूर्ण मोडून।। मी म्हणालो, देवा काय कर कळत नाही, प्रश्नाचे उत्तर मिळत नाही...।। देव म्हणाला विश्वास ठेव सगळेच रस्ते बंद आहेत, दिवे मंद आहेत....। देव म्हणाला विश्वास ठेव आज अस वास्तव आहे की. आशेचा किरण नाही. उद्या काही छान असेल. असा आजचा कृष्ण नाही...।। मी म्हणालो, कशावर मी विश्वास ठेवावा. जगामध्ये विश्वास आहे...? तुझ्याकडे काय पुरावा...? शांतपणे हसत देव म्हणाला, पक्षी उडतो आकाशात...। आपले पंख पसरून...। विश्वास असतो त्याचा. खाली न पडण्यावर...

मातीमध्ये बी पेरतो, रोज त्याला पाणी देत. विश्वास असतो तुझा रोप जन्म घेण्यावर... बाळ झोपते खुशीत आईच्या कुशीत, विश्वास असतो त्याचा तिने सांभाळून घेण्यावर.... उद्याचे बेत बनवतो रात्री डोळे मिटतो. विश्वास असतो तेव्हा पुन्हा प्रकाश होण्यावर....। आज माझ्या दारी येऊन आपलं सगळी दखः घेऊन विश्वास जगव मनात परिस्थिती बदलेल कृष्णात नकळत तुझ्यासमीर असा एक कृष्ण येईल, ज्याची आशा सोडली होतीस स्वप्न खरं होईल म्हणून... सगळे रस्ते बंद होतील तेव्हा हा फक्त विश्वास ठेव. जिथे संपते मर्यादा तुझी, तिथन साथ देतो देव...

> आवयकुमार शिस्तरे 3" Year C. E.



## काळजातलं Confusion

सौंदर्य कि अंतःकरण पाहावं? दुःखानंतरच सुख कि सुखातला आनंद? अध्यात्म कि विज्ञानाची जोपासना? परिक्षेतील गुण कि जगण्यातला शहाणपण? वरील दोन्ही पैकी एक कि दोन्हींची सांगड?

> -गजानन मुंधे 1° Year C.E.

कारण सांगणारी लोक यशस्वी होत नाही.. आणि यशस्वी होणारे लोक कारण सांगत नाही



## जीवन

'खरं तर जीवन म्हणजे काय?''
या प्रश्नांचे उत्तर कधी मिळालेच नाही, कधी कधी वाटते ''जीवन'
म्हणजे सुःखाने भरलेले आनंदाचे क्षण तर कधी ''दुःख'' आणि
''वेदनांनी' भरलेले या डोळ्चातील अश्रू।। या जीवनात प्रत्यक्ष
त्याच गोष्टी आठवतात ज्यांची आठवण नकोशी असते, तर मग त्याच
आठवणीत स्वतःला गुंतवून त्याचा त्रास का सहन करून घ्यायचा,
जेव्हा सुःखाचे दरवाजे शोधणे हे आपल्याच हाती असते! खर तर
''आयुष्य'' म्हणजे स्वतःच्या विचारांनी घडवलेले एक सुंदर क्षण
आहे!!

-दिक्षा गौपले 1"Year C.E.

नाही हा शब्द तुम्हाला ऐकु येत नाही तो पर्यंत सगळे काही शक्य आहे



#### कधी समजतच नसतं...

मन का बरं असं असतं जे आहे ते कधीच मानत नसतं जे नाही त्यामागंच धावत असतं

आयुष्याच्या अथांग विश्वात स्वप्नाचं इवलसं घरटं बांधत असतं विचारांच्या वादळांनी घरटं कोलमडून जात असतं हे मात्र कधी कळलेलंच नसतं

यश अपयश नाण्याच्या दोन बाजू माहित असतं, मन मात्र तरंगत नाणंच मागत असतं।। तरंगणार नाणं कधीतरी खाली पडतं हे मात्र कधी समजत नसतं।।

गुलाबांच निखळ हास्य हवं असतं पण काट्याचं बोचणं मात्र नको असतं काट्यांशिवाय गुलाब क्षणभंगुर असतं हे मात्र कधी स्विकारतच नसतं जेव्हा आयुष्याचं गमक उमगलेलं असतं मागे वळून पाहिलं तर जीवनाचं नाटक संपत आलेंलं असतं....

स्वप्नांचे घरटं पुन्हा बांधण सहज शक्य असतं, पण आता निवाऱ्याविणा जगणं जमलेलं असतं पण आता निवाऱ्याविणा जगणं जमलेलं असतं...

#### अजयकुमार शिरूरे

2rd Vone C.F.

## कोण सांगेल



उन्हाळ्यात पावसाळा आणि पावसाळ्यात उन्हाळा। असं का होतं कोणी सांगू शकेल मला।। कुणी तोडतात झाडं कुणी तोडतात पहाड। सोडल्या तुम्ही निसर्गाशी करणे लाड।

केली तुम्ही तपस्या निसर्गाची भंग। म्हणूनच तर बदलला या निसर्गाचा रंग।।

त्या काळी होते, त्या काळी होते, मोठे मोठे जंगल। सगळीकडे पडलेलं होतं सुख, शांती आणि मंगल।।

> पुर्वी निसर्गाशी होता पुर्वजांचा लाड। परंतु आता परंतु आता कुणी तोडतात झाडं आणि अन कुणी तोडतात पहाड।।

> > Sagar Dandare

Ist Year C.T.

मोठी स्वप्ने पाहणारेच मोठी स्वप्ने सत्यात उतरवतात

#### भीती घड्याळाच्या काट्यांची

वाटते भीती त्या घड्याळाच्या काट्यांची क्षणात पण नकळत चुकी होण्याची बघता शुन्यात जेव्हा विसर पडते तयांची।।

जरी ते फिरतात गोल गोल, घेऊनी सोबती अखंड भूगोल,

लेकरांच्या भविष्याचा करतात उचित तोल, भव्यदिव्य उदंड प्रचंड असतात त्यांचे मोल, भूत साठा असला जरी सखोल, तरी आमची लेकरे फिरतात तयांचे सारखी गोल गोल।।

मग कधी विचार करतो ते काटे नसते तर, तासनतास निघाले असते भराभर, भूतकाळाचा विचार करतो सोडून मोकळे कर जगावेगळया जगतातही नव्हते त्या काट्याविना घर।।

पण ज्यांवर काटे प्रसन्न झाले ते तर सुखाचे धनीच झाले, पण कुणास ठाऊक, त्याच्या शापामुळे दारिद्रयाचे सावट दुप्पट असेल का झाले।।

पुन्हा, वाटते भीती त्या घड्याळाच्या काट्यांची अचानक मृत्यूला सामोरं जाण्याची एक पाऊल पुढे मृत्यू उभा असतो या काट्यांना ते ठाऊकही असते पण मरण अटळ आहे. हे त्यांनीच सिद्ध केलेले असते. स्वप्नात येऊन माझ्या काटा मला म्हणतो अरे माणसा. काय घेऊन आलास काय घेऊन जाशील कर्म केले तर सर्वांच्या मनात उरशील पाप केले तर त्यांच्या मनात कुजशील।। झाले गेले अदृश्य झाले. सद्गुणांची फळ झाले, द्रगुणांचे विघटन झाले, उठ माणसा जागा हो, नव्या युगातील संस्कृतीचा तू माणुसकीचा धागा हो भवितव्याचा विचार करुनी या भुतलाचा गाभा हो उठ माणसा जागा हो...

> चक्रधर राऊत I"Vear C.E.



## शेतकरी



जो देतो जगाला आधार काय लिहिल शेतकऱ्यांच्या भाळावर?।।

> घेऊन खांद्यावर नांगर रात्रंदिवस राबतो शेतावर करतो उपकार जगावर।।

सरकारने करावा विचार भारनियमाचा त्रास फार मात करतो दुष्काळावर।।

वाढतो कर्जाचा बोजा फार होतो परिणाम मनावर आत्महत्येचा करतो विचार।।

होतो जीवनाचा अंधःकार नेहमीच का सोसाव्या कळा? कोणीतरी लावा जिव्हाळा।।

> अजयकुमार शिरूरे 3"Year C.E

यक्षाकडे नेणारा सर्वात जवळचा मार्ग अजून तयार व्हायचा आहे



## एका मुलासाठी

एका पोरीसाठी केल्या त्याने पाच पाच पोरी, काऊन त्यांना समजत नाही ही एक गोष्ट खरी,

त्यांच्या डोक्यात भरला आहे असं का भुसा, काऊन त्यांना कळत नाही मुलगीसुद्धा सांभाळते बापाचा वसा.

मुलीला का समजतात हे डोक्यावरच बोझ, जन्मापासून मरेपर्यंत ती सुद्धा सांभाळू शकते आई वडिलांचे ओझं

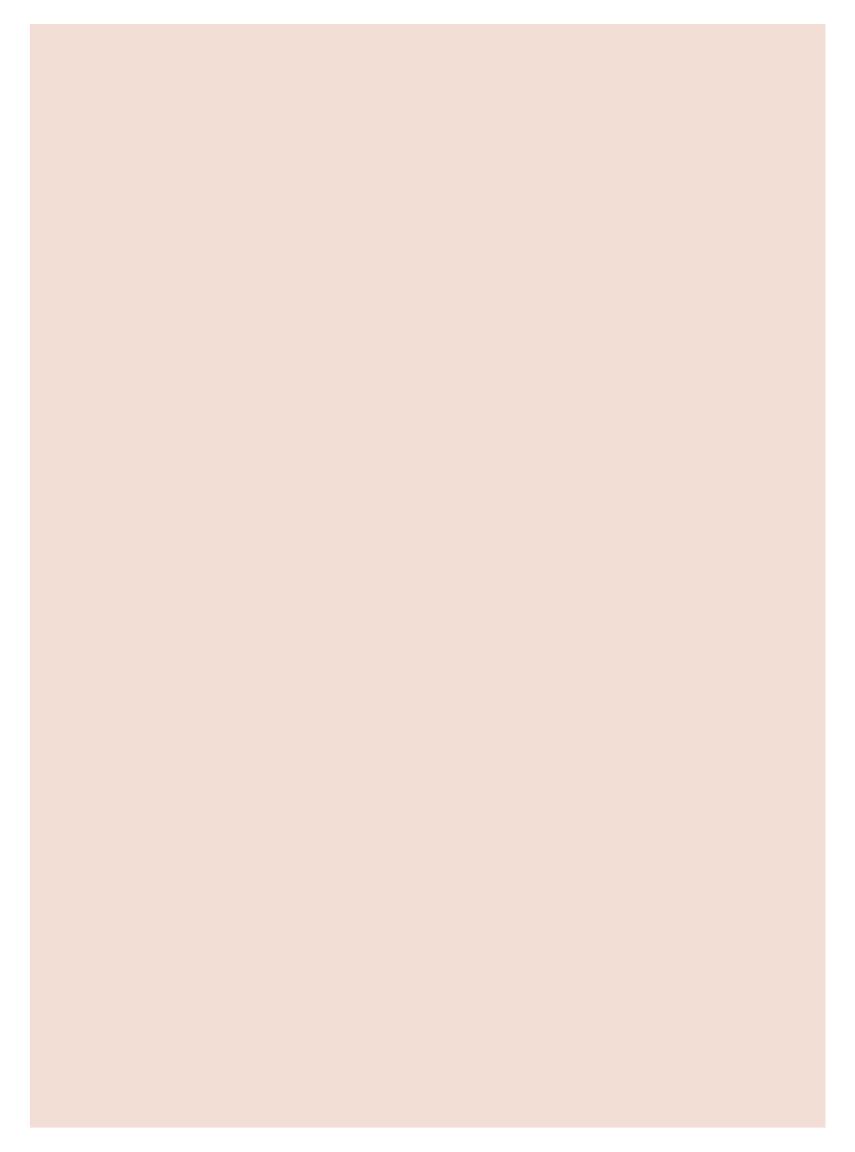
> मुलीला का समजताय तुम्ही मुलापेक्षा कमी, मुलापेक्षा मुलगी असते प्रेमाची ती धनी,

लग्न झाल्यानंतर मुलगा घराबाहेर काढतो, तरीही घराबाहेर मुलगी वाट तुमची पाहतो.

माझ्या मते मुलापेक्षा मुलगी असते मोठी, मी तिला नमन करतो पुन्हा कोटी कोटी

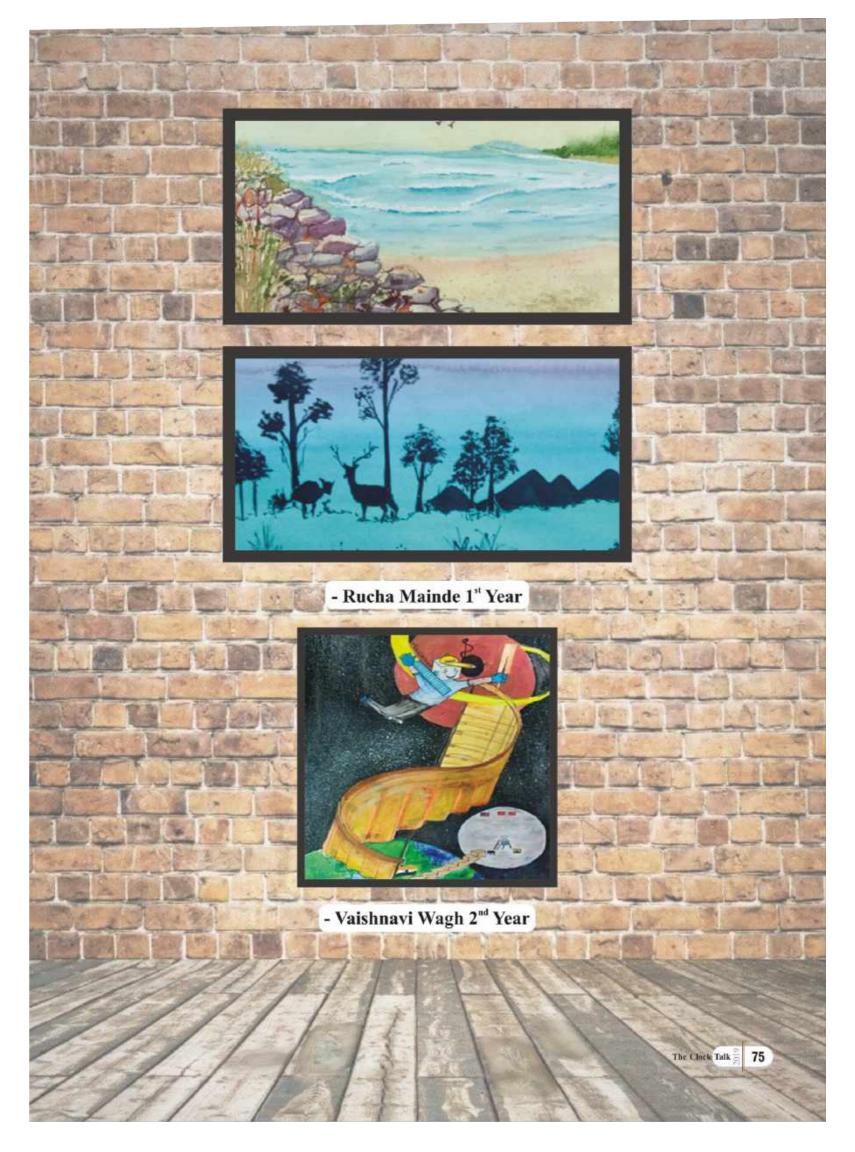
> Sagar Dandare 1<sup>st</sup>Year C.T.

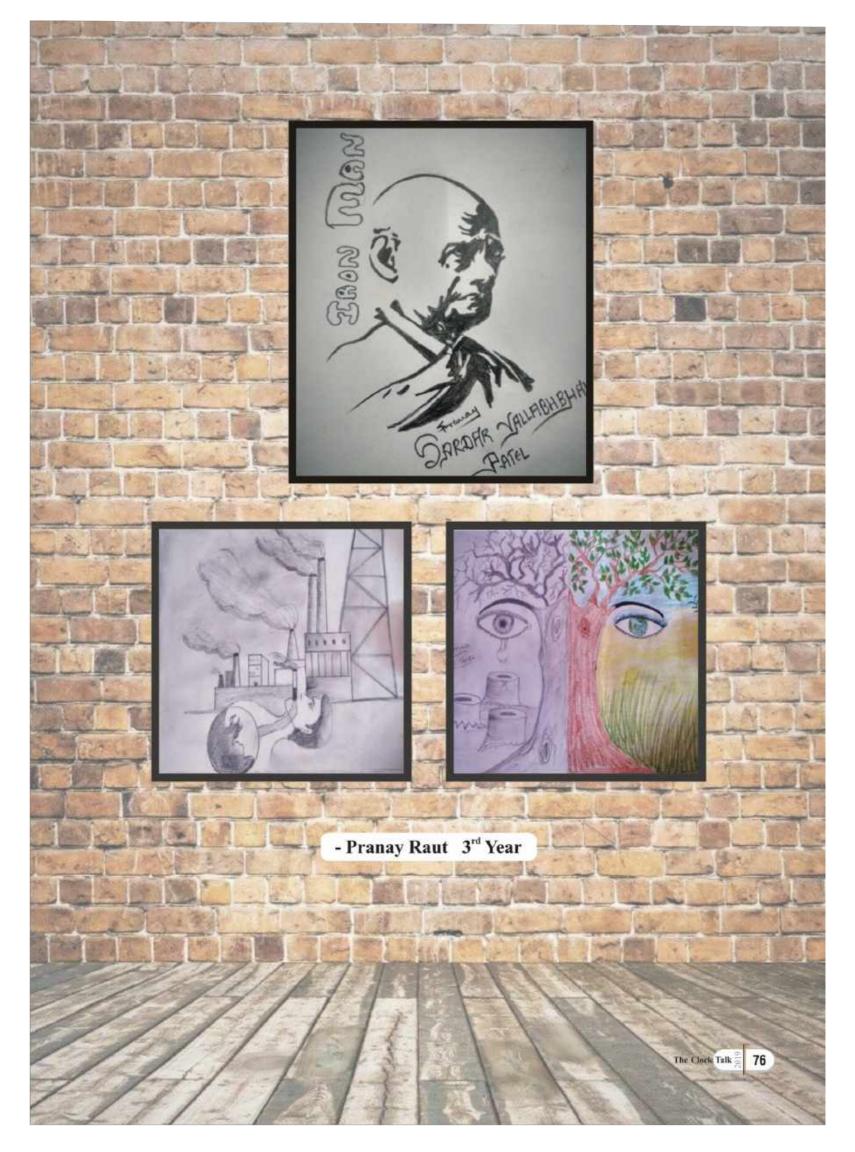
बोलुन विचार करण्यापेक्षा बोलण्या आधी विचार केलेला करा

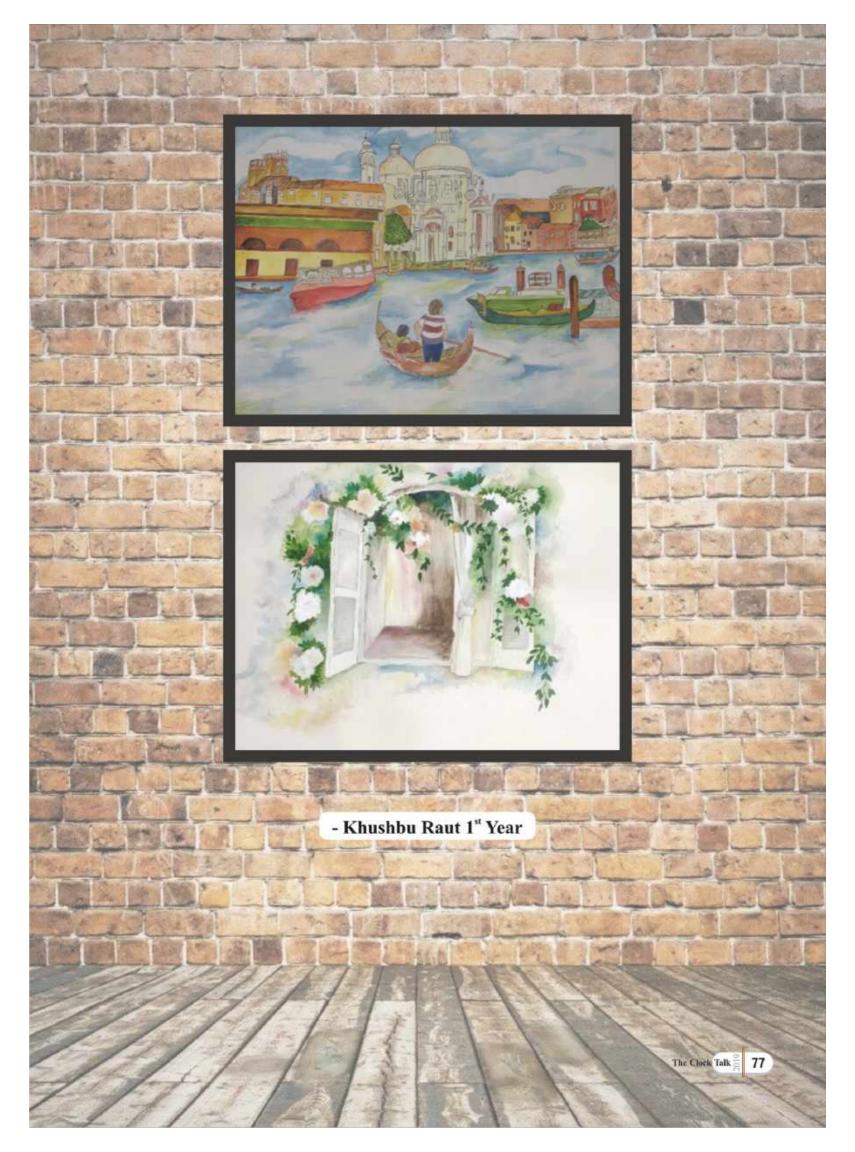


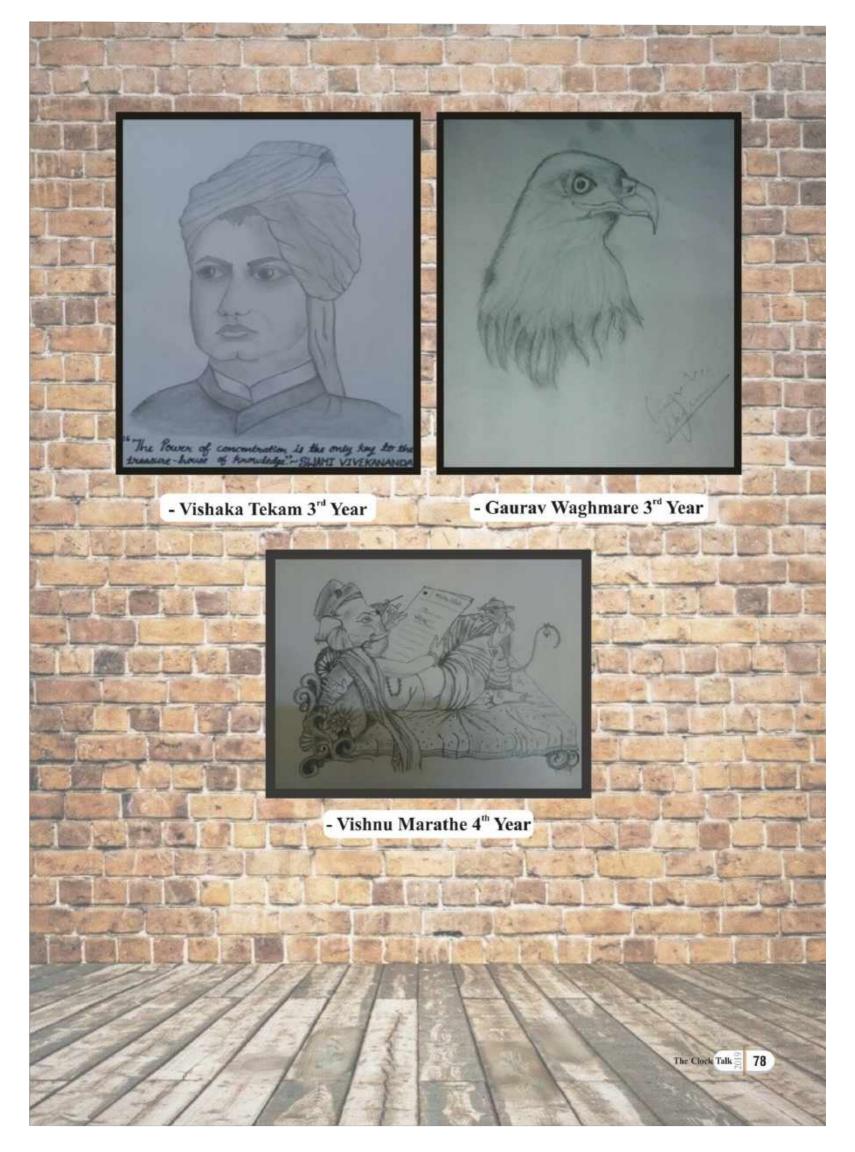


















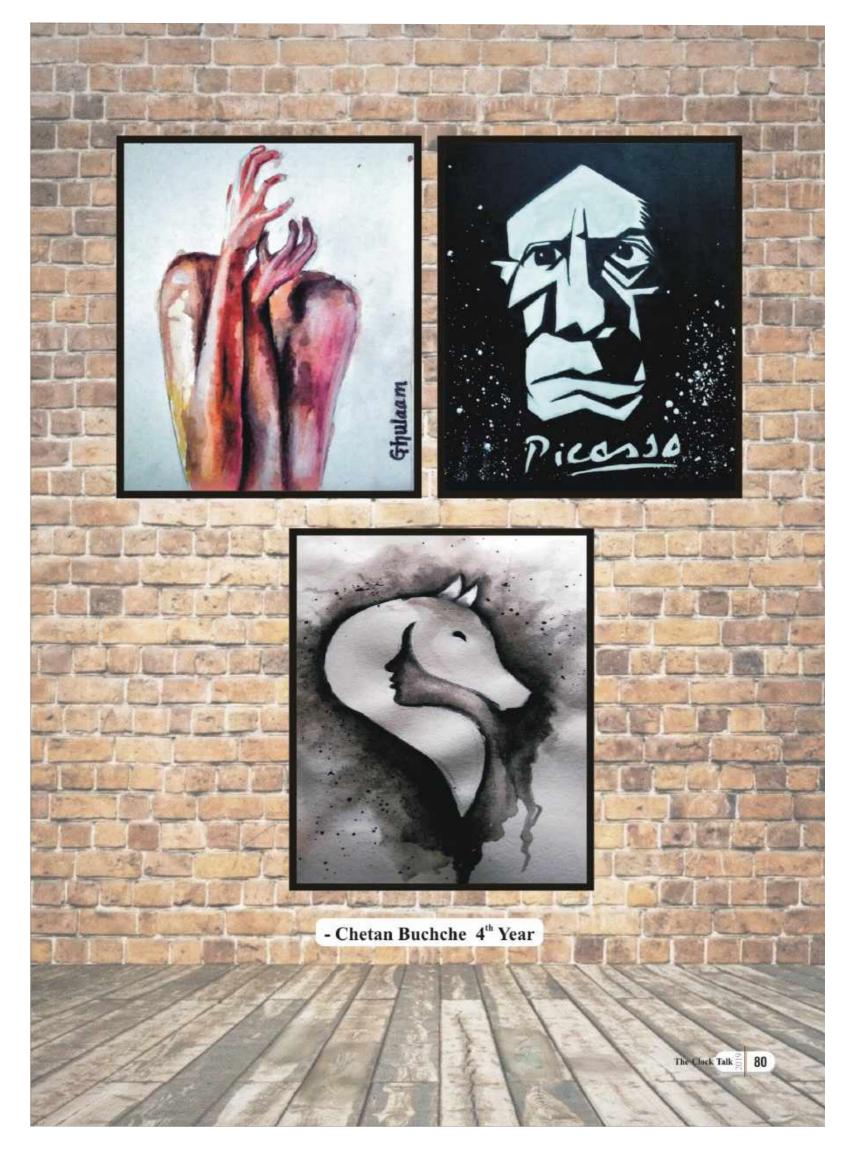
- Harsh Fale, 2<sup>ND</sup> Year

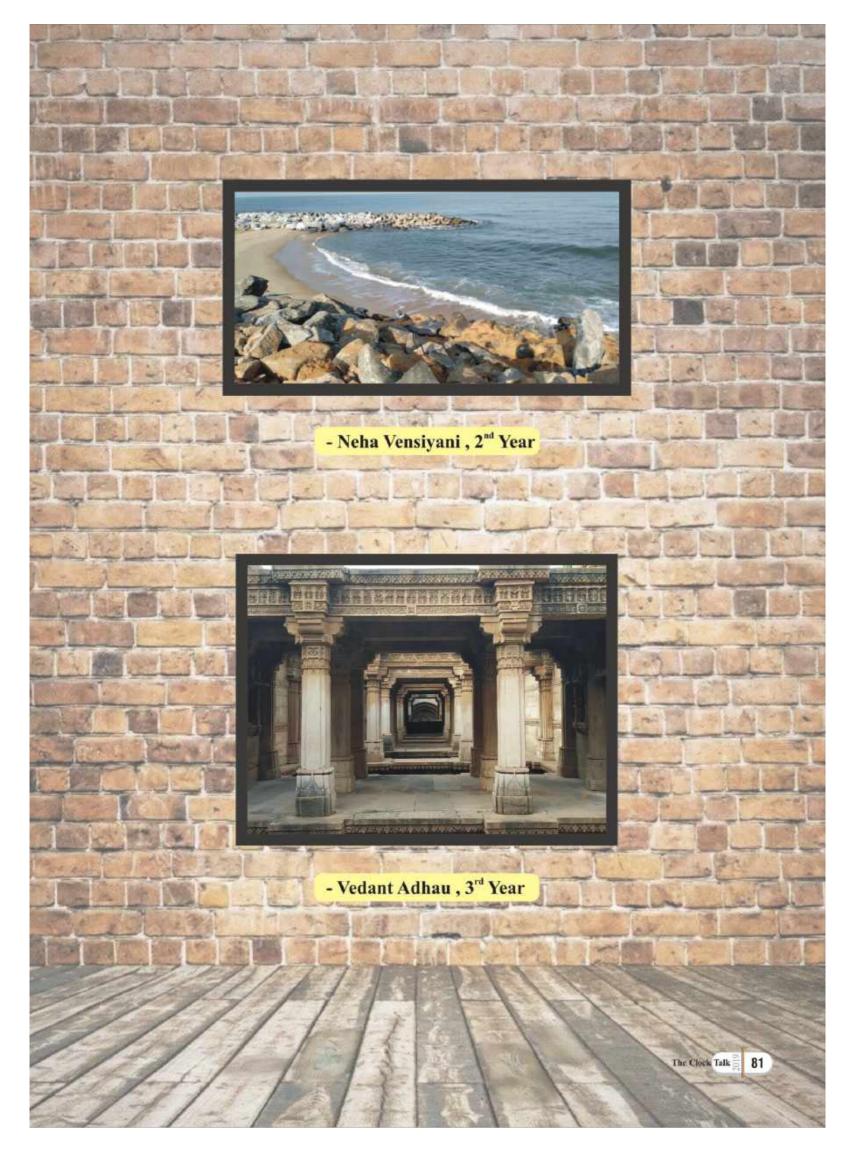


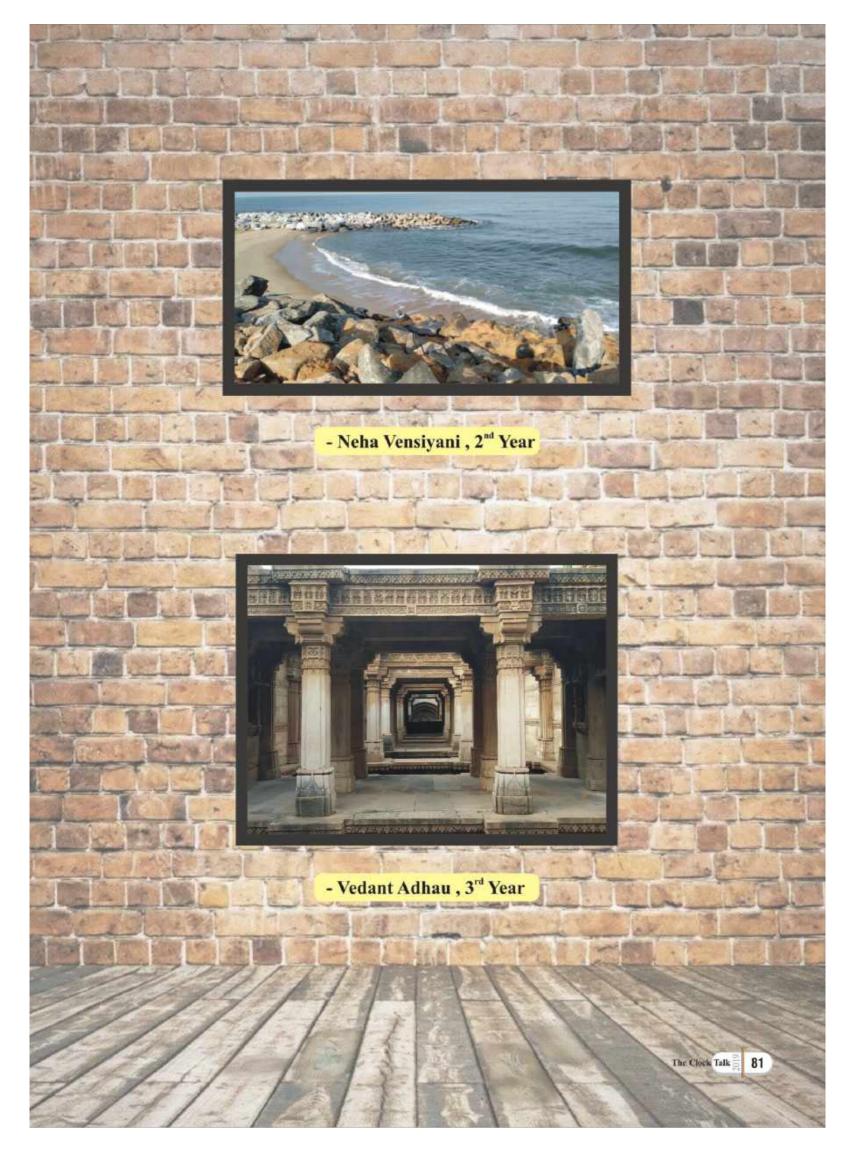
- Neha Vensiani 1st Year

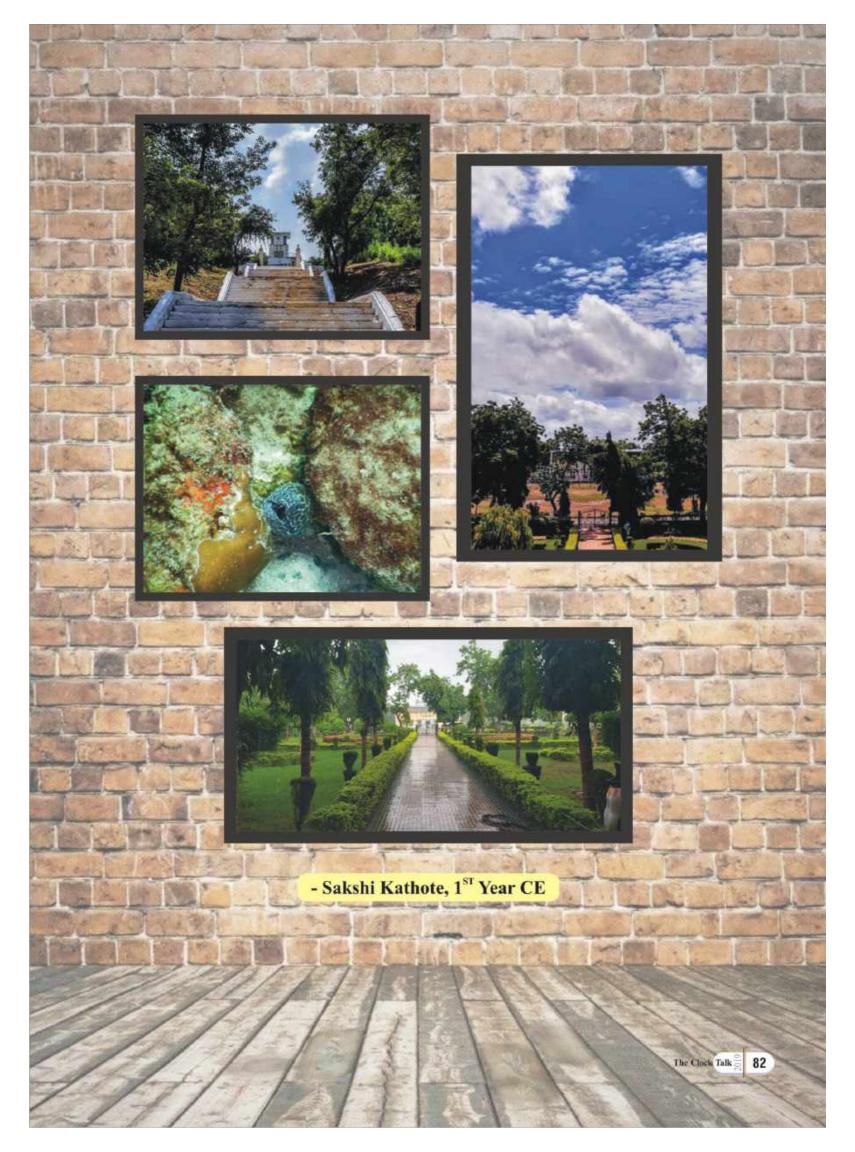


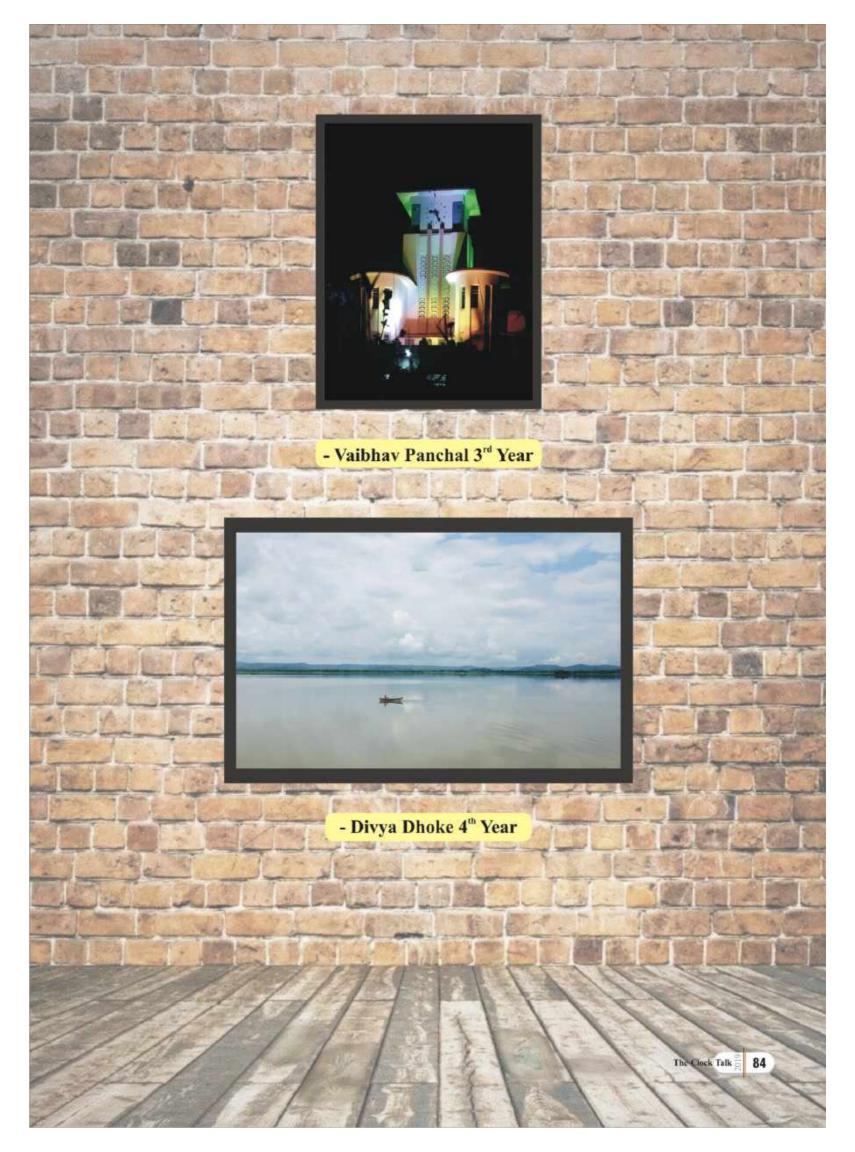
- Prachiti Apte , MTECH 1ST YEAR











# Institute Activities & Achievements



#### Laxminarayan Day

13th January 2019



प्रगती तेव्हाच होऊ शकते जेव्हा आपण विज्ञान तंत्रज्ञानाची लागवड करु हाच विश्वास होता राव बहादुर डी. लक्ष्मीनारायण यांचा लक्ष्मीनारायण तंत्रशास्त्र संस्थेची स्थापना २ ऑगस्ट १९४५ साली झाली राव बहाद्र डी लक्ष्मीनारायण यांनी स्वातंत्र्य पूर्वी काळात त्यांची पस्तीस लाखांची संपत्ती लक्ष्मीनारायण तंत्रशास्त्र संस्थेच्या स्थापनेसाठी दान दिली. अशा या थोर विभृतीचे ऋण व्यक्त करण्यासाठी लक्ष्मीनारायण दिन ३० सप्टेंबरला साजरा केला जातो. १३ जानेवारी २०२० रोजी रावबहाद्र डी लक्ष्मीनारायण यांचा जयंती समारंभ लक्ष्मीनारायण तंत्रशास्त्र संस्थेत साजरा झाला. माननीय डॉक्टर विश्वास पांगारकर व माननीय डॉक्टर संजय जोशी प्रमुख अतिथी म्हणून उपस्थित होते. कार्यक्रमाचे अध्यक्ष म्हणून माननीय कुलगुरू, राष्ट्रसंत तुकडोजी महाराज नागपूर विद्यापीठ, डॉक्टर सिद्धार्थविनायक काणे सर उपस्थित होते. प्रमुख अतिथींचा परिचय माननीय डॉक्टर मानकर सर संचालक, लक्ष्मीनारायण तंत्रशास्त्र संस्था, यांनी करुन दिला. ३० सप्टेंबर २०१९ रोजी राव बहाद्र लक्ष्मीनारायण यांचा ८८ वी पुण्यतिथी समारंभ लक्ष्मीनारायण तंत्रशास्त्र संस्थेत साजरा झाला. माननीय डॉक्टर शरद निंबाळकर सर, माजी कुलगुरू पंजाबराव देशमुख कृषी विद्यापीठ अकोला, हे प्रमुख अतिथी म्हणून उपस्थित होते कार्यक्रमाचे अध्यक्ष म्हणून माननीय डॉक्टर विनायक देशपांडे सर, प्र-कुलगुरू राष्ट्रसंत तुकडोजी महाराज नागपूर विद्यापीठ, हे उपस्थित होते. प्रमुख अतिथींचा परिचय माननीय डॉक्टर मानकर सर, संचालक लक्ष्मीनारायण तंत्रशास्त्र संस्था यांनी करून दिला.

#### LAXMINARAYAN INSTITUTE OF TECHNOLOGY UNVEILS

THE FIFTH EDITION OF NATIONAL CONFERENCE REACT 2019

27th & 28th February 2019

Providing researchers a platform to portray their innovations and ideas, two days National Conference on Recent Trends in Chemical Engineering and Technology, REACT 2019 was inaugurated on 27th of February, 2019. The inauguration witnessed the presence of prolific personalities such as Mr. Vinayak Marathe, Senior Vice President, Reliance Industries Ltd., Mumbai as a Chief Guest, Dr. Siddharthavinayaka Kane, Honourable Vice Chancellor, RTMNU, Dr. Raju Mankar, Director, LIT (Chairman of REACT), Dr. R.P. Ugwekar, HOD Chemical Engineering, LIT (Convener of REACT), Dr. B. A. Bhanvase, Associate Professor, LIT (Convener of REACT). Dr. G.M. Deshmukh worked as Secretary and Dr. V. Y. Karadbhajane was the Treasurer. The inaugural function started with the traditional lighting of the lamp and Vidhyapeeth Geet. The participants and the dignitaries also paid homage to the martyrs of Pulwama attack. Dr. R.P. Ugwekar stated the objectives of this conference and the benefits the participants will take back. Dr. R.B. Mankar motivated the students regarding participation in National Conferences also he gave a gist about the advantages of participating in REACT.

Dr. Kane emphasized on the connection of Chemical Engineering with daily life. Mr. Marathe enlightened the audience regarding the advances in Information technology, Bio Technology and Chemical Engineering; also he gave a lecture on "Bio fuel Production from Algae", which was well has received by the students. He stressed that the Biofuels will definitely solve the Energy crisis in the Nation and World at large. The release of REACT 2019 Souvenir by these guests was the main highlight of the Inaugural Function. Unfolding the Souvenir, the function proceeded with the inauguration of Poster Presentation by Chief Guest Mr. Marathe and simultaneously different events such as Chem-o-Mania, Oil Quest, Macro Fest, Food Vision and ASPEN workshop also commenced.





Day two commenced which witnessed the presence of eminent personalities such as Dr. Manojkumar Ramteke, Associate Professor, IIT, Delhi, he introduced the concept of Genetic Algorithm to the audience, explained the importance of optimization and also spoke on how cost effectiveness goes hand in hand with the purpose of the equipment or process.

This two-day conference received a zealous response of students from all over the nation with more than 450 participants. The Heads of various departments and faculty members had taken immense efforts for this conference. The event was managed by student co-ordinators namely Shivank, Umesh, Anand, Ashish, Ayushi, Prasad, Rachi and Shreya and entire team. The authorities of Rashtrasant Tukadoji Maharaj Nagpur University have extended great support for this conference.

#### Jal Diwas and speech by Dr. Nimbalkar

22<sup>nd</sup> July 2019

On the occasion of Jal Diwas on 22 July, Laxminarayan Institute Of Technology Celebrated Jal Diwas throughout the week. Various activities were held by the institution during this period. Activities like Poster making competition, poetry competition, were held and students participated in huge numbers in it with great enthusiasm. Plays were also done by the students to spread the awareness for water conservation among the civilians. In all the events held during this week the students portrayed the topic of Water conservation in their poetries, posters, plays in very unique ways. A Debate competition was also organized on this occasion for the students. It was held at the auditorium of the Institute to discuss about the ways for water conservation by public and private Institutions. The last event of this week on Jaldiwas was a seminar held by Dr. Nimbalkar who showed some light on the importance of conservation of water in today's world and how shortage of water may affect the coming generations. Dr. Sharad Nimbalkar is Former Vice Chancellor of PDKV Akola. In his speech he gave various ideas for preservation of water. Some of them were, how we can preserve the rainwater in flat systems and use them for future purposes? or how we can increase the ground water level as it is depleting day by day? He also suggested the ways to treat the waste water from our various household purposes in other works such as collecting the waste water from washing machines, etc and use it further in washrooms thus saving litres of water everyday. Also he suggested that how we can use minimum water for our daily needs. In this way he spread the awareness among students and staffs present in the event about conserving water on the occasion of jal shakti diwas.



#### **Ganesh Festival Celebration**

September 2nd, 2018



Every year Ganesh Festival is celebrated in our college with immense joy and great enthusiasm. Ganesha is recognised as God of knowledge, and every year we welcome him at our place and pray to shower his blessings on all.

The Ganesh idol was set for three days. First day, i.e. on the day of Ganesh Chaturthi, which was on 2nd September all the students gathered in college, with great energy and enthusiasm, with music dance and color of joy, with the loud chanting - "Ganapati bappa mourya" we welcomed bappa in our college the idol sthapna was followed by aarti and Prasad distribution. In the evening students gathered for antakshari, charades, and the evening aarti was conducted by the LITMUN Organisation Committee members. Next day bhajan Sandhya program was organised for all. All the students in their traditional outfits gathered in front of the pandal of bappa and sang bhajans. 3rd day was the visarjan day. At around 5pm bappa's aarti was done followed by the Mahaprasad distribution to all the students. The departure of bappa was greeted with dhol Pathak. With the loud sounds of dhol & chanting - " Ganapati bappa mourya, pudhchya varshi lavkar ya", the visarjan of bappa was done.

Thus the three days Ganesh festival was celebrated in our college with sheer devotion for Bappa.

#### **Student Induction Programme**

September 2nd, 2018

As per the instructions and directions of AICTE, a three-week Student Induction programme has been organized for B.Tech First year Chemical Engineering and Chemical Technology students during 05/08/2019 to 25/08/2019. The programme commenced with the inaugural ceremony, followed by the address of Director, LIT with emphasis on the rules and regulations of the institute, code of conduct and the pattern of RTM Nagpur university theory and practical examinations. Parents were urged to have a constant watch on the performance as well as the attendance of their ward as the minimum requirement of attendance to appear for the university examinations is 75 %.



Lighting of the lamp by Dr.R.B.Mankar and other dignitaries during inaugural ceremony of student induction programme -2019

Students were made aware of various grievance cells such as Anti ragging cell, Anti-Sexual Harassment Cell, which helps the students to provide a healthy and congenial atmosphere in all situations. Various guest lectures, which improves the quality of personal life were undertaken so as to highlight the importance of life skills, time management, communication skills, soft skills, stress management, traffic rules, universal human values and team building, environmental ethics. Various activities such as Art of living, Awareness on NSS, Yoga, meditation were also undertaken.

Overview on B.Tech. Curriculum and credit based system, career and placement oppurtunities were well demonstrated. Mentor-Mentee groups meet was arranged, in which a group of students comprising of 7-8 were assigned to a teacher mentor as well as senior student mentor. Awareness has been made among the students regarding the role and responsibilities of mentor as well as mentee. The mentor's role is to teach, guide and help, shape the professional growth and learning of the mentee and to serve as a positive role model, while the mentees role is to seek guidance and constructive feedback on his/her professional development and career goals. Campus vist, sports were also a part this programme.

To acknowledge 73<sup>rd</sup> year of Independence and sensitize the students towards the freedom struggle and Quit India Movement, which led to secure India's Independence, various activities such as Quiz/ Essay writing/ Debate related to freedom struggle were conducted under the head "Azadi celebrations" as a part of three week student induction programme. On the occasion of Independence day, a street play on the theme brain drain was performed by B.Tech I year students with the moto to cut down the migration of talented youth in search of the better standard of living and quality of life, higher salaries, access to advanced technology in different parts worldwide. They illustrated the present mind set of Indians towards life settlement in foreign countries and the play ended with a oath that they will work in the nation and for the nation.







Students performing street play



Audience - watching street play







Various Creative Clubs (Dance/Singing/Poetry/Drama/ Sketching) were formed so as to knock out their talent in front of their student friends and prizes were given to the winners on the day of valedictory function.

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#### TREE PLANTATION DRIVE

**AUGUST 14, 2019.** 

On the eve of Independence day, a tree plantation drive was organized at the Laxminarayan Institute of technology by the students of LIT.

The students under Professor Shubha Dautpure selected empty space for plantation in the college campus and made necessary arrangements for the drive. 50 saplings were supplied by the 93.5 RED FM and the students were also asked to bring some saplings from their home as well.

The area selected for tree plantation were college canteen, physics department, workshop, college library and main building. Saplings of custard apple, bael, lemon and mango were planted by the students and the RED FM team. The uniqueness of this drive was that a group of students had to adopt a tree and look after it. Keeping this thought in mind the drive was conducted with great enthusiasm.



College canteen was the first location selected and 15 saplings were planted there. 10 more saplings were planted near the Physics department and the RED FM team also took a small interview of some students and professor Shubha Dautpure here which was later aired on the FM the next day. Students continued their drive near the main building where 6 more saplings and a Peepal which was provided by college were planted. Students were having great fun here as they worked really hard dugging ground. While some students were planting saplings near main building another group of students planted 10 saplings near the workshop and in the college ground as well.



And the last location of the tree plantation was the area near the college library. Students planted about 15 saplings here and Professor Dautpure ma'am was there with the students till the end. In the end, Dautpure ma'am thanked every student and RED FM for initiating such a good activity.

#### **TEACHERS DAY CELEBRATION**

5th September, 2018



We celebrate teachers day every year throughout the country on 5th September. On this day, students express gratitude and appreciation for the teachers. This day is dedicated to DR. SARVAPALLI RADHAKRISHNAN-Second President of India. The great academic philosopher and one of the most well known diplomats, scholar and above all a wonderful teacher. As attribute to this great teacher, his birthday is celebrated as teachers day.



Like every year, this year too ,teachers day was celebrated in our college on 5th September 2019. The gathering was held in the 3th year classroom where the students personally presented a rose to all the teachers. Dr R. B. MANKAR sir, Director of the college, Dr MADHUKAR BHOTMANGE sir, Head of Food Tech department and Dr BHARAT .A. BHANVASE, Professor and head of Chemical Engineering department were the Chief Guest of the program. They were welcomed and honored by a sapling and a rose.



As per the Indian culture we always start our work with prayer. The program proceeded with worshiping of Saraswatidevi and paying respect to DR SARVAPALLI RADHAKRISHNAN and Late RAO BAHADUR D LAXMINARAYAN followed by university prayer.

The Importance of teachers day was highlighted and a peak in DR RADHAKRISHNAN'S life through a speech by second year student, SayaliSahare and Karan this was lead by a speech by the director who spoke about the importance of learning and being a student throught once life. After the speech the program was concluded with a vote of thanks by Anjali a student from 2<sup>nd</sup>year. The program was conducted by students of second year (CE/CT) efficiently and throught the program the decoram of the hall was maintained.

#### **MERGE 2K19**

September 15th, 2019

'MERGE', the name itself suggests that the event focuses to bring people together for a better cause. It is one of the Nagpur's inter-school and inter-college events organized every year in Laxminarayan Institute of Technology. The event was started in the year 2015 in LIT to help the students in the overall development of their personality. It basically helps an individual to explore the hidden talent in oneself and show it to the outside world. It is a non-technical fest comprising of various events.

Continuing the legacy of our seniors, MERGE 2019 was the fifth edition. It was a full day event which was held on 15th of September 2019 in the college premises.

#### **INAUGURAL CEREMONY:**

The event was held in Guru Nanak Hall near the college campus. The inauguration ceremony commenced in the presence of our chief guest Dr. NitinVighne, Managing Director, Psychologist, Career Counsellor and International Trainer in Yoga and HRD, International Institute of Research in Psychology and Health Sciences, Dr. Raju Mankar (Director of LIT), Mr. Ajay Deshpande (Chairman of LITAA), Dr. Asar Ahmad (Teacher Coordinator), our title sponsor Mr. Yogeshwar, Managing Director, Yash Competitive Academy and with all the love and support from volunteers and participants. The event started by lightening of the lamp by the dignitaries on the dais. Thereafter, Vighne Sir addressed the participants with his motivational oration. His speech was followed by Director Sir, Deshpande Sir and Yogeshwar Sir. The event was concluded by a formal vote of thanks.

The event was organized under the guidance of Dr. Raju Mankar, Director and Dr.Asar Ahmad, Teacher Coordinator. Our Treasurer, Mr. Tanay Gajbhiye worked very hard through all the financial needs. Ms. Aishwarya Badwe took genuine efforts in bringing various sponsors like our title sponsor 'Yash Competitive Academy', our banking partner 'Bank of India', our hospitality partner 'Haldirams', our radio partner 'Radio City 91.1', Subway, Gate Coach, T.I.M.E., Gokul Vrindavan, Urjaa Abacus and many more. The event was in collaboration with NEERI, the most prestigious Environmental Engineering Research Institute.

#### ABOUT THE EVENTS:

#### 1. QUIZZAPUR

#### Introduction:

This event helps us to explore our love for our beloved 'NAGPUR CITY'. It is a quiz competition, with each team having two members. Various rounds with various levels challenge the participants to prove their knowledge of our city.

#### Main Objectives:

- To increase the knowledge about history and geography of our city.
- To make hostelites fall in love with our colourful city

#### **Participation Details:**

50 teams of two members per team from 10-15 different colleges

#### 2. RANGREZZ

**Introduction:** This event was a freestyle drawing competition which helped to bring out the artist, hidden in the youth. The participants included both school as well as college students.

The topics for the competition were:

- · Glimpses of Nature
- · Staircase to the Stars
- · History and Heritage of India
- Time and Technology Travel
- · Artistic Creations

#### **Participation Details:**

- · 30 teams of two members per team
- 23 individuals from 20-22 different schools and colleges

The efforts taken by all the students were applaudable.

#### Judge:

• Mrs. Gauri Deshpande, freelancer artist in the field of paintings and sculptures.

#### 3. EXPRESSO

#### Introduction:

Since we live in a developing city, we often face some crisis and potential problems related to the environment and hence human based innovations are necessary which will support the development of smart and sustainable city. To promote such innovations and ideas, we came up with 'Expresso' with our motto, 'Tomorrow happens here'. It was a presentation competition with two members in each team. Each team was supposed to pick up any local/environmental issue in Nagpur and present their solutions to it.

#### Judges:

- Mr. Rajesh Karade Retd. Assistant Municipal Commissioner, Nagpur Municipal Corporation.
- Dr. R. J. Krupadam Senior Scientist, Chemistry Dept, NEERI
- Mrs. Prachi Mahurkar Ecologist

#### Participation Details:

25 teams of two members per team from 10-12 different colleges





#### 4. QUIZZY BEE

#### Introduction:

It was a quiz competition on General Knowledge, Mathematics and Science for the students of 8th, 9th and 10th grade.

#### Main Objectives:

- To promote fun way of learning and process of increasing academic as well as general knowledge.
- To promote quick decision-making ability and team building skills.

#### Participation Details:

• 42 teams of two members per team from 10-15 different schools

#### 6. GRAVITAS

#### INTRODUCTION:

A person's personality is the main feature of his existence. Taking this into consideration, MERGE brings you Gravitas, a personality development competition. This event is divided into four parts viz. group discussion, extempore, debate and stage interview ascendingly.

#### Main Objectives:

- · To enhance soft skills and personality.
- To seek truth from facts, add value to the presentation skills and logical thinking ability.

#### Judges:

- Mr. Vishal Chaudhary Director of Hopes Academy, Nagpur.
- Ms. Payal Lokare Consultant in FMCG Companies and an Entrepreneur.

#### Participation Details:

60 individuals from 15-20 colleges

#### Prize Distribution Ceremony:

The prize distribution ceremony concluded in the Biot Hall in the presence of Dr. Asar Ahmad, Teacher Coordinator, Mr. Vishal Chaudhary, Director, Hopes Academy and Ms. Payal Lokare, Consultant in FMCG Companies.

MERGE 2019 received an overwhelming response from different schools and colleges across the city. The MERGE Team is very glad and thankful to every sponsor and participant for contributing to the successful conduction of the event. Also, the team is thankful to the college faculties for showing their help in the course of organizing the event. The delight of the participants is the only thing which takes the event to the top of enthusiasm and that is the biggest achievement.

# Laxminarayan Institute of Technology Model United Nations (LITMUN 2019)

23rd -24th August, 2019

Laxminarayan Institute of Technology, or LITMUN, is an event started 3 years ago, and has proved to be one of the many amazing and outstanding events LIT has ever hosted. It is an attempt to simulate the United Nations, in a simpler manner, open to participants of all ages.

This year, LITMUN hosted over 400 participants from schools and colleges all over the country. The theme that the event supported and pledged for was 'Sustainable Development'. There were 6 committees this year, viz;

- United Nations General Assembly [UNGA]
- United Nations Security Council [UNSC]
- United Nations Human Rights Council [UNHRC]
- Disarmament and Security Council [DISEC]
- Loksabha
- Historic Crisis Committee [HCC]



The inaugural ceremony was presided over by the respected director of LIT, Dr. R. B. Mankar, chief guest, Principal Chief Conservator of Forests, Shri Nitin Kakodkar[IFS] and the teacher coordinator of the event, Dr. Saurabh Jogelekar. The chief guest gave an articulate speech on Sustainable Development. The event also collaborated with 'The Global Shapers' organisation, whose speaker spoke to the audience on the theme. The secretary general opened the conference with a speech and motivated all participants.



The 2-day event was full of debates, thoughtful lobbying and fun. The delegates were judged by the executive board members and many solutions to modern political issues were discussed. The first day proceeded in discussions, whereas the second day was utilised fully for debating on issues, lobbying and presenting the resolutions in the committee.



High commendations, special mentions and verbal recommendations and for the best International Press delegate in the valedictory ceremony. The executive board members expressed their happiness in being a part of the event. The valedictory ceremony was graced by the chief guest, the chief editor of The Hitavda, Mr. Vijay Phanshikar and the Guest of Honour, Mr. Sachin Zoting, an attorney and a Rotary Club member. The guests gave speeches which totally enthralled the audience. The event collaborated with 'Robinhood Army', an NGO, to support the flood-affected victims. The valedictory ceremony ended on a closing remark by the director and a vote of thanks.

LITMUN was a grand and successful attempt on behalf of the LITMUN Team, comprising of the teacher coordinator, Dr.SaurabhJogelekar and 44 dedicated individuals from 2<sup>nd</sup> and 3<sup>nd</sup> year who put in considerate efforts to make it an enthralling experience for everyone. The team is grateful for the enormous support from the director, the faculty members, non-teaching staff and everyone associated with the event for helping it become one of the most sought-after MUNs in Central India.

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#### **NSS Cleaning Drive and Blood Donation Camp**

28th September 2019





NSS (National Service Scheme) had arranged cleanliness camp and blood donation camp in our college. Cleanliness camp was held on 27th September 2019 in college premises. Responsibility of cleanliness campaign was given to each and every student of college. Each class had been allotted specific area in college premises to clean. Every class had to manage their work in off lectures and free time. Duty of class representatives for NSS was to keep watch on participation of each NSS candidate in their class in this cleanliness campaign.

Blood donation camp was also arranged on the following day of cleanliness campaign that was on 28th September 2019. This camp was organized by Government Medical College (GMC) Nagpur. Venue of this blood donation camp was old boys hostel in college. The camp was a grand success as 92 donors came forward to donate their blood.

Both the campaigns that are cleanliness camp and blood donation camp were successfully held under the supervision of our NSS teacher coordinator Dr. N. M Patil and student representative Arpita Pali and Piyush Ghutke.

#### SANDESH TO SOLDIERS

15th August 2019

Indian Army is the lifeline of our country, with a strength of 2.1 million soldiers. Asking about the importance of Indian Army in India is like asking the importance of heart in a human body. It would not be wrong to say that there would be no India without Indian Army. It is the backbone of the country. It is also one of the few institutions left in the country which could be considered as completely neutral and reliable. If anything goes really wrong in the country, we look at the army for solutions, be it riot control, counter insurgency, fighting terrorism, fighting Naxalites and even getting medals in international sporting events.

This Independence day on 15th August, students from Laxminarayan Institute of Technology, expressed their feelings and thanked the soldiers for their services by sending them letters.

#### Some of the letters posted are -

#### एका अनामिक समिकास..... विश ऑसीक दादा. स् हास्तीवर आहेस की न्योंकीवर हे मला ठावुक साही. चौकीवर सकी डाकाला स्वठी डायास्यादलका भीवाँस सक्कीय सकातीन् तू निर्यात याहू जाकत माठी म्हणूमय आप्ती भीवांस याहू बाकली, वासी मला पुरेपूर कव्यमा आहे. सापन्या माल्यामा रवलापं, प्रेमार्य , गावमाड्याम् बाटा कुरुवाम् नाव वेवसा ग्रेगार् नाही सरीही भी सुना बढरावंद्यमानियोल्य पादवी पादविव्याचे द्रणवेली. त् केवल या वाहेगीयाय सल्हे तर संपूर्व भावत वर्षाया रहान कराना उनाहेका ब्रह्मान उनाही आधान्य क्रोक करा जाती तर सावलीता जाती. वाकरा पड़का सर निवारा बरोपामो . गंडी नामकी महसून मिलेल सेयद संशासनेश्वासी काणेड्स होसी पठा लू ह या कवामधिही पठी स कवला, कालेदिक्स देवास्या कीमेसे होक्यान नेका बालून बदाना क्वील उपसीर गरणूनच् वरख्या सानापेदगरी वास्त्री काँद्याच्या पाहिला मान देवक तुद्धा आही लुकास् आगडी दोल दिवम वाहेर गोलों, सरी धरी केला परतती काओं होसों कहुंवासीम् अर्थ आससी वाट पारसास. परेख सू एकदा ज्यूटल्या अंपकृत कोल्याच्य सर दिली सकी दिवका माने वसून पाहता चेल लाही, अगई वडील , पत्नी , युक्त , प्राप्ता वार्व जीवार आगल बरोद्दार सुक्ता कादत असर्जीका है दिवस ह कुद्न येसे सुना हे बल इ केवल काल्युकीखा मेगाफोटीयला लु मा तुम्रमीस्या व देवावाकी सांस्या स्ट्रानाकाठी ञ्चलान्या प्रावासी पूर्व न कुरता भियेवर लाइल बाहली ज्या या। कदल्लाकाही माध्रा धुना कोरी जोटी राजाम। मी या पमाइनोरे सुन्म स्तुप स्तुप राज्यवाद देती. तुस्ती कुर्राही स बोटलेल्सी

चित्र अंशिक बोमाव अर्वप्रथम तुम्हाला ६३०मा स्वातंत्र्वाविमाच्या हार्कित क्षेत्रह्म उताला भागा है पत्र जिंहतामा अप वार्त होत आहे कारण, साझे पत्र वास-ाांश एक वैक्षिक आहे. आपक्या बाउन पेशाचे रक्ता करव्याकरिता की तुसने आसार सामले तुसन्तामुळे आज आमही कांल क्षोप होक सफतो, आनंवाने आहि। न भीता शर्व सवा सावों करू वाकतो . आवा बावताला उच्च रुवाल प्राप्त लोठवानाको आवतीय क्षेत्रेचा व्यव सोठा वाटा आहे. कारण, तुन्ही नराता तर कदाचित आमहाता उच्च शिक्का शिकव्याची संस्ती चिळाली नामती , एक सूर्रकात कातावरका चिळाला बनात , पका आ अर्व रमारुवांतर बाल वेक्स आमहाका मातिमान कालि उन्हादावाक जीवन वेठमाकारिता तसारी अपूप अपूप आसार आहे. अल अलो, पाकल अलो वा वावळ अलो, या स्वर्त परिस्थितीं पहले व्यवसा तस्की कारत बातेचे २००१ करित अञ्चला स्वतःची चिता न कारता, हमरीवर मोळ्या क्षेत्रील अभिकेश देशासादी लंदन डाजाना आवार ताकी , क्यी डांग लंकी , सक्वाली बीती नाही वात्मस्य काव्सीय केला स्टवातान आहि या योनेसहत्रे तुमस्याजाञ्चे कर्वती वर्गासल आहेल याचा आस्तातम अभिसात आहे. फता वक्ताच्या नात्यात न ग्रामनता संयूर्व भागतिय बाह्यवास्त्रा रकाणाकिता आपने प्राचन तस्की होकाल हाजाता. तुमच्या या त्यावातम , तुमच्या देवामवत्तीवम जाति। त्मस्या कीरमेळा बाह्मा कानाब आहे. अंश हिंदू । जन्म बाहत । वियाज्या टेकल लक्सीमाराज्या सोविक संस्का सामपूर

B. Tech III YMY (CE)

#### Sadbhaav - On the path of divine donor

14th January 2020

Under the forum Sadbhaav – On the path of divine donor, students of Laxminarayan Institute of Technology have taken a novel initiative to distribute sweets to the orphans and other poor in the nearby slums on the occasion of Rao Bahadur D. Laxminarayanji birth anniversary celebrated on 14th January 2020.



They have also planned to donate new uniforms, stationary items, toys etc to the needy people on the commemoration day of Laxminarayanji and this tradition will be continued for ever.

### Achievements 2018-2019

Name of Students	Achievements	
	Competition : HACKTHON, Nagpur	
Mrunal Hulke	Prize 3rd Competition : CHEMIX, ICT Mumbai	
Samiksha Mahakulkar	Prize 1st	
Renuka Gajralwar	Competition : SAMMANTRANA Prize 1st	
Srushti Gulghane	Competition : Paper presentation competition in COLOSSEUM 19	
Punam Bhade	Synthesis of valuable fractions from waste transformer oil	
Shreya Agrawal	engine oil, and polymeric material. Position: 2nd rank	
Piyush Amrutkar,	A National Level Conference at 'REACT' at	
Aishwarya Badwe,	Laxminarayan Institute of Technology, Nagpur.	
Aditya Mahajan	1 <sup>st</sup> Position (Chemical Engineering)	
	Paper Presented at INAC - 4 , ISSE National Conference, Ahmedabad	
Vedant Adhau	Chapter, Space Application Centre, ISRO on	
	'Segregation and utilization of Kitchen Waste' Guided by: Prof. S. L. Pandharipande	
Shraddha Chaudhari,		
Ankita Pedkar	REACT 1st Prize in Chemical Technology	
Sanika Agnihotri	Topic - Solar Conduction Dryer	
Akash Patange	Abhyudaya 2K19 Business Plan competition 1st prize	
190	rat prize	
Konark Nemade, Ashruba Patil	Abhyudaya 2K19 Business Plan competition 2nd prize	
Vaishnavi Wagh	Competition - Fashion show Elite 2k19	
	Position - First prize	

### Achievements 2018-2019

Name of Students	Achievements	
	MOCK PLACEMENT (SGGS Nanded)	
	Position - First prize	
Kaiwalya Gawande	Competition- PRICE IT RIGHT (MARKETING)	
	(SGGS, Nanded)	
	Position - First prize	
	Competition- Akhilbhartiya NatyaParishad,	
Devika Vaidya	Osmanabad	
	Position - First prize	
Vaishnavi Wagh	Competition - Rangrezz (Merge - 2019)	
Prajwal Nighot	Position - First prize	
Amisha Patankar	A national level conference at 'REACT' at Laxminaraya	
Rahi Kulkarni	Institute of Technology, Nagpur	
	- 1st Runner Up in poster presentation	
LIT College Football Team	Raisoni National Level Competition	
	Winners - 1st position	
Muskan Singh Hrushikesh Munne		
Heena Matale	Competition - Ultimate Socio Technocrat	
Snehal Jangale	Abhyudaya 2019	
Vaishnavi Makode	Postion - 1st	
Akshay Khade		
Shivank Sharma		
Kanchan Palliwar	Dealth-read Tolerick Male and Manager 1	
Rachit Rangari Priti Derkar	Rashtrasant Tukadoji Maharaj Nagpur University, Gold Medalist	
Bhushan Waghmare	Gold Medalist	
Bhagyashree Shendre		
Nitin Parate		

# **Faculty Achievements**

### Prof. Shekhar Pandharipande

- Patent for "INNOVATIVE COMPOSITE FROM SAND, PLASTIC AND AGRO/KITCHEN BASED WASTE MATERIALS" Co-Inventer Mr. Tushar Mhaske (M.Tech)
- 2. Patent for "ISOLATION OF LIGNIN AND CELLULOSIC CONSTITUENTS FROM COW DUNG SOURCE AND ITS MIXTURE WITH SOME LIGNOCELLULOSIC MATERIALS" Co-Inventer Shreyanshi Gupta (M.Tech.)

### Dr. Shubha P. Dautpure

- Received Best Research Paper Award in the International conference on Green Energy for Sustainable Development-2019, organized by Government Polytechnic, Nagpur. Presented research paper entitled" Bianchi type III and Kantowaski sachs cosmological Model with Chaplygin gas and time dependent gravitational and cosmological constants" on 26th Feb 2019.
- Received Best Research Paper Award in the International conference
  organized by S. B. Jain college of Engineering and management, Nagpur. Presented
  research paper entitled" Dark energy cosmological Models with time dependent Bulk
  Viscosity G and cosmological constant ^ " on 23<sup>rd</sup> Dec 2019.

#### Dr. Bharat Bhanvase

- 1. Patent for invention entitled "SYSTEMS FOR PREPARATION OF NANO ORGANIC PIGMENT DISPERSION USING CAVITATION REACTORS"
- Book Published titled "NANOMATERIALS FOR GREEN ENERGY", Publisher – Elsevier

# **Best Academic Performers Chemical Technology**



Vishnu Sonawane Aggregate 70.28 % CGPA. 8.42 Pulp and Paper Tech



Divyanshu Sethi Aggregate 73.14% 8.69 **CGPA** Petro Dept.



Vipshana Jinde Aggregate 68 % **CGPA** 7.88 Plastics and Polymer



Samiksha Meshram Aggregate 81.43 % **CGPA** 9.31 Surface Coating



Yuvraj Shinde Aggregate 70.57% CGPA 8.42 Oil Fats and Surfactant

# Best Academic Performers Chemical Engineering



Aniket Kalambe
Aggregate 81.4 %
CGPA 9.49



Shruti Pandey Aggregate 74.1 % CGPA 8.88



Rohan Malore Aggregate 71.48 % CGPA 9.49



Dhanashree Rakhade Aggregate 70.97 % CGPA 8.3



Aditya Ikhar Aggregate 69.04% CGPA 8.02

# Placement 2020 batch

Sr.No.	Name	Branch	Company
4	Bhushan Belkhode	CE	Thermax
2	Sanket Patil	CE	Reliance Industries
3	Aditya Ikhar	CE	Reliance Industries
4	Rushikesh Jagtap	CE	Reliance Industries
5	Siddhart Sharma	CE	Reliance Industries
6	Vivek Waghe	CE	Reliance Industries
7	Aman Meghawat	CE	Reliance Industries
8	Roshan Malore	CE	Reliance Industries
9	Abhishek Patil	CE	Reliance Industries
10	Mansi Mahale	CE	Reliance Industries
11	Prajwal Lokhare	CE	Reliance Industries
12	Tejas Mahale	CE	Vedanta Cairn India
13	Shruti Pandey	CE	Vedanta Cairn India
14	Vaishnavi Joshi	CE	Vedanta Cairn India
15	Shruti Koshta	CE	Vedanta Cairn India
16	Gaurav Raut	CE	Sulzer
17	Srushti Gulghane	CE	Sulzer
18	Prachi Jaiswal	СТ	Sulzer
19	Arpita Pali	CE	Godrej Chemicals
20	Nidhi Mulkutkar	CE	Godrej Chemicals
21	Musaid Ahmad	CE	Thyssenkrupp
22	Akshay Dhawale	CE	Thyssenkrupp
23	Sankalp Patil	CE	Thyssenkrupp
24	Mayank Gujrati	CE	Aveva
25	Shubham Khergade	CE	Aveva
26	Rohit Wagh	CE	Aveva
27	Vaibhavi Dabli	CE	Aveva
28	Saniya Sheikh	CE	Aveva

# Placement 2020 batch

Sr.No.	Name	Branch	Company
29	Saiyog Tomar	CE	Sudarshan Chemicals
30	Omkar Ghangrekar	CE	Sudarshan Chemicals
31	Litesha Vairagade	CE	Sudarshan Chemicals
32	Tushar Wankhade	CE	Sudarshan Chemicals
33	Amar Shedge	CE	Sudarshan Chemicals
34	Gaurav Mulchandani	CE	Toyo Engineering
35	Shishir Mudaliar	CE	Toyo Engineering
36	Praful Chichghare	СТ	Berger Paints
37	Hrishikesh Mohod	CE	DCM shriram
38	Ekta Shripad	СТ	Honeywell
39	Ayush Gaharwar	CE	Honeywell
40	Atharva Themdeo	CE	Honeywell
41	Shruti Jaiswal	CE	Honeywell
42	Gauri Dalwankar	CE	Honeywell
43	Shweta Bande	CE	Galaxy Surfactant
44	Aniket Kalambe	CE	Galaxy Surfactant
45	Suraj Rewatkar	CE	Galaxy Surfactant
46	Mahika Patil	CE	Galaxy Surfactant
47	Shreya Agrawal	CE	Galaxy Surfactant

# LIT JEWELS



Shri Kamal Narayan Seetha 1964

Honored by Zakir Hussain, Conferred title "Gaud Ratna" Wrote book "Power of Rudraksha", Soft designation "Polymer King of Asia", given by Sasmira Pilot Plant, Ex-Vice President of Indorama Synthetics.



Shri Jeewan Prakash Gupta 1969

Ex-President of Indian Glycol
Ltd and VAM Organic Chemicals
Ltd, Ex-MD of Insilco Ltd and
Polar Pharma India Ltd,
Ex-Chairman and MD of
Nirvana Biosys Pvt Ltd,
Current MD of Unithinx Enterprises
Pvt Ltd and Chairman of
Environmental Impact Assesment



Shri Harish Bhimani 1970

Recipient of the Coveted President's Medal in National Films Awards, described as "A writer with a Zing, most travelled Indian Compare," Writer of popular TV Serials Khandan, Subah, Inkaar, Sukanya, Grahan, etc.



Shri Shyam Bang 1971

Ex-Board of Jubliant Life Sciences Ltd, Enpro India Ltd, Kinetic Technologies India Ltd, UC gas Engg Ltd, Jubliant Infrastructure Ltd, Jubliant Generics Ltd, Current Chairman of NABCB and FICCI



Shri Dilip Gaur 1976

MD of Grasim Industries Ltd as well as current Global Business Director of Pulp & Fibre Business, also Director of Aditya Birla Management Corporation Pvt Ltd.



Shri Vinayak Marathe

Heads R&D Planning and Project & Operation of Reliance, has delivered invited talk in over 50 National and International Conferences on Operationl Excellence, Bio-Fuels, etc.

# LIT JEWELS



Shri Sudhir Shrivastava 1980

IAS officer, current chairman of Maharashtra Police Ctrl Board, has been Additional chief Secretary, Finance Secretary, Planning Secretary, Transport & Excise Secretary, CEO of Mah 2009 Maritime Board, has been on Board of various Infrastructural Companies such as Nagpur Metro Rail Corp. Ltd, Mah Airport Development Company, etc.



Dr. Urmila Diwekar 1982

The President of Vishwamitra Research, Received Coveted Cecil Award for Environmental Chemical Engg From AIChE in & the energy & sustain ability award, also awarded by Garje Marathi, Author of more than 170 peer - reviewed research papers.



Shri Arun Kumar Shrivastava 1983

The Secretary Atomic Energy commission as well as chairman, Intellectual property rights cell department of atomic energy, member of the board of director of Square Kilometer Array Project, council member of CERN, GENEVA, Member of joint Oversight group of DAE & NSF.



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# THE TIMES OF LIT

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LITians Convert Waste to Wealth



100% eligible LITians placed, beats natl trend





HOW IT WORKS

### 100% eligible LITians placed, beats natl trend

Sarfaraz Ahmed @timesgroup.com

Nagpur: Overcoming several challenges, ranging from lack of faculty to poor in frastructure, city's pressigious chemical engineering college Laxminarayan Institute of Technology (LTP) has managed to place all eligible students during the campus recruitment drive for 2018-19. Though LiT has a total intake of 150 in chemical engineering (CE) and chemical eschnology (CT) branches, 100 students qualified for the interviews and all received job offers from public sector companies as well as major cor porate houses.

100 students qualified for the interviews and all received job offers from public sector companies as well as major corporate houses.

Interestingly, on Wednesday, HRD minister Ramesh Pokhriyal Ntshamk announced in Lok Sabba that just 45% engineering graduates were placed through campus recruitments across the country last year in sharp contrast, public engineering institutions in Nagpur seems to have achieved better placement records as compared to the bleak scenario across the country.

paras to the base sent to across the country.

National Fire Service College, run by the ministry of home affairs, too recorded cert per cent placements for the same period and annual packages of Rs10 lakh and above Placement data for this batch of Visvesvarya National Institute of Technology (VNIT) was not available as on Wednesday The institute has placed 1,957 stu-



LIT students were offered average CTC of RS4 Slakh while one of them from CE got the highest puckage of Rs6. Slakh this time. The number of students getting placed has steadily risenfrom 57% in 2016 to 85% now. Out of 150 students, 103 appeared for interviews while rest stayed away be cause of reasons like higher studies plan or starting the own ventures, etc.

► Continued on P 8

## LIT to organise national event 'React 2019' on Feb 27, 28

#### **III** Staff Reporter

LAXMINARAYAN Institute of Technology (LIT) will organise a national event 'REACT 2019' on February 27 and 28 here in which over 400 delegates / students from different parts of the country are expected to participate.

Vinayak Marathe, Vice-President, Reliance Industries, will be the chief guest of the function while Dr S P Kane, Vice-Chancellor, RTM Nagpur University, Dr Pramod Yeole, Prof-VC, RTM Nagpur University, Dr Manoj Ramteke Ramteke, Associate Professor, IIT, Delhi, and Vishal Agrawal from Plasto Tax & Pipes Industries Group, will be the guests of honour. Dr R B Mankar, Director, LIT, will preside over the function.

The features of this national event are: Paper/poster presentation, quiz contest, ASPEn etc. The dignitaries will guide the participants, who will exchange their views.

DrRMMankar, DrRPUgwekar, Dr B A Bhanvase, Dr G S Deshmukh, DrVY Karadbhajne, Shivank Sharma and others are extending active cooperation for the event.



BEHNETT COLEMAN & CO. LTD. ( ESTABLISHED EXIL.) NABPUR ( THURSDAY, INBURRY 7, 2019) \*\*\* PROBEST ( CANTAL ( PRICL RANGE) 77.00 WITH ET OR 1850 WITH INVEHALIAT TIMES

# THE TIMES OF LIT

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Clock Talks 2018 Wins 3rd Prize.

### NEWSLETTERS

LIT has potential in developing food industry in region

### **LIT** की 'द क्लॉक टॉक' को तीसरा पुरस्कार



नागपुर, लक्ष्मीनारायण प्रौद्योगिकी संस्थान ने पहली बार पाँत्रका "द क्लॉक टॉक" इस साल प्रकाशित की. पहले वर्ष में ही उनकी पाँत्रका को पूरे राष्ट्रसंत टुकडोजी महाराज नागपुर यूनिवर्मिटी में तीसरा पुरस्कार मिला. "द क्लॉक टॉक" की इस सफलता पर कॉलेज के निदेशक राजू मानकर और शिक्षक समन्वयक शुभा कोटेक्कर ने पूरी टीम को क्थाई और शुभकामनाएं दी. इन्होंने कहा कि कालेज ने अग्रणी रहने की अपनी परपंरा को जारी रखा है. उन्होंने कहा कि यह वास्तव में हमारे संस्थान के लिए एक बढ़ी उपलब्धि है. टीम की मेहनत और समर्पण के साथ हमें पूरे आरटीएमएनयू में तीसरा पुरस्कार मिला.

र्षांचका के मेकटकीय पैनल में शिशना पाँडे, शून. शेजीकटकारी, हरिया अहम्यत, शियाक शार्च, अगुप कोडारी, दिशा पाँप, मिथिलेश कोगले, अति पाँडे, केंद्रीत अध्यक्त, ओम चतुर्वेदी, राही कुलकर्गी, रेणुका गजालका, समीका बंड, गुण्यल हुलके, प्रणाब राउत, पीयूप अमृतकर, तिशानी हुरमडे, क्षेत्रस मातीस्कर का सम्बन्धेश था.

# 'LIT has potential in developing food industry in region'

# By Ajay Mardhar

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Madhunar Drotmanga

has becility to provide solucition up to graduation (2 Tech) and post-Tech) degrees.

Prof Masiltudar Bilotemange of the Department, solide saling and The Hilmsola, said. "The facilities in bakery has been explored by the industrialism in the region. The clients include ITC and Park. The institute has sperialised reducation and training in ment procession and powervation, from and segments processing, dany products processcessing, dany products process-



ing. The enadence from this mainture energy get jobs in big processing todartties."

Le Rootmange in size a cousultant to Porent Department is processing of family produce, He has conducted training programates to Gadebinski, Ramos Pares. Numberior and Obligationals (60%)

Travel Department for little regimes to preparing expending to and other products book deline, which is too in calcium and more and to very tensificate to patients suffering their joint patients with the Commong cand.

Provide an Nanamenton man Pradeal are rich in Matthew Pradeal are rich in Matthew Pradeal are rich in Matthew The justs has great intelliginal volume and can be ordered easily. The processing units often provide job to tellula his the turnout Elburia and being toude to look fire other has easily produce. which can be presented and marketed within influenting much complicate influenting much complicate.

Collection of honey was permoted by Forger Department through Gandwana Berbs in Garlebresik and Chandbapte (Classif or page)

# विद्यापीठातून एलआयटीची पत्रिका तिसरी

🔷 नागपूर, ११ ऑगस्ट

लक्ष्मीनारायण तांत्रिक संस्थेची यंदाची (एलआयटी) पहिली पत्रिका 'द क्लॉक टॉक' नुकतीच प्रकाशित करण्यात आली. या पत्रिकेला राष्ट्रसंत तुकडोजी महाराज नागपूर विद्यापीठातून तिसरा पुरस्कार मिळाला आहे. ही पत्रिका शिक्षक समन्वयक शुभा कोटंबकर- दाऊतपुरे यांच्या मार्गदर्शनात संपादकीय पॅनलने तयार केली. या पॅनलमध्ये डॉ. शिल्पा पांडे, डॉ. एन. थेजोकल्याणी, डॉ. प्रतिभा अग्रवाल, तर विद्यार्थ्यामधून शिवांक शर्मा, शिवानी हुरमाडे, आयुष कोठारी, दिशा घोष, मिथिलेश कोगजे, श्रुती पांडे, वेदांत अढाऊ, ओम चतुर्वेदी, राही कुलकर्णी, रेणुका गजरवाल, समीक्षा बंड, मृणाल हुलके, प्रणय राऊत, पीयूष अमृतकर, श्रेयस माहीस्कर यांचा समावेश होता. या सर्व टीमची संस्थेचे संचालक डॉ. राजू मानकर यांनी प्रशंसा केली व टीममधील सदस्यांचा गौरव केला. कुलगुरू डॉ. सिद्धार्थविनायक काणे यांच्या हस्ते पत्रिकेला तिसरा पुरस्कार प्रदान करण्यात आला. यावेळी प्र-कुलगुरू डॉ. विनायक देशपांडे, नीरज खटी उपस्थित होते.

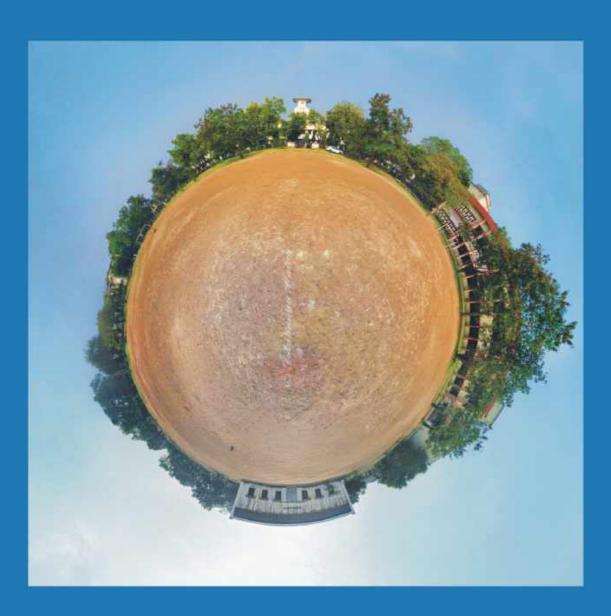




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