



Mahant Bachittar Singh
College of Engineering and Technology
(Approved by AICTE, Govt. of J&K and Affiliated to University of Jammu)
Jammu, J&K State, India

Annual Magazine

Vol VII, 2019

Reflection



 **MAHANT BACHITTAR SINGH**
COLLEGE OF ENGINEERING & TECHNOLOGY

ਮਹੰਤ ਬਚਿਤਰ ਸਿੰਘ
ਕਲਜ ਅੰਦ ਇੰਜੀਨੀਅਰਿੰਗ
ਅੰਦ
ਟੈਕਨਾਲੋਜੀ
ਕਾਲਜ

**A JOURNEY OF THOUSAND MILES
BEGINS WITH A SINGLE STEP**

Message



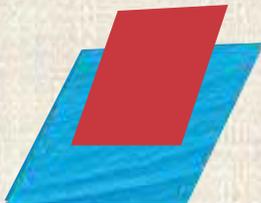
From the Sole Trustee

The magazine presents a glimpse on the growth of the institution on many fronts. The magazine has made an earnest attempt to bring into light the hidden talents and pictured multiple flairs of students and faculty members. I am very much impressed by each and every stuff of the magazine, reflecting positive and creative power of students and faculty members of the college.

I am confident that the college will scale even greater heights in the years to come and serve many more millions in the society.

I sincerely appreciate and congratulate the entire editorial team for their genuine efforts in compiling this magazine.

I wish the students and faculty members of the college for success in their future endeavors.



Srimaan Mahant Manjit Singh Ji

Founder and Sole Trustee

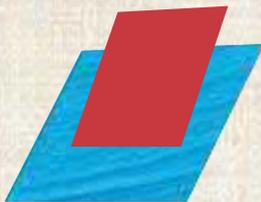
Message



From the Desk of Chairman

It is indeed a very gratifying and exhilarating feeling for me to witness the current issue of our college magazine REFLECTIONS. Our college is primarily a technical institution but with a difference from others in the same domain because we believe in tempering technology with the humane, technicality with imagination and rationality with innovation. All great scientists have also been creative thinkers. Within the folds of their profound wisdom they realised that the two are not mutually exclusive, but one is the very condition of the other. Creativity is a process and not a product oriented activity. It is a process of the metamorphosis of the mind that peels off layer after layer allowing one to access its deep recesses leading to discoveries and innovations that are transcendental and capable of altering the direction of the human civilization.

Education can no longer mean a way to a profession or merely a means to earn a living. It has to mean a competency as well as an aptitude to go beyond the accepted, the available and the present with a desire to contribute to the community, to leave a mark or a presence and to etch one's name in one's chosen domains. REFLECTIONS is an endeavour to provide a platform to the students and the faculty to nurture and nourish such competencies and attitudes. It's an exercise in creativity and imagination to strengthen the rational and the scientific temperament. When I look at the contributions of the budding writers, it gives me great satisfaction to see us inching our way in the right direction. My best wishes to all those involved in this endeavour and I also hope to see much more healthier reflections in the days to come.



Prof. (Dr.) A.S. Sudan
Chairman



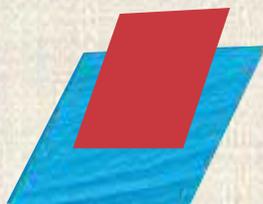
Message

From the Desk of Advisor

The college magazine brings out the unrevealed talents of students and faculty members. It recognizes the names of leading actors in different playing fields and their majestic deeds. I strongly believe that college magazine speaks about the excellence of a college. It is a great pleasure to see the creative titles, its contents and handouts of students and faculty members. Their contributions in the magazine are of worth.

We may take pride through reading unfolding art, talents and originality of students and faculty members, depicted in the magazine.

I put on record and appreciate the job of editorial board whose effort has come to realism through their untiring efforts. We intend to print college magazine every year.



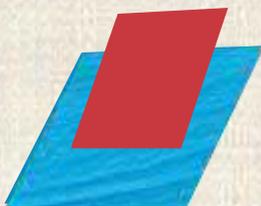
S. Lakhbir Singh Bawa
Advisor



From the Desk of Principal

College magazine gives pleasure to all the brilliant minds when they traverse through the portal of this temple of learning. It is, if truth be told, a pleasure for me to be a part of the team striving to bring out talents of students and faculty members, who have devoted time and added value to the periodical with their powerful stories, meaningful and evocative poems, vibrant drawings and enlightening articles: reflects their creativity and intellects. It is exciting to see principally the amount of fervor of students of the college for the glossy magazine.

I believe that the compilation is an honest portrait of the college: tells about its excellence. It amply demonstrates the communication skills, poetic prowess, imagination and creativity, and technical competence of the intellectuals of the college. I appreciate all the authors for their contributions and the editorial team for their noteworthy efforts in bringing out the publication.



Prof. (Dr.) Anjani Kumar
Principal



M

BS College of Engineering & Technology, Babliana, Jammu is a Sikh Minority College, operated under Sant

Manjit Singh Trust, created for charitable purpose to impart quality education in various technical fields, with a vision to achieve academic excellence by proper schooling and training to prospective leaders of our region. The mission is to offer quality, relevant and cost effective programmes to produce budding professionals as per contemporary requirements of industry and other sectors of employment.

The college is approved by AICTE and affiliated to the University of Jammu, Jammu. It was established in the year 1999 with 4 years B. E. Degree course. Presently we house five disciplines of engineering namely Computer Science & Engineering (CSE), Information Technology Engineering (IT), Electronics & Communication Engineering (ECE), Electrical Engineering (EE) and Mechanical Engineering (ME) with a total intake capacity of 300. Post Graduate Department of the college has 3 years Master in Computer Application (MCA) course with an intake of 60.

The Engineering wing of the college has the approval of Minority Status which means 50% of the total intake in Engineering streams is reserved for Sikh Community, but the students are admitted through entrance examination namely MBS-Special Common Entrance Test (SCET) conducted under the supervision of "Supervisory and Monitoring Constitutional Statutory Committee".

Till date we have admitted 18 batches in Engineering. The

college has the privilege of admitting about 4000 candidates in various Engineering Streams including around 50% of SIKH MINORITY candidates.

A total of 14 batches of Engineering Graduates alongwith 10 batches of MCA have been awarded degree through our institution and they are globally placed in the reputed Multi National Companies (MNCs) and many National Organizations.

Our objective is to impart education with creation, dissemination and application of knowledge in an integrated form. A regular student - faculty interaction helps in grooming the students into leaders and not simply technocrats. Our aim is to produce true citizens of India with good moral values, so that they are a value addition to their community, their region and their country.

Apart from all these, students shall improve their technical ability along with their communicative skills. All these cannot become perfect and accurate suddenly. It has to be planned and cultivated over a period of time and we do it in slow pace from the day first.

High class rich library, computing facility, internet and intranet facility, different educational and recreational facilities of institute enrich the process of learning. We carve out time to balance academics with extra-curricular and co-curricular activities to give an additional dimension to students in all round development. Conducive environment facilitate overall personality development of students. We offer 'Instructive Technology Approach' by our qualified teachers. Our teaching-learning process is mainly based on motivation and motivating factors. We believe in disciplined, secure, congenial, serene, relaxed, and stress free environment of education to achieve the coveted educational destination.



MAHANT BACHITTAR SINGH COLLEGE OF ENGINEERING & TECHNOLOGY

A Constituent of Sant Manjit Singh Trust

(Approved by AICTE, Govt. of J&K & Affiliated to University of Jammu)

Vision of Institute

To be globally acclaimed technical institution for aspiring technocrats and continuously striving to explore new vistas of opportunities.

Mission of Institute

- Providing contemporary and advanced knowledge of engineering & sciences among students in coordinated and integrated manner.
- Developing culture of excellence in teaching, learning and innovation to provide opportunity to the students to become critical thinker and problem solvers.
- Producing competent skilled manpower based on demand of industry, society and corporate world.
- Promoting design & research culture by adopting latest technology and diverse resources for the benefit of society.





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PROGRAM OUTCOMES

- PO1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3. Design / development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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Department of Computer Science Engineering

Vision of the Department

To develop competent professionals in the field of Computer Science & Engineering to meet the challenges of Industry & Society.

Mission of the Department

- Providing contextual and advance knowledge to students in line with industrial trends.
- Promoting effective Teaching and Learning Practices using modern tools and techniques.
- Promoting research and design environment, by providing training in emerging software's and technologies for fostering student's growth.
- Encouraging comprehensive development of the students by inculcating soft skills and ethics in their personality.

Program Educational Objectives (PEOs)

PEO1: Our graduates will have professional competency built with strong foundation in Computer Science and Engineering for global acceptance in industries, higher studies and research.

PEO2: Our graduates will develop computing systems, which enables them to analyze, evaluate and provide intelligent elucidation to meet industry challenges.

PEO3: Our graduates will compete with the challenges of social and professional concern by use of modern tools and software's.

PEO4: Our graduates will exhibit leadership quality, ethics, communication and lifelong learning skills.





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PROGRAM SPECIFIC OUTCOME'S (PSO's)

PSO1: To analyze and design hardware / software systems using various architectural / design patterns, standard notations, procedures and algorithms.

PSO2: To design and develop solutions for real world problems by applying computer and communication network technologies

The Microsoft Office logo, featuring a red 3D cube icon to the left of the word "Office" in a red, sans-serif font.



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DEPARTMENT OF INFORMATION TECHNOLOGY

Vision of the Department

Transforming IT aspirants into technocrats for adapting to rapid technological advancements in Industry and contributing to society.

Mission of the Department

- Integrate academics and research to address challenges of industry
- Maintain labs with hardware and software where students and faculty can enhance their technological skills.
- Provide IT solutions to problems related to interdisciplinary fields.
- Bringing out graduates with high quality knowledge, innovation, ethical and social responsibilities.

Program Educational Objectives (PEOs)

PEO1: Design and develop systems and applications to solve real life problems.

PEO2: Develop professionalism, communication skills, leadership and team work enabling them to adapt the current trends in technology.

PEO3: To inculcate an attitude for life-long learning.

PEO4: To prepare students for higher education.



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Program Educational Objectives (PEOs)

- ❖ Design and develop systems and applications to solve real life problems.
- ❖ Develop professionalism, communication skills, leadership and team work enabling them to adapt the current trends in technology.
- ❖ To inculcate an attitude for life-long learning.
- ❖ To prepare students for higher education.

PROGRAM SPECIFIC OUTCOME'S (PSO's)

- ❖ To analyze and predict solutions for global society using machine learning tools and techniques.
- ❖ To provide solutions for real world problems by applying latest tools and technologies.





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Department of Electronics & Communication Engineering

Vision of Department

To emerge as one of the leading Electronics and Communication Engineering programs in the region committed to achieve excellence consistent with industrial and social demands.

Mission of Department

- M1:** Providing professional competences in the field of Electronics and Communication engineering through modular programs in addition to existing curriculum.
- M2:** Offering state of art pedagogy methods to promote multidisciplinary activities for enhancing critical thinking and problem solving capabilities.
- M3:** Encouraging students to adapt innovative approach to meet current and future industry and social demands
- M4:** Promoting holistic research based approach by providing training in latest technologies through collaboration with industry and engineering professional societies.

Program Educational Objectives (PEOs)

- PEO1:** The graduate will be able to exhibit professional competency in the field of Electronics and Communication engineering to synthesize optimal and socially acceptable solutions.
- PEO2:** The graduate will be able to develop innovative ideas and find creative solutions to meet professional challenges.
- PEO3:** The graduate will be able to pursue post graduate and research based programs to outrival in employment, higher education and industries in allied and diverse fields.
- PEO4:** The graduate will be able to demonstrate high professional ethics and strive for lifelong learning while working in a team or as an individual.



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PROGRAM SPECIFIC OUTCOME'S (PSO's)

PSO1: Ability to adapt advancement in Electronics & Communication Technology and render appropriate professional services.

PSO2: Quest to upgrade & contribute towards the solution of recent challenges in Electronics & Communication Engineering with the help of modern tools.





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Department of Electrical Engineering

Vision of Department

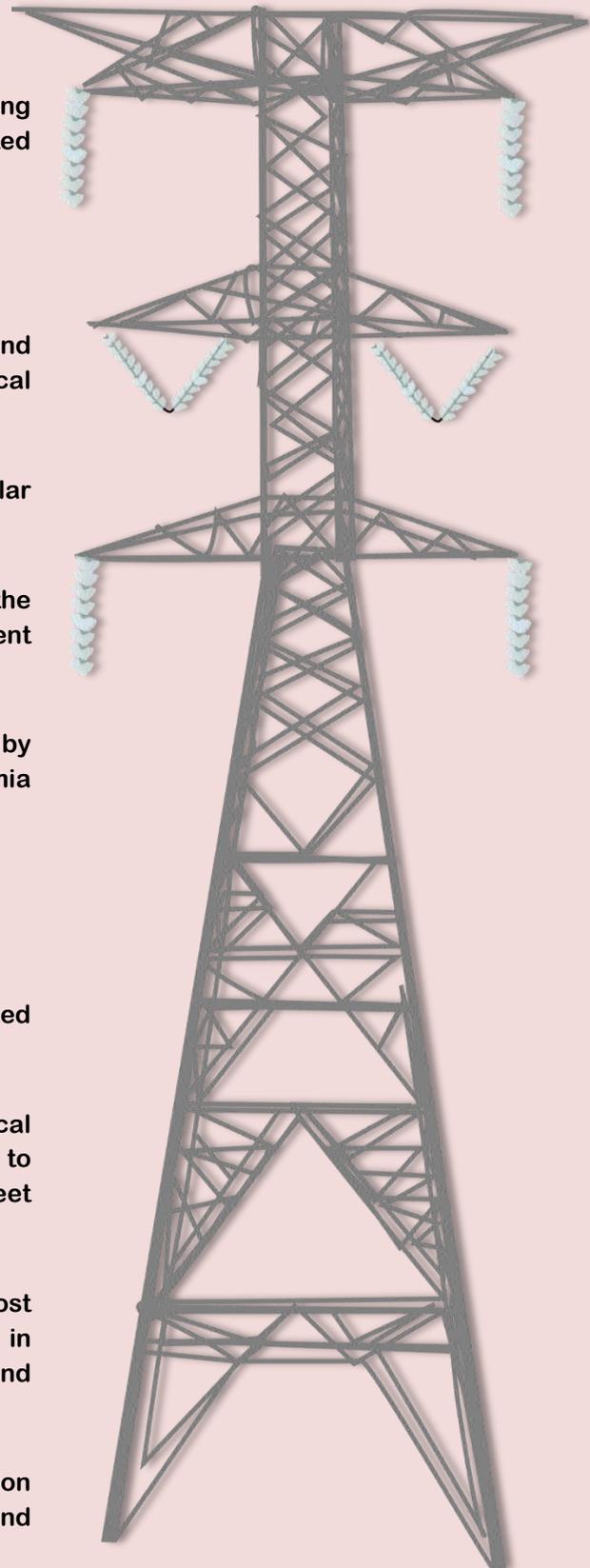
To evolve as a leading program in the field of Electrical Engineering with exposure to contemporary technologies by encouraging ignited minds for future professional challenges.

Mission of Department

- Providing interface with the industry, educational organizations and alumni in the field of curriculum development, training for empirical social development & changing needs of society.
- Engaging in effective teaching, learning using ICT, modular programs, exposure to virtual simulating environment.
- Enabling sustainable and cost-effective innovations, showcasing the importance of green energy technology with a focus on efficient energy management system.
- Promoting holistic development among students and faculty by engaging in joint ventures with internationally acclaimed academia & industrial organizations.

Program Educational Objectives (PEOs)

- PEO1: Outrival in employment, higher education, globalized technology services and to be competent entrepreneur.
- PEO2: Communicate conceptual understanding of core Electrical Engineering courses which enable electrical technocrats to analysis, evaluate, and provide intelligent elucidation to meet professional challenges.
- PEO3: Capable to design and implement innovative and cost effective solutions of complex engineering problems in multidisciplinary environment considering societal and environmental contexts.
- PEO4: Demonstrate leadership qualities, effective communication skills and strive for lifelong learning for career enhancement and exhibit high professional ethics.





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PROGRAM SPECIFIC OUTCOME'S (PSO's)

PSO 1: Equipped with applied knowledge of allied domain to integrate and efficiently manage professionally diverse environment.

PSO 2: Quest to upgrade and contribute toward the solution of recent challenges in electrical engineering with the help of modern tools.





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Department of Mechanical Engineering

Vision of Department

To become a recognized center of excellence for aspiring technocrats in Mechanical Engineering.

Mission of Department

- Providing contemporary and advanced knowledge of Mechanical Engineering amongst the students through a curriculum consisting of modern laboratories, interdisciplinary subjects and industrial trainings; created by means of industry – institute interactions.
- Creating culture of excellence in teaching – learning using hi-tech techniques and collaborating with other institutions along with focus on faculty development programmers.
- Promoting design and research environment, incorporating latest software's in mechanical domain with a focus on enabling viable and economical innovations for the benefit of the society at large.
- Encouraging comprehensive development of students by adopting lifelong learning and sharing for enhancing employability.

Program Educational Objectives (PEOs)

PEO 1: The graduates will have quality education to keep pace with advancement in technologies, hence encouraging them to contribute to the field of education & research, and industry related to mechanical engineering as well as other allied fields.

PEO 2: The graduates will attain essential competence in basic sciences and mechanical engineering fundamentals required to formulate, analyze and solve engineering problems that will empower them to have effective career in core mechanical as well as interdisciplinary industries, and as entrepreneurs.

PEO 3: The graduates will enhance their knowledge and soft skills, encouraging them to innovate and develop sustainable solutions for a progressive society.

PEO 4: The graduates will maintain high ethical standards, establish potential leadership & teamwork abilities, inculcate effective interpersonal skills and engage in lifelong learning for a successful professional career.



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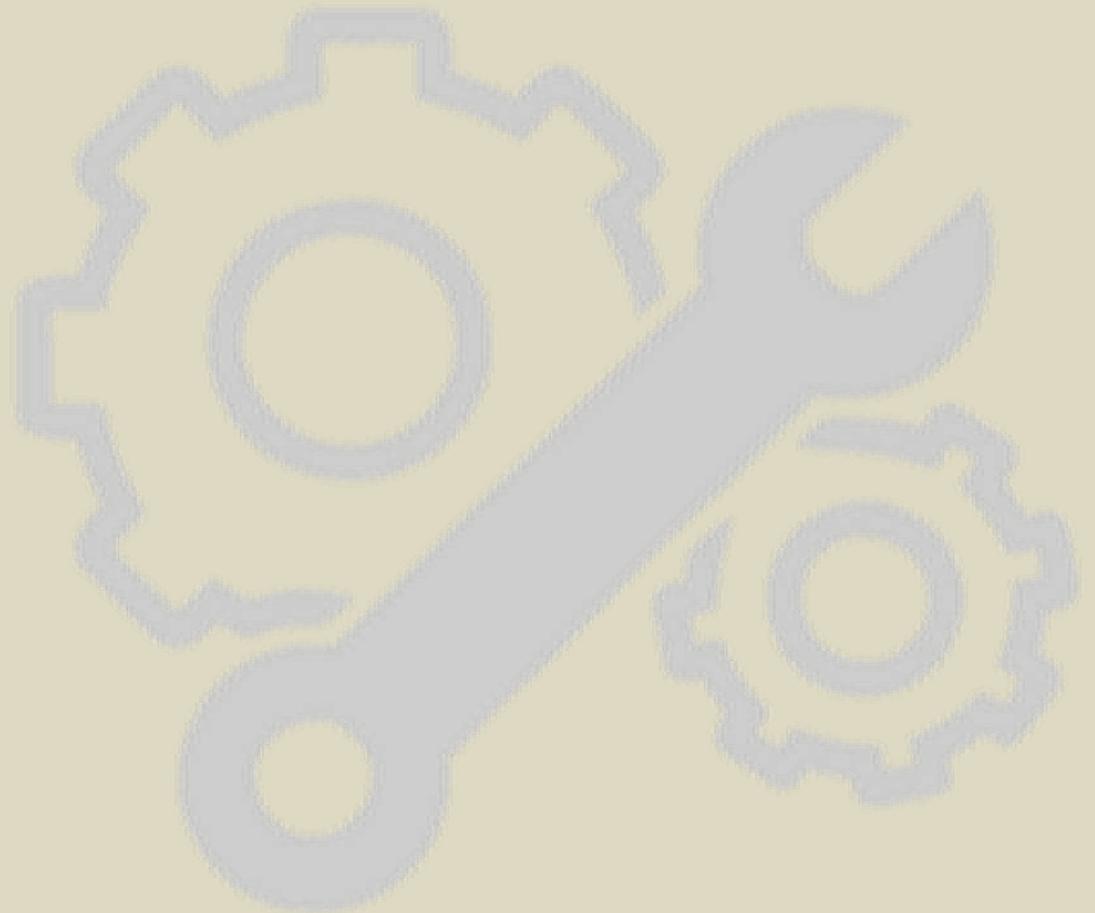
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PROGRAM SPECIFIC OUTCOME'S (PSO's)

PSO 1: Ability to study and analyze useful and innovative materials and related technology for the benefit of industry and society.

PSO 2: Ability to develop proficiency in designing through latest and advanced software tools related to mechanical engineering.



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Micro-Teaching: improvement in pedagogical skills

Micro-teaching is a non-evaluative training concept that can be applied at various pre-service and in-service stages in the professional development of teachers to improve their pedagogical skills. This technique is universally adopted in training courses in order to ensure that the desired skills are actually acquired by the participating teachers. It is a process of subjecting samples of human behaviors to 'five Rs' of video namely recording, reviewing, responding, refining and re-doing.

Teaching is not a mystical phenomenon any more. Teaching may be analyzed according to the types of activities in which a teacher is engaged such as explaining activities, demonstration activities, guidance activities, order maintaining activities, curriculum planning activities, testing and evaluation activities.

The five essential fundamentals of micro-teaching are as follows.

- Micro-teaching provides teachers with a practice setting for instruction in which the normal complexities of the class room are reduced in terms of the dimension, namely length of the lesson, scope of the lesson, number of students and class time.
- Micro-teaching focuses on training for the accomplishment of specific tasks like practice of an instructional skill or demonstration of teaching method, one at a time.

- Micro-teaching allows for increased control of practice factors like time, students, method of feed back and supervision can be manipulated and as a results, a high degree of control can be built into the training profession.
- Micro-teaching greatly expands the normal knowledge of results or feed back dimensions in teaching.
- The most dramatic component in the typical micro-teaching process is the application of the new medium of video-tape recording for optimal and immediate feed back of the training performance.

The term 'Micro-Teaching' was coined in 1963 in Staford University. This concept has grown and developed both in focus and in format. The technique has been field-tested and refined. It has been received quiet favorably in all countries as it acts as a link between theoretical psychology and practical class-room teaching

Micro-teaching is a technique of training in which one learns the skills of teaching through a scaled-down process of teaching-learning. The phrase 'micro' is used to denote the scaling down in class size, time and task of teaching as follows:

- The number of students is reduced; it has to be between 5 and 10.
- The time of presentation is between 5 and 10 minutes.

- The number of instructional objectives and the content is kept low.
- The number of teaching skills are limited; either to just one specific skill at a time or a small number as required to achieve the objectives.
- The plan for teaching is focused on micro events, i.e., execution of the identified skill(s).
- The microanalysis of the teaching process consists of analyzing the minute details of the teaching skills.

Microteaching is conducted in a simulated situation where a group of learners get together and organize themselves. When one of them teaches, the others play the role of students. After the teaching encounter, all of them act as peers and offer constructive criticism to one another.

A teaching skill is defined to students in terms of a general description of the teaching behaviour by the following procedure of micro-teaching.

- **Recording:** Each trainee teaches a short lesson of about 5 to 10 minutes to a group of about 5 to 10 pupils, concentrating on and using the defined skill. The lesson is recorded in videotape.
- **Reviewing:** The videotape of the lesson is viewed by trainees, a supervisor and the pupils. The pupils fill in the response sheets.

- **Responding:** The lesson is discussed in terms of the defined skill and the trainee considers ways in which its might be improved.
- **Refining:** The trainee re-plans the lesson modified in the light of his own self-assessment, the supervisor's suggestions and the response of the pupils.
- **Re-doing:** The trainee re-teaches the lesson to a second group of 5 to 10 pupils.

Micro-teaching is intuitively appealing as a way of providing practice in teaching. The curiosity of trainees to see themselves as others see them is satisfied and when guided practice leads to improvement in the skill, there is sense of achievement.

Micro-teaching may add real meaning to the courses in educational psychology because it provides an opportunity to practice the taught courses. Both beginners as well as experienced teachers may find microteaching a safe, realistic setting in which one can develop professional competencies, for skill training, trying out new instructional techniques as well as experimenting on new curriculum materials.

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Anjani Kumar, Principal
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PROTECTING OUR CHILD FROM SEXUAL ASSAULT?

Sexual abuse can happen to children of any race, socioeconomic group, religion or culture. There is no foolproof way to protect children from sexual abuse, but there are steps you can take to reduce this risk. If something happens to your child, remember that the perpetrator is to blame—not you and especially not the child.

Some precautions you can take to help protect the children in your life.

1. BE INVOLVED IN THE CHILD'S LIFE:

Being actively involved in a child's life can make warning signs of child sexual abuse more obvious and help the child feel more comfortable coming to you if something isn't right. If you see or hear something that causes concern, you can take action to protect your child.

Show interest in their day-to-day lives -

Ask them what they did during the day and who they did it with. Who did they sit with at lunchtime? What games did they play after school? Did they enjoy themselves?

Get to know the people in your child's life - Know who your child is spending time with, including other children and adults. Ask your child about the kids they go to school with, the parents of their friends, and other people they may encounter, such as teammates or coaches. Talk about these people openly and ask questions so that your child can feel comfortable doing the same.

Choose caregivers carefully - Whether it's a babysitter, a new school, or an afterschool activity, be diligent about screening caregivers for your child.

Talk about the media - Incidents of sexual violence are frequently covered by the news and portrayed in television shows.

Ask your child questions about this coverage to start a conversation.

Questions like, "Have you ever heard of this happening before?" or "What would you do if you were in this situation?" can signal to your child that these are important issues that they can talk about with you

Know the warning signs - Become familiar with the warning signs of child sexual abuse, and notice any changes with your child, no matter how small. Whether it's happening to your child or a child you know, you have the potential to make a big difference in that person's life by stepping in.

2. ENCOURAGE CHILDREN TO SPEAK UP:

When someone knows that their voice will be heard and taken seriously, it gives them the courage to speak up when something isn't right. You can start having these conversations with your children as soon as they begin using words to talk about feelings or emotions.

Teach your child about boundaries - Let your child know that no one has the right to touch them or make them feel uncomfortable — this includes hugs from grandparents or even tickling from mom or dad. It is important to let your child know that their body is their own. Just as importantly, remind your child that they do not have the right to touch someone

else if that person does not want to be touched.

Teach your child how to talk about their bodies - From an early age, teach your child the names of their body parts. Teaching a child these words gives them the ability to come to you when something is wrong. Learn more about talking to children about sexual assault.

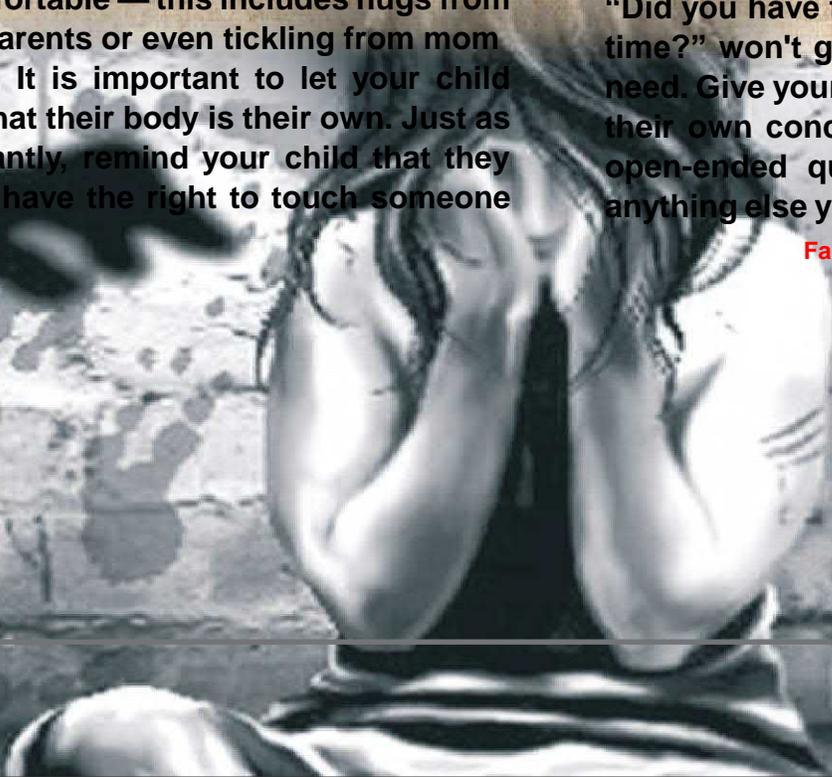
Be available - Set time aside to spend with your child where they have your undivided attention. Let your child know that they can come to you if they have

questions or if someone is talking to them in a way that makes them feel uncomfortable. If they do come to you with questions or concerns, follow through on your word and make the time to talk.

Let them know they won't get in trouble - Many perpetrators use secret-keeping or threats as a way of keeping children quiet about abuse. Remind your child frequently that they will not get in trouble for talking to you, no matter what they need to say. When they do come to you, follow through on this promise and avoid punishing them for speaking up.

Give them the chance to raise new topics - Sometimes asking direct questions like, "Did you have fun?" and "Was it a good time?" won't give you the answers you need. Give your child a chance to bring up their own concerns or ideas by asking open-ended questions like "Is there anything else you wanted to talk about?"

Faiqa Shah (Electrical Engineering)



PHYSICS

IN OUR DAILY LIFE

We are living in the century of science and technology. Introduction of science has transformed our lives. When people had no idea about science, even then their lives were governed by principles of different branches of science. When we light a fire, it is a chemical process; when we eat and digest food, it is biological process; when we walk on earth, it is governed by laws of physics; when an earthquake occurs, it's a seismic activity; when we talk about different terrains and gems of earth surface, it is related to geology. Therefore, physics governs our everyday lives and is involved in a number of activities we perform.

Physics is considered as a natural science because it deals with things like matter, force, energy and motion as these all are related to our everyday life. Physics define how everything works around us. How the universe works, how earth moves around the sun, how lightening strikes, how our refrigerator works and many more. When we look around us, we can see a number of things that work on the principles of Physics. We can explain our several activities by making use of the knowledge of Physics.

Walking: While walking, Newton's three laws of motion are applied. First law of motion states that, a body remains in state of rest unless a force is applied on it. When we are at rest, inertia is at maximum. Body needs largest amount of force to get out of state of inertia, i.e when we start walking. When we take first step the energy is transferred from foot to upper body parts and we start moving, during the process of walking inertia keeps on changing increases when we set foot on ground and decreases when we move the foot up. Second law of motion states that acceleration is directly proportional to the force we exert while walking, therefore, when we apply more force, our acceleration will increase. Third law of motion is about action and reaction, when we set foot on ground we exert force on it and as a result to it ground exerts reactionary vertical force on body.

Cooking: Thermodynamics is a branch of physics that deals with heat, temperature and work done due to it. Heat is a form of energy that can be transferred from one medium to another i.e heat transfer. For heat transfer, heat travels from hotter surface to cooler. When we put pan, with water or something else in it, on burning stove the energy in flame of stove touches cold pan, it starts transferring heat to the pan thus making it hooter. This phenomenon is called conduction. Convection is a process of movement of molecules in liquid and gases. When we heat the pan, the water molecules on the base of pan start heating up, a time comes when they get enough energy and become hotter than the molecules around them, then they start moving to the surface of water. The water molecules on the



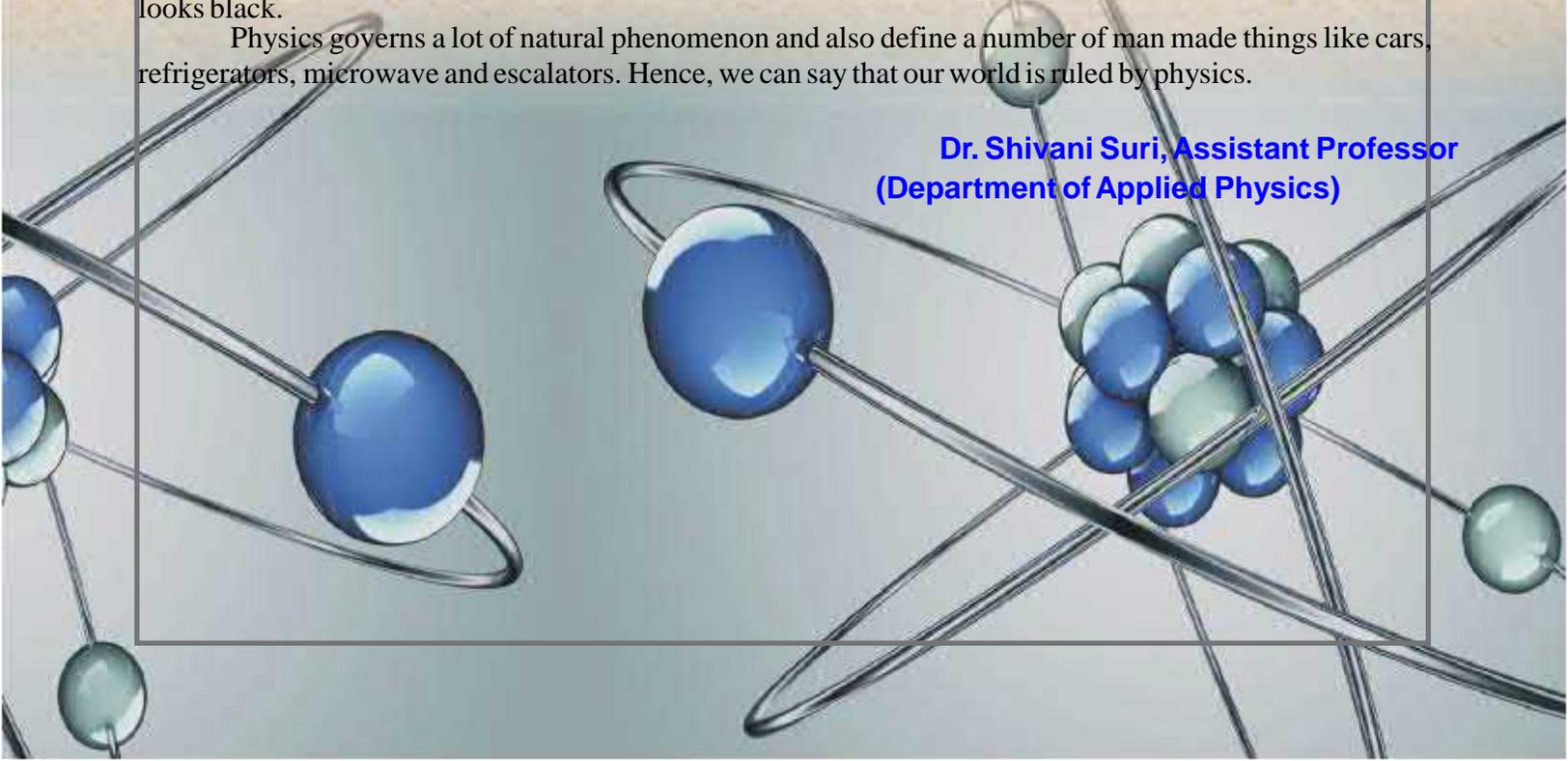
surface are cooler and heavier from hot water, due to less heat energy, thus start moving down, this process continues until all water comes at same temperature. The cooking process is an open system, because in this both matter and energy is lost. According to zeroth law of thermodynamics energy should be conserved, in our case the energy lost by flame is used by pot to heat water and thus the total energy remains conserved. If we use pressure cooker it uses heat energy to bring spontaneous changes into food by using kinetic energy of molecules to bring chemical changes in food; thus satisfying law of thermodynamics that spontaneous works are done due to work energy

Cutting fruits and vegetables When we cut fruit and vegetable, we never realize that physics could be involved in this simple task, but, surely it is. In order to cut anything, we have to exert pressure on knife. When we increase the pressure we can cut an object easily. Pressure is dependent on force and area i.e directly dependent on force and inversely dependent on area. In simple terms we can say that when we exert more force we can cut an object easily, but, if same force is applied with a knife with thicker edges, we cannot cut the object. it. From experiences we learn that the knives which have edges with smaller surface area can help to cut an object easily. Similarly, we can cut easily with a sharper knife than blunt. The blunt knife offers more friction, due to its rough edges; thus making it difficult to cut an object.

Seeing :Our eyes are an incredible gift by God. We see wonders of the world, by this small organ. When we talk about parts of body and their function, it is the general concept that we are talking about biology. But, we neglect the fact that functions of our body parts are also working under the laws of physics and chemistry. If we talk about the sense of seeing, we come to know that our eyes work as a camera to see things around us. The lens in our eyes is convex i.e it converges or focuses light. When light enters our eye, cornea and lens focus the light. Iris controls the amount of light entering the eye and iris creates an image on retina, which is real and inverted i.e like in camera. The image of light is converted into electrical signal, by photoreceptors, and sent to vision centre of brain by optic nerve. The vision center analyses the electric signal and arranges it into its original form i.e to be seen by eye. The image we can see is due to the amount of light reflected from that object. This is the reason why we cannot see in dark. Eye can perceive different shapes and colors of the objects. Light consists of seven colors, when it falls on an object say, book of color red, it absorbs all the colors and reflect red color. This helps us to interpret that the cover of this book is red. When light falls a white object then it reflects all the colors and that's why it seems white (we also regard light as white light). Similarly, when light falls on black object it absorbs all the light and reflects nothing that's why that object looks black.

Physics governs a lot of natural phenomenon and also define a number of man made things like cars, refrigerators, microwave and escalators. Hence, we can say that our world is ruled by physics.

**Dr. Shivani Suri, Assistant Professor
(Department of Applied Physics)**



Don't Stop

The world is so vast.
But, you give it a thought;
there are those beings
which can't even be seen.
And still doing their part,
moving forward in their lot.
Now think about a human;
continuously going through evolution.
Because of the ones who served the humanity.
Didn't spoil their lives in vanity.
Think about you!
What did you pursue?
Same traits we all got.
But what good have we brought?
Stand up! Start your journey.
Don't Stop,
till you reach the top.
Have an aim,
get something to proclaim.
Be proficient to your sphere,
Serve your purpose till you are here!

Ramandeep Kour, 7thsem(ECE)





HAPPINESS

Happiness can be created on demand –that is the mind can be trained to release chemicals inside the body that can lead to developing happiness where and when we want it.

Research has been done to find out the reason for drug opium to have its euphoric effect. It was found that a special kind of chemical messenger, called 'endogenous morphine', or commonly called 'endorphin' control pains and creates pleasure. These are happy chemicals inside us. The mind can be taught to release endorphin inside the body by natural techniques .Happiness can be triggered by:-

Having clear goal: - Having clear objective, intention acts as sort of an organizing principle for our attention, filtering our experience from a world of many possibilities to selective collections of experience allows us to make sense of what is going around us and then respond accordingly.

Immediate Feedback:- In order to make the human brain function to achieve the given objective ,we must give it continual feedback as whether we are moving towards the right direction or not.

Concentrate on a single task: - You should develop the ability to concentrate on the task at hand. Creativity is enhanced when you focus on one thing at a time. Sir Isaac Newton, when asked how he came up with the theory of gravity , said , ' You would have come up with it too if you had spent all your time thinking of nothingelse!' .

The possibility of successfully completing the task: - Keeping hope is the one of the mantra to success. We must generate a feeling of possibility or hope of doing the task in right manner .Right attitude and actions which are within our control increases the likelihood of achieving what we want .Allow others to participate in your goal as it makes your mind and heart believe that you are making right path to success.

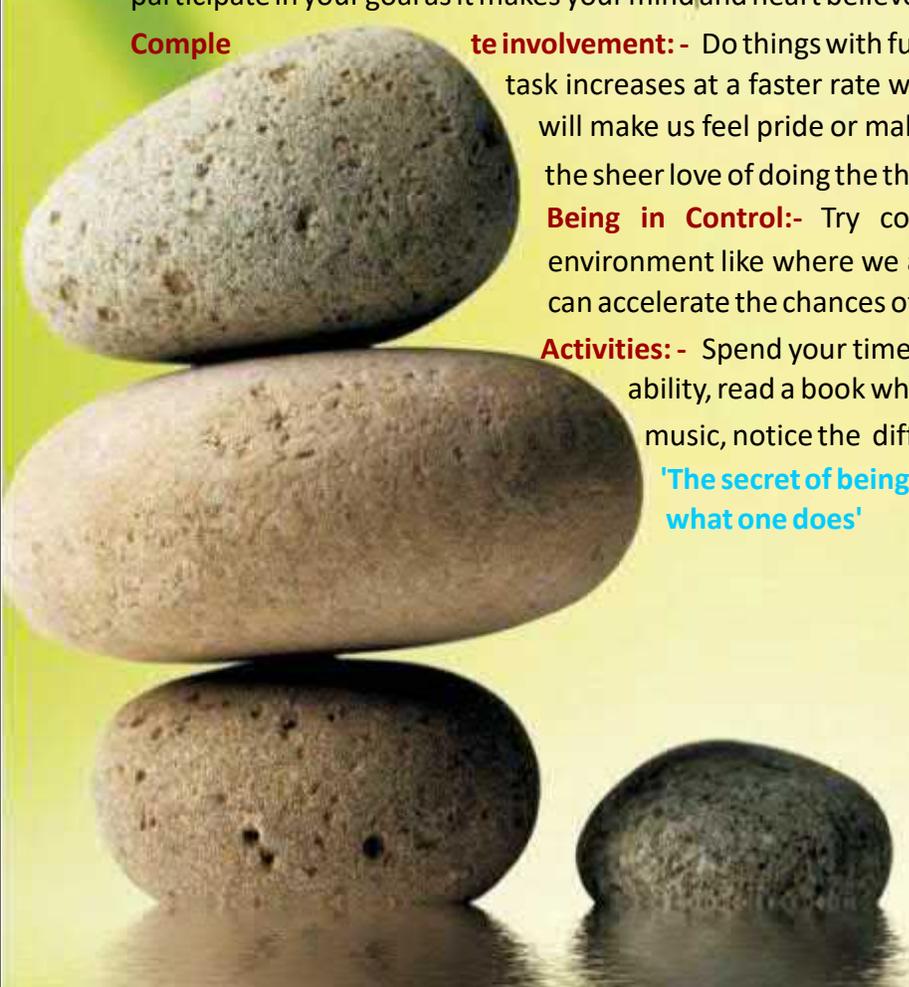
Complete involvement: - Do things with full enthusiasm. The likelihood of completing a task increases at a faster rate when we do things not because we believe it will make us feel pride or make us earn money but when we do things for the sheer love of doing the things.

Being in Control:- Try controlling over the simplest elements of environment like where we are sitting, how things are arranged etc, we can accelerate the chances of experiencing joyfulness in our daily lives.

Activities: - Spend your time intelligently. Indulge in sports that test your ability, read a book which will give you illumination, dance, listen to music, notice the differences in taste of exotic food.

'The secret of being happy is not doing what one likes, but liking what one does'
J.M BARRIE

Jasmine kaur (Asst.professor ,H.S.S)
Preeti kaul (Asst.professor,H.S.S)





“SOMETIMES, WE NEED TO SAY NO SO THAT WE HAVE MORE TIME TO SAY YES “. SUZETTE HINTON

We believe in saying 'Yes' to people so that we do not hurt others, we do not miss out the opportunities, fun and other experiences. However we do not realize that we have wasted time by not saying 'No' to things which are not important. Having said 'Yes' make us feel more stressful when we are not capable or do not have time to do things later for which we said yes. Half of our troubles could be traced to situations when we have said yes too quickly without analyzing the consequences .We as social animals have stereotyped the meaning of the word 'No 'to be bad or negative .But, in fact the truth is that no when used wisely acts like an affirmation word .Its only when we choose to say no to potential threats in our life that we safe guard our personal interests .We all have passed through the dilemma of saying simply no without any justifiable explanation it just doesn't seem right ? We tend to explain ourselves giving reasons for our straightforward 'No'. But what we don't realize that no is a complete expression in itself .But yet the thought of saying no is a little bit scary at first. Once we overcome this fear of saying no we can start saying it in a polite and respectful way. One needs to think about the positive experience one had with saying no and use this as motivation to once again overcome the anger, fear and guilt associated with saying 'No'. For some people, saying 'No' is even more hard , almost close to impossible though their mind is urging them to do so their body tense with a no hovering on the tip of their tongue , but alas! Its sadly a yes for them always even if it means compromising with their own happiness.

Saying 'No' to people is the most difficult thing. We just say 'Yes' to things we can't do or do not want to do as to say 'No' is difficult. So the question is

Why do we say 'Yes' for things when we should say 'No'?

There can be various reasons for not saying 'No' and these can be many like, we say 'Yes' to people as we don't want people feel hurt by our 'No'.

We want to avoid confrontation so we are afraid to say 'No'. In such cases we don't want to disappoint others because we know how bad it feels when others say no to us .

To please other persons we are afraid to say 'No'. We do not want to let down our image of being very nice, of being always helpful and supportive. So we say 'YES' to things even if we have made up our mind to say no we struggle with the language to say no without appearing to be selfish .

Fear of rejection by the other person .As humans we want people to like us and feel sad when rejected by others . However ,saying no in such situations we allow ourselves time for activities and events that are more important for us and our family.

We are afraid of saying 'No' to people because of fear of consequences. Our fear of conflict and desire to keep peace stops us from telling the word no .

The word 'No' tends to be associated with negativity, so saying 'No' isn't easy. A 'Yes' slips from our mouth as we don't know what else to say when the other person is anticipating an answer.

People should learn the art to say 'No' .It can be said in the following ways:-

Be Polite, It is necessary to say 'No' but it should be said in a polite tone. With proper body language. So that the other persons sentiment is not hurt be your 'No'.

Say 'No' **indirectly**, saying no can be awkward. So start with an indirect approach. Instead of directly saying 'No' use positive words with reasons why you can't do it. Use of phrases,

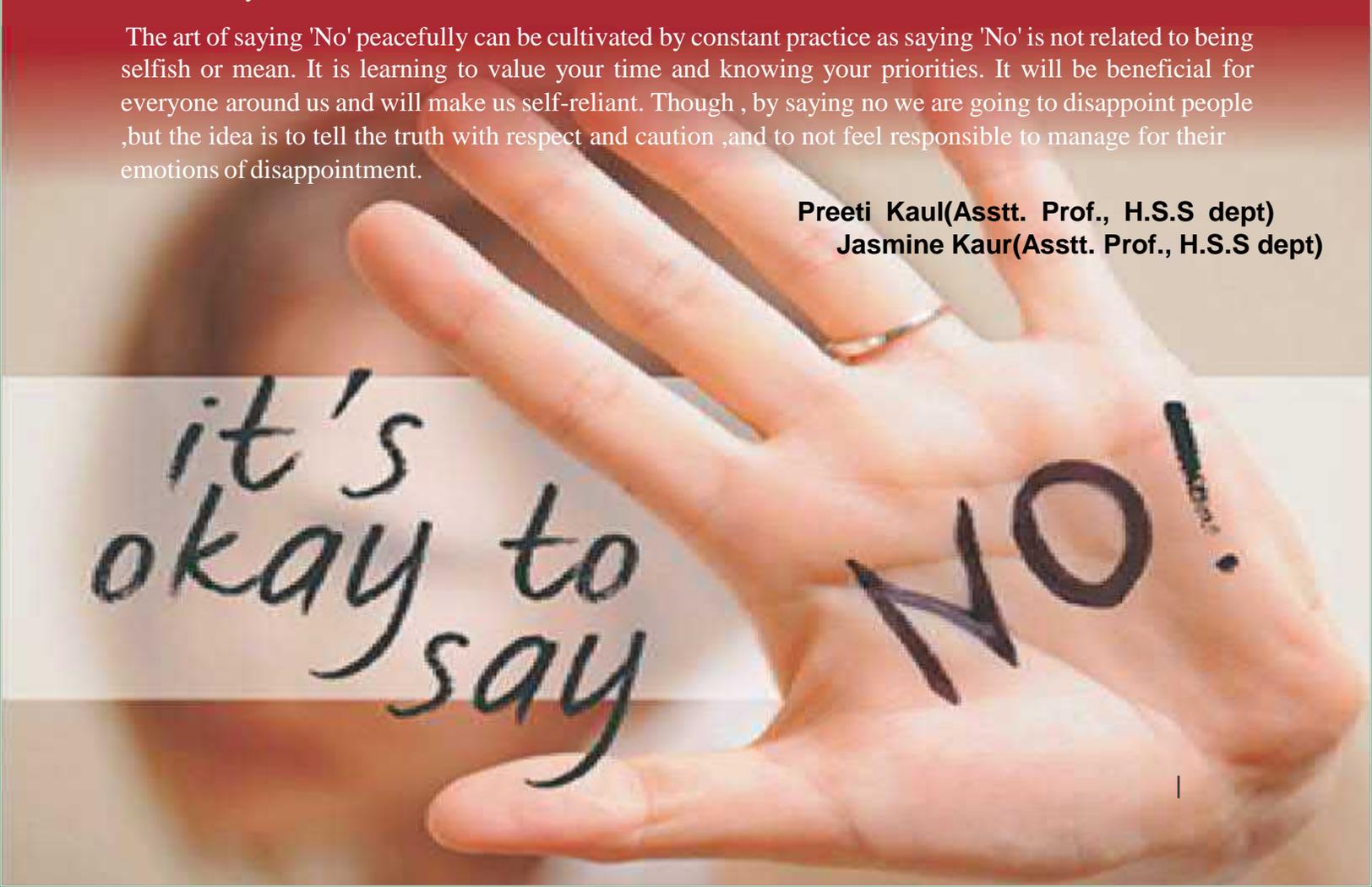
'I will be delighted to do it but...'

'I would be happy to help you.....'

'I am so sorry.....'

The art of saying 'No' peacefully can be cultivated by constant practice as saying 'No' is not related to being selfish or mean. It is learning to value your time and knowing your priorities. It will be beneficial for everyone around us and will make us self-reliant. Though , by saying no we are going to disappoint people ,but the idea is to tell the truth with respect and caution ,and to not feel responsible to manage for their emotions of disappointment.

Preeti Kaul(Asstt. Prof., H.S.S dept)
Jasmine Kaur(Asstt. Prof., H.S.S dept)



it's
okay to
say

NO!

3d ORGANS/BIOPRINTING

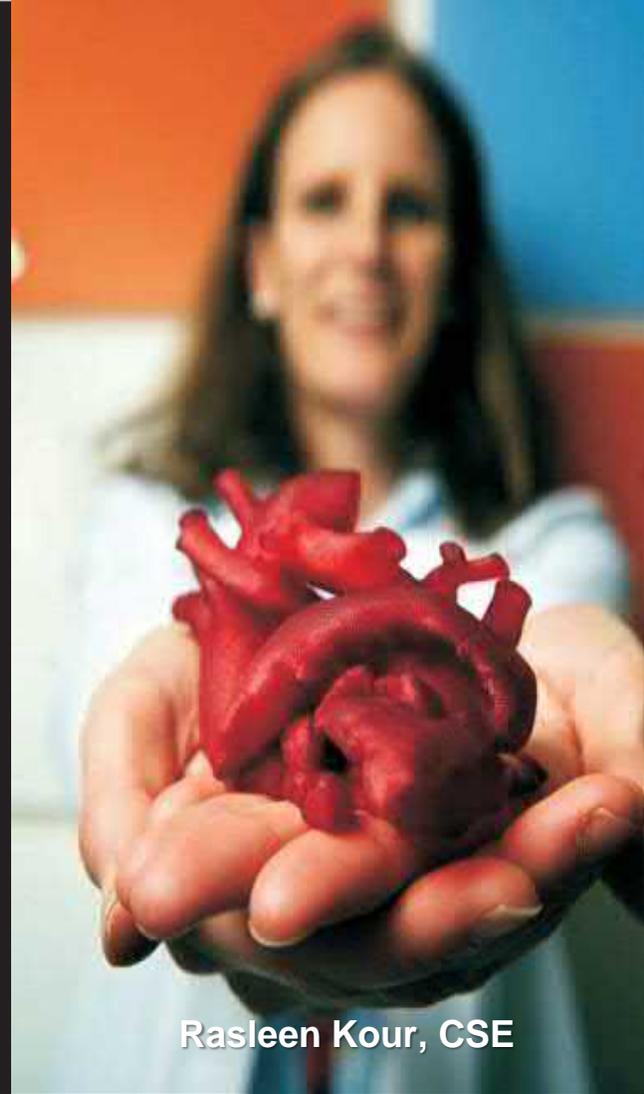
For years, scientists have been able to "print" types of human tissue using a 3D printers, but in a significant leap forward by US and Australian researchers they can now make that tissue survive on its own.

Organovo's bioprinting process centers around the identification of key architectural and compositional elements of a target tissue, and the creation of a design that can be utilized by a bioprinter to generate that tissue in the laboratory environment.

Once a tissue design is established, the first step is to develop the bioprocess protocols required to generate the multi-cellular building blocks-also called bio-ink- from the cells that will be used to build the target tissue.

The bio-ink building blocks are then dispensed from a bioprinter, using a layer-by-layer approach that is scaled for the target output. Bio-inert hydrogel components may be utilized as supports, as tissues are built up vertically to achieve three-dimensionality, or as fillers to create channels or void space within tissues to mimic features of native tissue.

The bioprinting process can be tailored to produce tissues in a variety of formats, from micro-scale tissues contained in standard multi-well tissue culture plates, to larger structures suitable for placement onto bioreactors for biomechanical conditioning prior to use.



Rasleen Kour, CSE

Amusing Facts about Technology & Internet



- The majority computer users blink 7 times per minute as compared to the normal blink rate of 20 blinks per minute.
- E mail was invented before the web
- On a regular work day for a typist, their fingers travel at an average of about 12.6 miles per day.
- The state of ALASKA is the only state whose letters can be typed in a straight row of keyboard letters.
- There are more than 1 million domain names that are registered online per month.
- Apple, Microsoft, HP and Google are all IT applications that started developing in a garage.
- Computer programming is an occupation that is growing faster than any other.
- As of year 2012, there are currently 17 billion devices that are connected or related to the internet and the use of internet.
- If you are able to find a way to hack into facebook then they will pay you upto \$ 500.
- Sweden has the highest percentage of internet users, they are 75%.
- Hong Kong is the world's fastest Internet place. At this speed you can download HD movie in about 4 minutes.
- United states is the largest country on Facebook, India standing third.



An Innovative step

Windows Holographic is an augmented reality computing platform created by Microsoft that is set to be introduced in the window 10 operating system upon its release in 2015.

With windows holographic API5 , which are enabled in all versions of window 10 (including window 10 or phone and small tablets), augmented reality features can be readily implemented on any windows universal app across wide range of windows 10 devices.

MICROSOFT HOLOLENS is a smart glass unit that is cordless self-contained windows 10 computer. It uses advance sensor, a high definition 3D optical head mounted display and spatial sound to allow for augmented reality applications with a natural user interface that user interacts with through gaze, voice and hand gestures. Applications showcased for Microsoft hololens include Holostudio, a 3D modeling application which can produce output for 3D printers

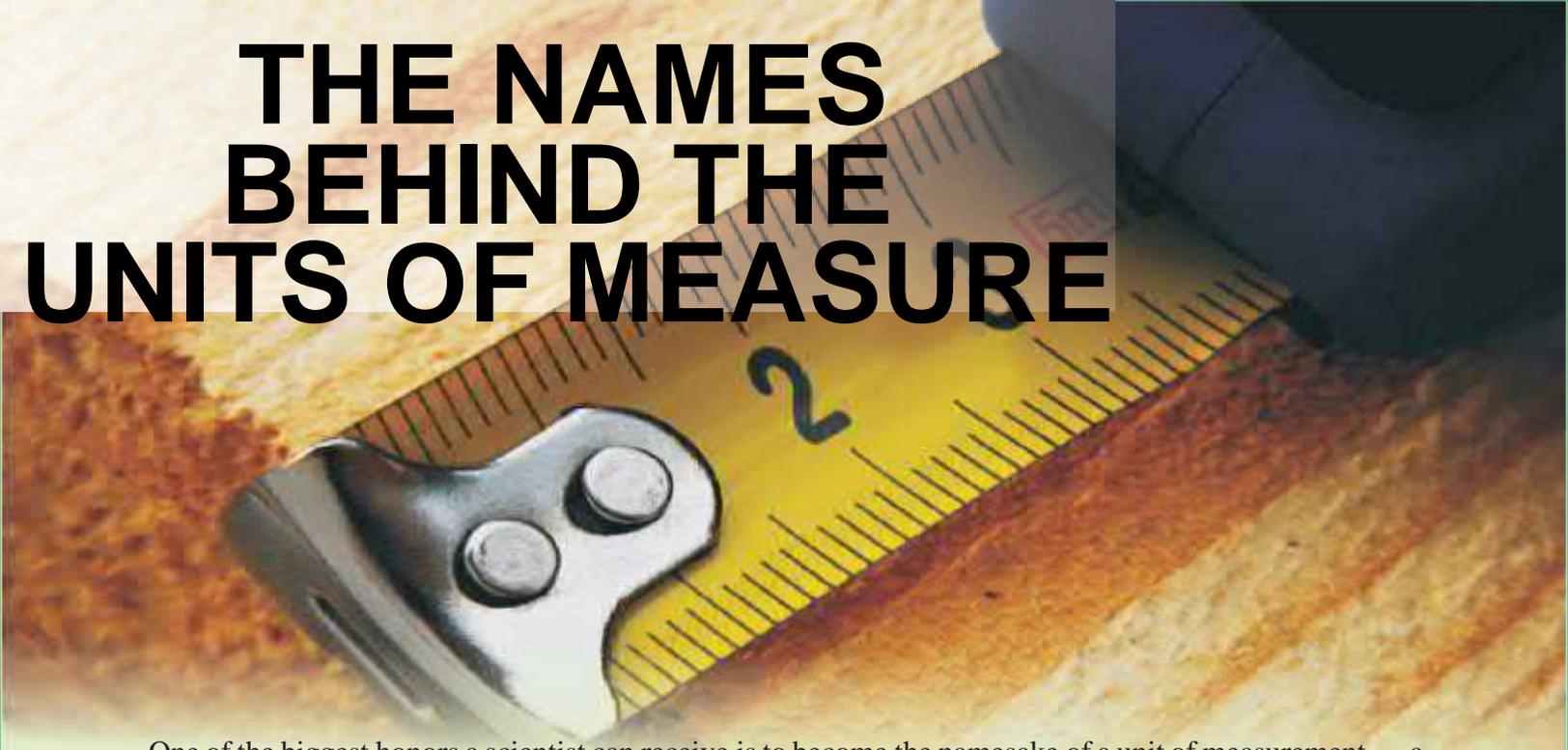
Among the sensor types used in Hololens is an energy efficient depth camera with a 120° x 120° field of view. Other capabilities provided by the sensors include head-tracking, video capture and sound capture.

In addition to high end CPU and GPU, Hololens features a HPU (Holographic Processing Unit) a Co-processor which efficiently integrates data from various sensors

The HPU allows the Hololens to perform tasks such as spatial mapping, gestures recognition and voice and speech recognition while operating without cords or wires

HOLO - LENS

THE NAMES BEHIND THE UNITS OF MEASURE



One of the biggest honors a scientist can receive is to become the namesake of a unit of measurement — a fitting reward if they are the ones who discovered what's being measured in the first place. (All four of our “Rushmore” scientists have units named after them, though only Newton's made it into the official International System of Units.) Sometimes, though, the label is all we know of the scientist. Let's revisit the people behind the units.

Daniel Gabriel Fahrenheit (1686–1736) The Dutch physicist invented alcohol and mercury thermometers as well as the temperature scale that now bears his name (and perplexes the world outside the U.S. and a handful of other countries), with 0 (zero) degrees marking the temperature of a 1-1 mix of ice and salt.

Anders Celsius (1701–1744) A well-traveled Swedish astronomer and professor at Uppsala University, he invented the Celsius (also called centigrade) temperature scale. In the system, now used worldwide, water freezes at 0 (zero) degrees and boils at 100 degrees.

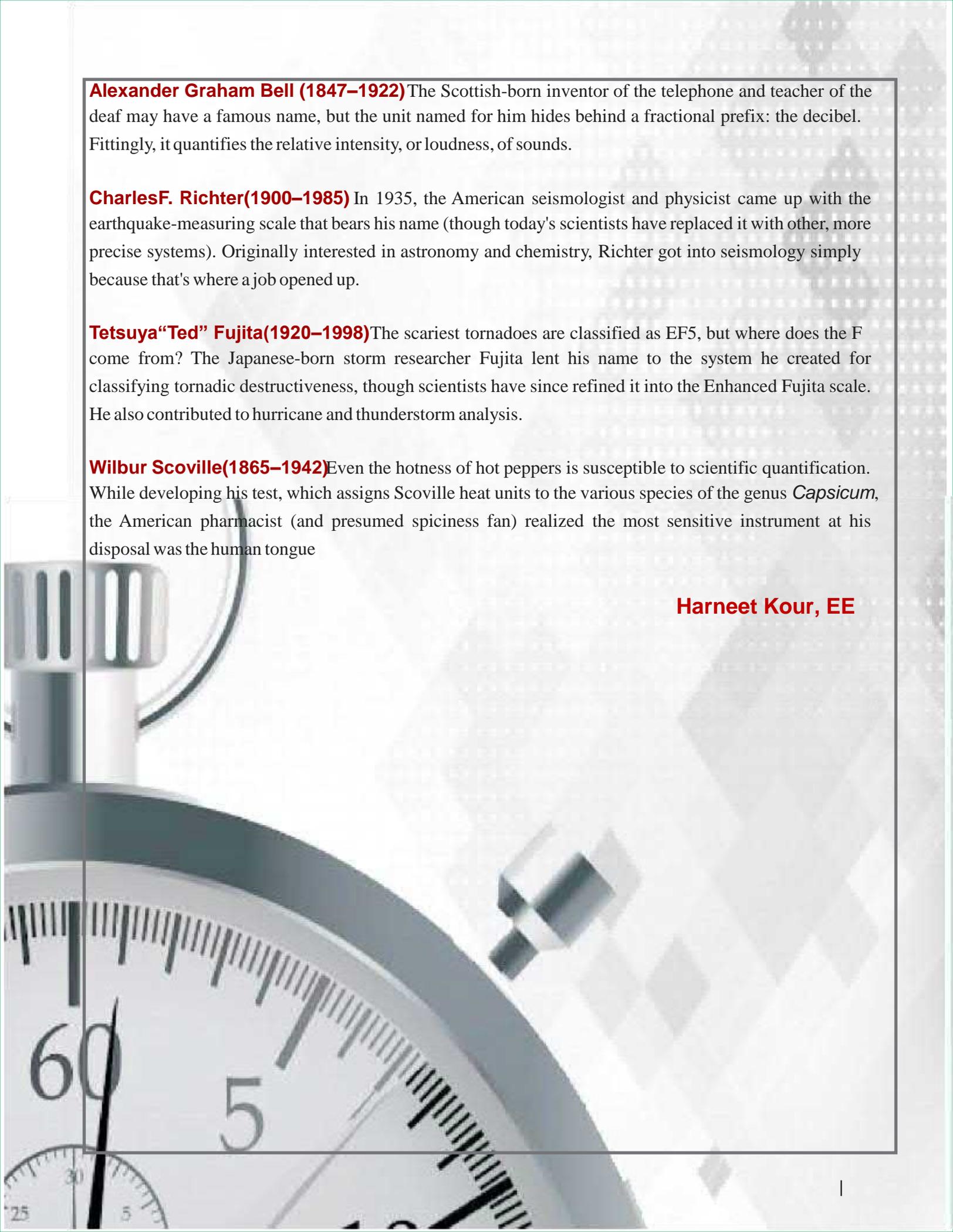
William Thomson Lord Kelvin (1824–1907) The British mathematician and physicist helped establish thermodynamics and invented our third temperature scale: 0 is equivalent to absolute zero, the theoretical coldest temperature possible. It isn't measured by degrees, but individual Kelvin's.

James Prescott Joule (1818–1889) The unit that measures work, or energy (a force acting over distance), honors the British physicist who established that all forms of energy are equivalent. He also developed thermodynamics, along with Lord Kelvin.

Alessandro Volta (1745–1827) The namesake behind today's volts, which measure differences in electrical potential, Italian physicist and experimentalist Volta discovered methane, used his tongue to detect electricity and invented the first electric battery.

André-Marie Ampère (1775–1836) Another major electrical unit, the current-measuring ampere, takes its name from this French physicist. He was one of the main founders of the science of electromagnetism, which he christened “electrodynamics.”

Max Planck (1858–1947) The German theoretical physicist invented quantum theory, so of course his unit is hard to grasp. The Planck length (1.616×10^{-35} meters), a tiny fraction of a proton's diameter, is theoretically the smallest possible measurable length.



Alexander Graham Bell (1847–1922) The Scottish-born inventor of the telephone and teacher of the deaf may have a famous name, but the unit named for him hides behind a fractional prefix: the decibel. Fittingly, it quantifies the relative intensity, or loudness, of sounds.

Charles F. Richter (1900–1985) In 1935, the American seismologist and physicist came up with the earthquake-measuring scale that bears his name (though today's scientists have replaced it with other, more precise systems). Originally interested in astronomy and chemistry, Richter got into seismology simply because that's where a job opened up.

Tetsuya “Ted” Fujita (1920–1998) The scariest tornadoes are classified as EF5, but where does the F come from? The Japanese-born storm researcher Fujita lent his name to the system he created for classifying tornadic destructiveness, though scientists have since refined it into the Enhanced Fujita scale. He also contributed to hurricane and thunderstorm analysis.

Wilbur Scoville (1865–1942) Even the hotness of hot peppers is susceptible to scientific quantification. While developing his test, which assigns Scoville heat units to the various species of the genus *Capsicum*, the American pharmacist (and presumed spiciness fan) realized the most sensitive instrument at his disposal was the human tongue

Harneet Kour, EE

STRENGTH AND COURAGE

It takes strength to be firm,

It takes courage to be gentle.

It takes strength to conquer,
It takes courage to surrender.

It takes strength to be certain,
It takes courage to have doubt.

It takes strength to fit in,
It takes courage to stand out.

It takes strength to feel a friend's pain,
It takes courage to feel your own pain.

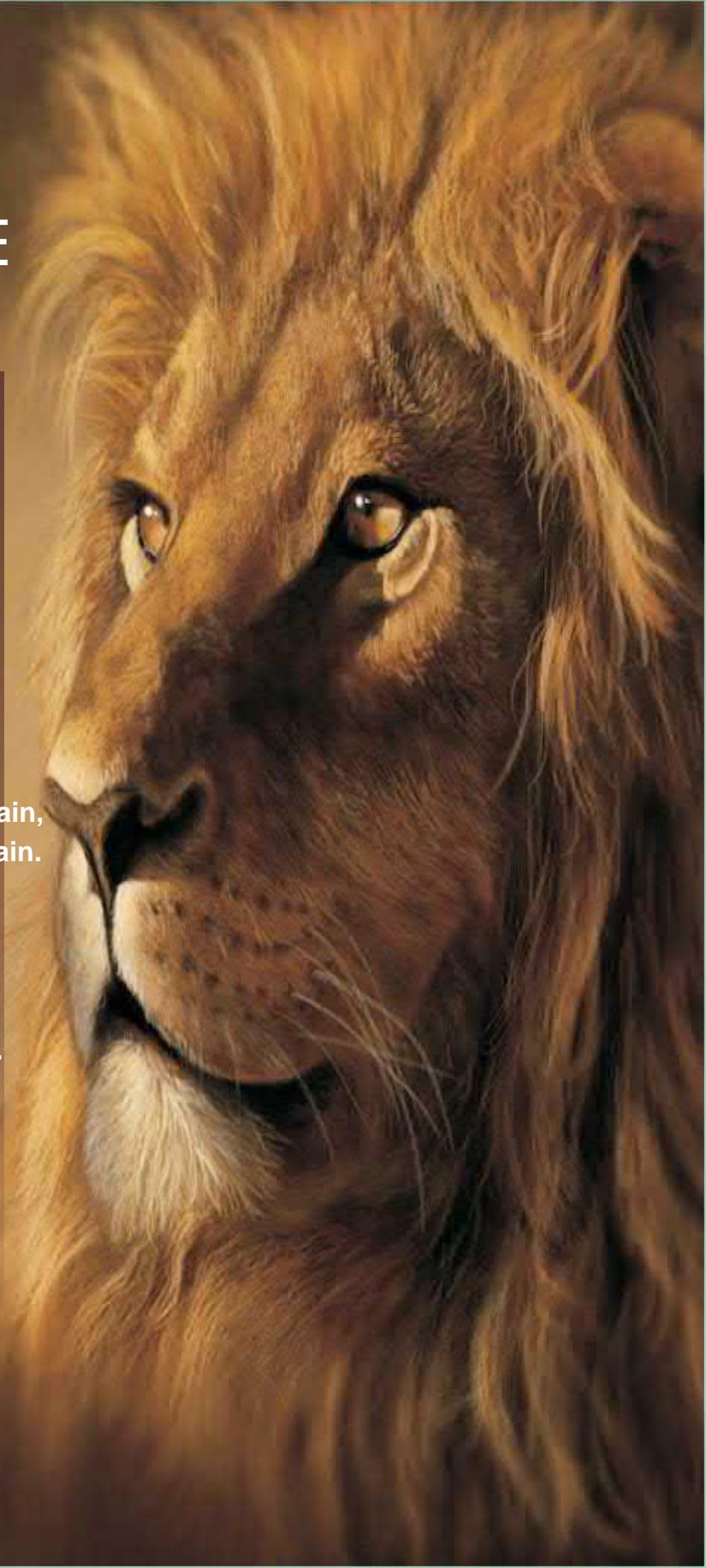
It takes strength to endure abuse,
It takes courage to stop it.

It takes strength to stand alone,
It takes courage to lean on another.

It takes strength to love,
It takes courage to be loved.

It takes strength to survive,
It takes courage to live.

Harpreet Singh-ECE



A Dozen Roses

I got a dozen roses from my friend
The other day
And they were so pretty,
And sparkling in a magnificent way.

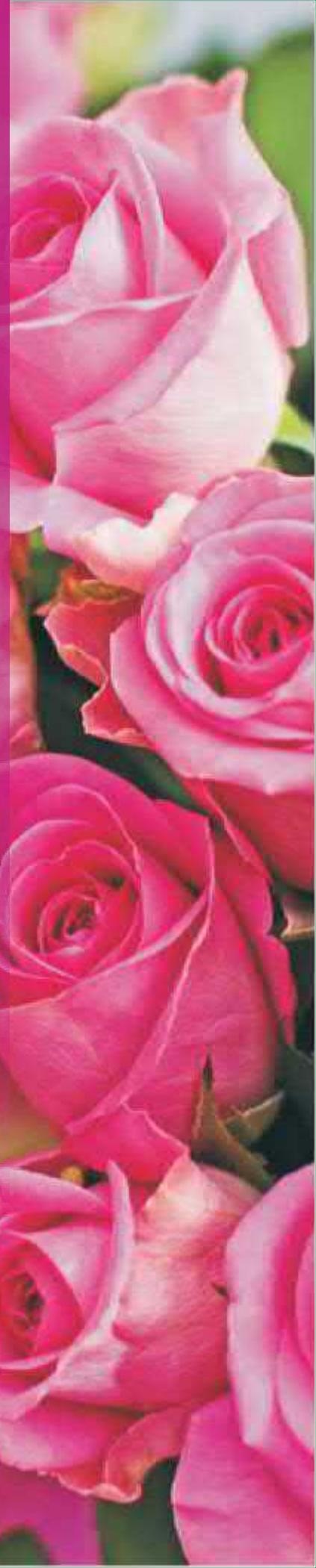
I gave one to my sister,
Who, to me, is very dear.
I hope this had bought to her,
A little floral cheer.

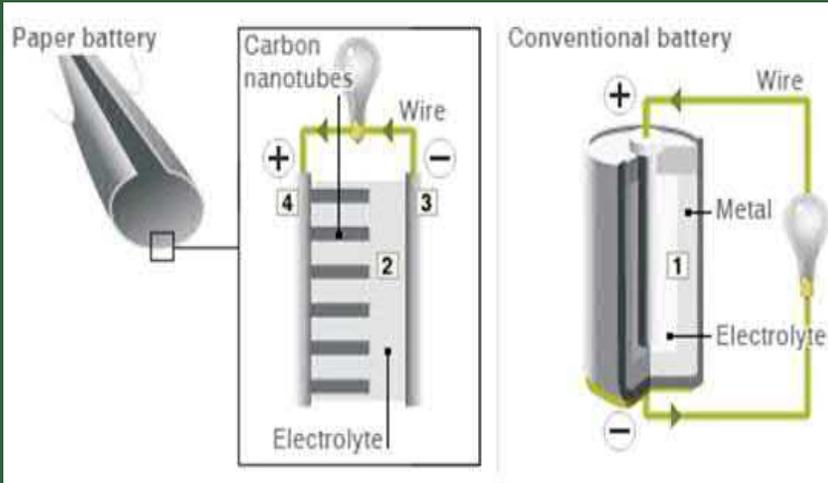
One went to a friend,
Whom I hadn't seen for long.
She struggled in one or other way
I hope it helped her to be strong.

The rest went to the ones,
Who had helped me in many ways.
They had been a cheerful presence
In my dreamy days.

The roses were so beautiful,
I just couldn't keep them all,
Except one single bud,
Standing beautiful and tall.

Gurleen Kour, ECE





Paper Battery

In today's modern era the requirement of a non-polluting device or eco-friendly devices has given an edge to the Electronic devices; these devices require a power supply which can be taken directly from the main power supply or from the electro-chemical batteries. These batteries can be defined as a device comprised of electro-chemical cells and the chemical energy of electro-chemical can be converted into electrical energy through which power can be extracted for the system. This system comprises of a flexible ultra thin energy storage device and production device formed by combining carbon nano tubes with conventional sheets of cellulose based paper, it acts as a battery-high energy and super-capacitor combining two components that are separate in traditional electronics.

Paper Battery Construction : The major components used are:-

- (i) Carbon Nan tube (CNT) used for cathode terminal.
- (ii) Lithium metal (Li^+) used for anode terminal
- (iii) Paper.
- (iv) Different types of electrolytes that include urine and sweat.

Paper Battery = paper (cellulose) + carbon Nano tubes.

7 simple steps for the construction of paper battery:-

1. Take cellulose based paper and apply black carbon ink on it.
2. Spread this ink applied on the paper.
3. After spreading ink, laminate a thin film over the cellulose surface.
4. Heat the cellulose paper for 5min at $80^{\circ}c$.
5. Then, peel off the film from the substrate.
6. The electrodes of paper battery are formed by film. The electrolytes LTO and LCO are connected to different films.
7. The functioning of paper battery can be checked by connecting battery

Paper Battery properties:

_The properties of paper battery can be recognized from the properties of cellulose such as excellent porosity, biodegradability, nontoxic, recyclability, high tensile strength, good absorption capacity and low shear strength and also from the properties of carbon nano-tubers such as low mass density, lightness, flexibility better electrical conductivity than silicon, low resistance.

Advantages:

1. paper battery can be used by Folding, cutting and rolling.
2. paper battery functions as a battery. As well as a capacitor
3. paper battery is a modern storage device with ultra-thin in size

Disadvantages:

1. The carbon nano-tubes used in Paper battery is very expensive.
2. The e- wastage is generated by Paper batteries.

ANXIETY
DEPRESSION
STRESS



It's good to talk

W

e can all play a part in promoting good student mental health. A black dog is stalking academia. Student depression and anxiety have risen to record levels. One study claims that mental health problems have now reached crisis point. But what can we do about it?

The latest survey of graduate and masters students across 26 countries found that rates of depression and anxiety were six times those of the population at large. Perhaps the most worrying conclusion is that poor mentorship and a lack of support from advisers is contributing to the mental health issues of the students surveyed.

These results aren't isolated findings. They seem to be part of a recent trend that appears to be reversing some of the gains made in recent years. Nearly five times as many UK students reported a mental health problem to their universities than a decade ago. Another study found that the suicide rate among UK students has risen 56% in the last 10 years and has now overtaken that of the general population in the 20–24 age range.

Getting the black dog off universities' back is going to be tough. University study, particularly a PhD, can be a pressure cooker environment. Competition can be tough and good opportunities to get on – particularly climbing the academic ladder – are few and far between.

Some of Chemistry World's readers that have made it through higher education may feel that a chemistry degree or PhD was an experience that

tempered them. They were tested and not found wanting. I would respectfully argue that this is an instance of survivor bias – just because you made it through without any additional support it doesn't mean everyone can. Those that struggle at what is often a difficult time of life shouldn't just be left to sink or swim. By providing just a bit more support – better training for mentors, career development advice and improving student mental health services – universities can ensure that as many students as possible can succeed. Universities in the UK are already recognizing this and Universities UK's step change programme is a solid starting place. When England's foremost man of letters at the time, Samuel Johnson, named his depression 'the black dog', isolation and loneliness were major contributors. Little has changed in 200 years. Being unable to admit that you have a problem for fear of the social stigma still associated with mental illness continues to isolate people today. We can all do our bit simply

by talking openly about mental health problems such as depression and anxiety. It's not a personal failing. Greater recognition of this not only helps people struggling with mental illness to feel less alone but also helps catalyse societal change to end the stigma of mental illness



What is CyanogenMod?

What is CyanogenMod all about?

CyanogenMod is a custom version of the Android operating system. It's here to offer a 'better' version than Google can provide, with more features and more control for the hardcore user.

It may sound a lot like one of those custom interfaces you get with phones like the Samsung Galaxy S5. But with CyanogenMod there's no performance-denting, memory-sapping bloat, and it's pretty easy to get the look and feel of a standard Android phone if that is what you're after.

Who makes CyanogenMod and how long has it been around?

The first version of CyanogenMod was produced not all that long after the very first Android phone was released. In the UK that mobile was known as the T-Mobile G1, which went on sale back in 2008.

An exploit was found that let people fiddle with the phone's insides, and shortly afterwards developer Steve Kondik started working on his own tweaked version of Android. And the first version of CyanogenMod was born. He caught the eye of Samsung and joined the company as a software engineer in 2011.

But that's not the end of Steve's story with CyanogenMod. As well as continuing to oversee Cyanogen while at Samsung, Kondik left the tech giant in March 2013.

With the help of hindsight, we know why.

In September 2013, Kondik raised \$7 million in venture capital funds to 'go legit' with CyanogenMod, with the aim of turning it from a nerdy internet mod to something that could be used in commercial products.

It raised another 23 million dollars in December 2013, and Chinese leviathan of tech Tencent was one of the core backers.

What phones have CyanogenMod?

Phone that use CyanogenMod natively has already started appearing, and unsurprisingly they come from Chinese companies.

Companies like Samsung, HTC and LG are unlikely to adopt CyanogenMod any time soon.

Probably the most high-profile phone to get CyanogenMod is the One Plus One. It's a phone that sells for as little as £ 229 but offers specs similar to those of phones costing £ 400-500. You just won't find it on the shelves of any shop in the UK. While CyanogenMod is getting a bit more mainstream, it's still here to appeal to the more investigative, more intense Android phone user.

The one other phone available with CyanogenMod at the time of writing is the Oppo N1, a phone with an unusual swivel camera. Although not widely known, Oppo owns One Plus, and the relationship between Oppo and Cyanogen is very much a love-in of plucky underdogs.

So what is the difference between Android and CyanogenMod?

About 1-2 times a year, the vanilla Android



operating system (known as AOSP, or the Android Open Source Project) is internally developed, then released to the public, by Google. They provide the source code to anyone who wants to download it. The CyanogenMod community, comprised mostly of unpaid volunteers and enthusiasts from around the world, takes this newest Android code and "ports" it to dozens of new and older (aka "legacy") devices. At the same time, other CyanogenMod developers start adding features, fixes and improvements that Google didn't include to CyanogenMod code, which benefits all the devices. The CyanogenMod community has a whole infrastructure for people to build and test experimental version, report bugs, and contributes back the source code.

Sometimes features that started in CyanogenMod have appeared in newer version of "official" Android. And every time Android does a new "code dump" of their latest version, CyanogenMod benefits from Google's changes.

In this way, CyanogenMod is one (but not the only) community distribution of what started as vanilla AOSP. The Android community is vibrant, with numerous "modders" and "themers" and "performance enhancer" taking the source code and doing incredible things to it. Generally, there is a spirit of sharing knowledge and empowering people to experiment with controlling their devices, often giving old phones new life, and hopefully having fun in the process

Noveleen Kour, CSE



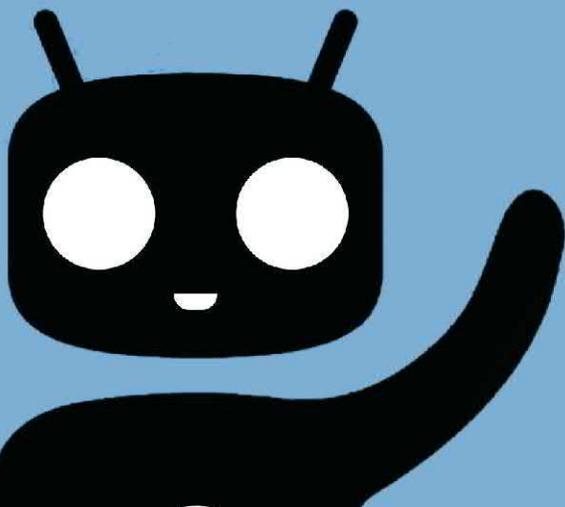
Hybrot Hybrid robot

It is a cybernetic organism in the form of a robot controlled by a computer consisting of both electronic and biological elements. The goal of the hybrot experiment was to create a neural interface between neuron and robot.

What separates a hybrot from a cyborg is that the latter term is commonly used to refer to a cybernetically enhanced human or animal; while a hybrot is an entirely new type of creature constructed from organic and artificial materials. It is perhaps helpful to think of the hybrot as "semi-living", a term also used by the hybrot's inventors. This feat was first accomplished by Dr. Steve Potter, a professor of biomedical engineering at the Georgia Institute of Technology

In his experiment, Potter places a droplet of solution containing thousands of rat neuron cells onto a silicon chip that's embedded with 60 electrodes connected to an amplifier. The electrical signals that the cells fire at one another are picked up by electrodes which then send the amplified signal into a computer. The computer, in turn, wirelessly relays the data to the robot. The robot then manifests this neuronal activity with physical motion, each of its movements a direct result of neurons talking to neurons. And the robot also sends information back to the cells. Equipped with light sensors, the robot receives input about its location in the playpen from infrared signals lining the borders. Infrared signals lining the borders.

Prabjot Singh



This world in which we live, is a very competitive one . It is popularly described as rat race , full of competent people and the fittest of them survives. Success is not a cake walk. One has to face lot of hardships and obstacles to taste success. The most important aspect in achieving success is self confidence. However, people are ambitious but not confident enough to go for it. Infact , most of them don't know how to go about it or are terrified to take risks in their lives.

Self confidence is not something which can be achieved in a day or two . Let us understand that we are not born with it. It's the situation we face, motivation from others and self motivation that makes us truly confident. Hence those of us who feel that we lack confidence, have no reason to be upset.

There are 3 kinds of people. One , who dream big but do not have any idea how to pursue it. The second, who are over confident and end up running their opportunities. Lastly, the ones who are confident and have talent. This segment knows what they want and how they move further.

For attaining a goal, it is important to strive for it and work on the strategies relentlessly. It is necessary to make proper planning and follow up. We will come across ups and downs but should not lose focus and give up. Work hard throughout and be focused until the desired result is achieved.

Now the question arises as to what are the plans/strategies. At the outset, one has to be disciplined. It is not easy as it sounds, but, requires lot of commitment. However , it is not impossible. Take good care of physique as it is very important when it comes to self confidence. Healthy food habits and proper sleep are very much essential. Since hard work is involved, it is imperative that we do not lose hope or be disheartened. Knowing who you are and what your strengths are, is an area that requires your utmost focus. However it depends on how we perceive it. Everybody has flaws, but we have to shine through them. Don't lose hope , be patient , take care of oneself and work hard. The puzzle will fall in place.

Diksha Mahajan ,Asstt.Prof.(H.S.S Department)

**Self Confidence
is the first
requisite to great
undertakings”**

–Samuel Johnson

A Letter from tree

Dear Humans,

"This is my *note!* I am writing this note with my heart full of sorrow and eyes filled with tears.

Being a tree, I was born and bought up in the forest where I spend my time enjoying the beauty of nature and essence of soil. I enjoyed the sunlight and the cool breeze, used to touch my soul.

As the time passed, I grew up gradually many living creatures such as small birds and insects started taking shelter in my shade. It gave me colossal pleasure. They use to play on me, love me unconditionally and our relationship became stronger day by day than other relation in the world.

My life was so beautiful and joyful but like other stories, mine also came to a tragic end. A few months ago, a group of real estate developers (builders) entered our small but happy world and began to uproot my friends one after the

As I live in the middle of the forest my turn is yet to come. The sight of the birds and creatures running away to save their lives stole the forest of its glory. It was heart-breaking to see the once lush forest being turned to a barren.

Here comes my day, the day to get ripped out. But before that, I want to make an appeal to all the humans out there.

Please help us! Save us! We don't demand much. But just a bit of your love, care and security. We are the reason you get rainfall! We are here to serve you! To nourish you! To provide you with all rich resources! What would happen to this world if all my friends are uprooted? No rain....no water....no shelter for animal...no cleansing air...no fresh environment!

Just a world full of pollution...habitat destruction...soil erosion...lost biological diversity!

Think of the future generation, don't you want them to grow up with us? Don't you want them to get a pollution free atmosphere? Can't they live a happy life?

I am writing this note not to gain sympathy, but to create awareness among you all. Before they give me to the hands of death, I am committing suicide."

WISHING YOU ALL A HAPPY and good LIFE!

Yours Undemandable TREE



GREEN Manufacturing

Green manufacturing is the renewal of production processes and the establishment of environmentally-friendly operations within the manufacturing field. Essentially, it is the “greening” of manufacturing, in which workers use fewer natural resources, reduce pollution and waste, recycle and reuse materials, and moderate emissions in their processes.

Green manufacturers research, develop, or utilize technologies and practices to lessen their impact on the environment. As detailed by the Bureau of Labor Statistics, workers at green companies must have specific manufacturing training in green technologies and practices such as:

1. Energy from renewable sources. Workers may generate electricity, heat, or fuel from renewable sources for use within their establishment. These sources may include wind, biomass, geothermal, solar, ocean, hydropower, landfill gas and municipal solid waste.

2. Energy efficiency. Workers will utilize specific technologies and practices to improve energy efficiency within their establishment.

3. Pollution control: Workers will use green technologies and practices to:

Reduce or remove the creation or release of pollutants in their operations

Reduce greenhouse gas emissions

Reduce or eliminate the creation of waste materials

Collect, reuse, recycle or compost waste materials

4. Natural resources conservation. Workers will use specific technologies and practices to conserve natural resources, such as those related to organic agriculture, land management, and soil, water, or wildlife conservation.

Students learn about the different practices and technologies needed in a green, clean, and lean working environment. They develop the skills necessary to preserve and restore environmental quality in manufacturing, as well as create a green workplace for their companies. By studying local, state and national green/clean/lean/sustainable resources in these courses, students can truly learn how to prepare for the growing green workforce of the future.

KASHMIR RETOLD

Translation of Kashmiri poem in English

O' beloved , rid my heart of hesitations
Only thy sight is my cure now.

You , with a face like Sun; and I ,a ball of snow
I , like ice melting away with the brilliance of your radiance.

Water mingles with water there's no opposition there.
Only thy sight is my cure now.

I , a flying bird was;you, a walker made me crawl
Got rotten with sweetness of thy love
I lost everything, only my heart is yet to be lost now.
Only thy sight is my cure now.

Sapphire seller at Hazratbal

Our master, adorned on the throne

Rub your face in dust , for commoners are the actual nobels there
Only thy sight is my cure now.

Come beloved so I'll wash your feet
And send salutations upon you after that
Nyaam has put his head on your doorstep
Only your sight is my cure now.

Muneer Ahmad Dar, ME 5th Sem

Life Before the Computer



The Impact of Social Networking Sites With its Positive and Negative Aspects

I. INTRODUCTION

Social Networking Sites (SNSs) are online platforms that users use to create Personal profiles, associates with companion and fuss in different parts. Social networking sites exhibits individual profile and facilitates with various other activities such as sharing information with each other. Social networking sites grab million of people in the globe who are united these websites into their daily life style. Social networking sites will become famous all over the world.

EFFECTS OF SOCIAL MEDIA ON YOUTH, SOCIETY AND BUSINESS

Social media has a great influence on the life of many young people today. Now a day's most of the people engage themselves in Social media without being bothered about what is its impact on our lives. Today our society is more concerned in face book friends where people don't interact face to face. Social Media has a great impact on business also but only if it is planned strategically otherwise it can be a big failure. It is estimated that 80 percent of teen are Internet users. So, it is no doubt our real world social lives are seeing some changes. Social media is the driver behind that connection. It is about sharing and broadcasting your life online, conversing with friends as well as strangers.

POSITIVE AND NEGATIVE EFFECTS OF SOCIAL MEDIA

Positive effects of Social Media:-

1. Social media as a tool for learning and Teaching:-

Social media can become an effective tool for learning and teaching and is growing more each year. It consists of many applications that can reinforce class notes and give Positive results in discussion and collaborative work. There are various new techniques that are followed by instructors and students to learn and teach which include the following:-

Weblogs. Wikis. Social bookmarking. Audio/video casting (AVC). Twitter

2. Sympathy:-

On the social networking sites, we tend to share our lives, both the ups and downs, with those people we think will care. They will listen to what you have posted and assist you in dealing with problems you are facing. The point here is that, because all of us share both good and bad things on social networking sites, then we will be able to sympathize with each other. Sometimes, a friend who used to pass through the situation you are facing with, then they will give you advice or inform you how they got through that.



3. News on Social Media:-In earlier times Television was consider as the queen of News channel but right now social media has taken the place of Television and radio. According to the figures released by the Reuters Institute for the study of Journalism showed that half (51%) of online users surveyed said they used social media as a news. Today you can check any news by only having the mobile and internet connection.

4. Free Advertising:-Social networks offer an efficient means of getting one's message across to millions of people and usually free of cost. One can promote a product, service or idea and not have to invest large sums of money in advertising costs. In coming days the concept of advertisement will be changed dramatically using social networks.

5. Save Time and Money:Social networking sites save our time and money .Like, you can stay at home and do some works and search some useful information without going to office, store or going to college. Older people can get more certificates via online courses. Teenagers or youth improve knowledge just with network at their home. You even can buy products through sites.

6. Making Friends on Social Networking sites:- This is one of the important outcomes of social media that everyone can appreciate. It has never been easier to make friends than it is right now thanks to social media. Several decades ago, it was very difficult for people to get connected with one another if they did not go out and make conversation with others. However, today, Technology is used to connecting people. It is very easy to make millions of friends on Social networking sites(e.g.)We can make friends on face book, Twitter and instagram.

7. Long-lasting relationships:There is no doubt that social network help us in formation of new relationships. This can put you in touch with those people who you have a lot of common things with, and that will be starting point for long-lasting relationships.

8. Social media sites for job searching:Social media sites play a vital role in job searching process. As per society of human resource management 84% of employers are using social media as recruitment tool with additional 9% planning to do so in future.(e.g.)Face book, Twitter, Google, Youtube and LinkedIn is a great source for accessing Job postings. Many colleges have implemented online alumni directors which

function as social networks that both past and present students can access for career advice .

9. Education: Today is the age of smart phones and there is no secret that almost all students and teachers have smart-phones and have used social media in education purpose. In fact, there are number of apps and web tools that offer social media in an educational context. With the help of new technology faculty using a variety of software tools and free web applications to enhance learning skills, communication, knowledge and engagement. Now the use of social media is on the rise in higher education classrooms. A study of the MOOCs (Massive Open Online Courses) shows that the student participation improved when the social media platforms were integrated with learning programs.

Negative effects of Social Media:-

1. Cyber-Bullying: Cyber bullying is a form of harassment using electronic means. Cyber harassment is also called as cyber bullying. Cyber bullying is easily seen and more accessible on social media sites because of social freedom that the sites allow us to have. As technology has its positive effects, it has negative effects also. The internet and mobile phones are our system of communication which play vital role in our day today activities but they are used negatively also Mostly children and teen agers are victims of bullying. Today our technology is becoming a source of scepticism and perturbation.

2. Addiction:- Social networking sites are highly addictive. There are many people who spent their entire fruitful time on these networking sites. It is becoming a serious disorder that does not have any pronouncement .People are having a feeling of being obsessed by these sites. As a result they are neglecting their responsibilities. In search of face book friends or for maintaining communication with friends, these sites are forcing people away from our true friends which are our own family members.

3. Isolation: - As on one side through Social media we are trying to maintain our social links but on the other side, these sides are isolating our young adults. Social media has changed our ability to stay focused on what's going on around us. We think that social media allow us to be connected to our loved ones 24/7 but it is actually making us feel forsaken. It seems that social networking sites presents opportunities to fill the social scant but it may not be the solution what people are anticipating for.

4. Decreased Productivity:- Social networking sites has its negative effects on our work place also because out of total working hours people spent at their working space ,some percentage of their time is consumed for accessing social media due to which their output is lost. Apart from this it results in loss of intimate information, mudslinging deception and employee supplicate.

5. Identity Theft and Fraud:- Recent research reveals that identity theft affects millions of people a year, costing victims countless hours and money in identity recovery and repair. What causes this pattern of online theft and fraud? It's a combination of factors: a lack of consumer knowledge regarding protecting your identity online; growing comfort with, and trust in, social platform providers; the need for social platforms to generate revenue; and a lack of standards or policing of these standards.

6. Lack of Privacy:- Social networking sites are the intimidating remark to our privacy. As in these sites people share their personal information with their friends. Triflers cruise the social media networks looking for victims. They use shortened URL'S to trick their victims into visiting harmful sites or to inject virus into their computers or phones. Most of them tend to hack their victims mail accounts by using personal information so before uploading our personal information we need to have a complete understanding of privacy risks involved.

7. Advertising:- Studies have shown that sites such as Face book influence you, via advertisements, to spend more money. Advertisers gain all kinds of personal information about you via your social media, information they use to persuade you to buy their product.

8. Poor language and grammar: Social media encourages poor use of language in terms of grammar, syntax and spelling. It allows the perpetration of misinformation through sharing even while the evidences are in fact on that contrary. It exposes children to online predators often some silly mistakes in terms of sharing some inappropriate pictures and comments might cause irreparable damage to your image.

Sachin Sudan, ME

INDIA OF MY DREAMS

Incredible India as our country is called
The rain dances to the tune of nature's call
Giant mountains with rest greenery
This is the India that I wish to see.

Despite of cultured diversity & the twist of taste
There will be no racists and no one to discriminate
The language of love every heart will speak
This is the India that I wish to see

Enlightenment will empower & literacy at in peak
When rich won't have pride & poor no longer be weak
Divided we will fall & united we all will be
This is the India I wish to see

The future of our children will not be jeopardized
Where feelings of people will not be politicized
Where Nobel & wise men will take the lead
And there will be no place for corruption & greed
Days of despair will forever be gone
& happiness will be bought for free
Where hope will reside with belief
This is the India that I wish to see

Domestic violence will no longer reside
respect for parents & good values will abide
Gain for dowry nobody will attain
Where women will be freed from shackles of pain
Child trafficking will be abolished forever
Where laws will be stringent more than ever.
Where life will be easier and in ecstasy
This is the India that I wish to see

Women will be defined as strong & brave
Murderers & Rapists will be led to their graves
This is the India that I want to see

No one will ever trifle with nature
As it encompasses variety of creatures

Where cages will be opened & animals will be free
Chak de India! Every heart will sing
Where every dream will have its own wings.
When made in India will be written on everything
Doorways to success will have hard work as key
This is the India that I want to see

When each mind will have lots of 'gyan'
And there will be no need of any 'Swatch Bharat
Abhyaan'
This the India that I want to see

Peace in every heart is what I desire
Where enemies will be friends & no unfulfilled desire
Where people are in unison, their hearts filled with
glee
This is the India that I want to see

I pray to God to listen to our prayers.
We can bring the changes as we are the ones who care
It may sound impossible & hard to believe
The clock is kicking & there is much to achieve
But filled with purity & eternal bliss
India of my dreams will be much more beautiful than
this

Ishan Salaria, CSE



Li-Fi

The bright future of light

What is Li-Fi?

Li-Fi or Light Fidelity is a Visible Light Communications system. Li-Fi can be considered as a light-based Wi-Fi. It uses light instead of radio waves to transmit information. Li-Fi is transmission of data using illumination i.e. sending data through an LED lamp that varies intensity of light faster than what human eye can perceive.

Working principle :

Data is transmitted over Li-Fi by modulating the intensity of a light- essentially dimming the light or turning it on and off at a very high speed. The changes are so fast that they're imperceptible to the human eye, so it isn't intrusive. This light is then received by a photo-sensitive detector and demodulated in electronic form. It's then converted back into a data stream, making it usable for video, audio and other internet tasks on a computer or smartphone.

Benefits over wifi and other technologies :

- **High speed** : faster than a typical Wi-Fi ,offer speeds of over 10 Gbps, it's roughly 100 times faster.
- **Wider spectrum** : There is also far more spectrum available for use with Li-Fi than Wi-Fi, as the visible light spectrum is 10,000 times larger than the entire radio frequency spectrum..
- **More secure** : uses light it can't travel through walls, which also makes it far more secure than other wireless data technology and it can be used in areas which are susceptible to electromagnetic interference, such as hospitals, operation theaters, traffic signals, and aircraft cabins etc.
- **Ecologically saver and efficient** as well, as it requires fewer components than radio technology. Given that it works using standard LED bulbs, which are increasingly being used in lights anyway, Li-Fi could easily be added to the likes of street lamps to provide Li-Fi hotspots.

Conclusion: We can imagine a future in which everyone uses LED bulbs and Li-Fi is built into them all, you can see how it could easily be widely available in ways that Wi-Fi can't match. Devices could be designed to seamlessly switch between 4G, Wi-Fi and Li-Fi depending on what's available. The downside to Li-Fi is that it can't travel through walls, so it's inevitably going to be a very short range technology. Due to its limitations (primarily the fact that it can't pass through walls). Li-Fi is never likely to replace Wi-Fi, 4G or 5G, but it could become a key complementary technology, handling data in areas where its limitations aren't a problem and lessening the load on radio frequency spectrum in the process.



SMOG FREE TOWER

The Smog free tower is the largest air –purifier in the world. Dutch artist and innovator Daan Roosegaarde whose fascination for nature and technology is reflected in his iconic designs that is smog free tower. The Smog Free Tower creates smog free zones in the largest and most polluted cities around the world. The Smog Free Tower allows people to breathe and experience clean air in a city. The smog free Tower purportedly treats 30,000 cubic meters of air per hour, collecting more than 75% of two kinds of pollutants, PM2.5 and PM10, that contribute to smog. It also turns particular matter it into jewellery by compressing 1,000 cubic meter of polluted air into rings, which visitors can purchase. It is the tower which is present in Beijing city of China because of its highly polluted nature.

The tower has two windows – left one and right one. Smog enters these chambers, Smog may contain fine particles (0.3 micrometer), smoke (1 micrometer), bacteria (3 micrometer), dust mites (10 micrometer), dust pollen (20 micrometer), animal dander (30 micrometer). This smog then passes to electronic air cleaners. It has an ionization section and a collecting plate section, both of which use an external power source. The air goes through the ionization section, where particles obtain an electrical charge. All particles, even the smallest particles down to 0.3 micron are given an electric charge. The charged particles accumulate on a series of plates called a collector that is oppositely charged. Smog then enters the Mechanical air filter which are good at capturing dust, pollen, some mold spores, animal dander, and particles that contain dust mite and allergens. Finally it goes to HEPA filters which are made from a fabric of tangled, warped fibers. These fibers are in a random pattern, with strands bending and curving in all directions to form a confusing, twisty maze that their must go through. As the particles pass through the filter, they are caught in this maze. But a HEPA filter doesn't capture everything: small number of particles larger than 0.3 μm will still get through. Smaller particles will also still get through. In particular, many of the particles such as the PM2.5 particles in urban smog are too small to be mostly captured by a HEPA filter. So, finally smog particles go to prefilters where large particles (lint, hair, willow catkin) are caught. Usually prefilters are made of Poly, Synthetic or Fibreglas.

WORKING OF SMOG FREE TOWER :

Roosegaarde describe how the tower works on the project “KICKSTARTER PAGE”.

He said, “By charging the smog free tower with a small positive current, an electrode will send positive ions into the air. These ions will attach themselves to fine dust particles. A negatively charged surface – the counter electrode- will then draw the positive ions in, together with the fine dust particles. The fine dust that would normally harm us, is collected together with the ions and stored inside of the tower. This technology manages to capture ultra –fine smog particles which regular filter systems fail to do”

But the well -designed air purifier doesn't just clean up smog, it can also be used to make fine jewelry. The fine carbon particles that the tower collects can be considered to create “gem stones” that can be embedded in jewelry pieces like rings and cufflinks. Each of the tiny stones is the equivalent of 1000 cubic meters of air.

BALJEET KOUR, 8th SEM (ENC)



Amazing facts about **COMPUTERS**

What is the maximum amount of RAM a 64bit machine can theoretically address?

Theoretically: 16.8 million terabytes. In practice: your computer case is a little too small to fit all that RAM.

The current largest stick of RAM available is 32 GB. It would take 32 of these to reach 1 terabyte. At about a half inch per stick this brings us to a devoted 16 inches of space on your mother board for a terabyte of commercial RAM. To reach 16.8 million terabytes would require a motherboard 4,242.42 miles. The distance from LA to NYC is about 2141 miles, so the mother board would stretch across the country and back to accommodate that much RAM.

Clearly this is impractical.

How about we didn't put our RAM all in one row like on most motherboards, but instead placed them side-by-side. I want to say the average stick of RAM is about six inches long, so if we allow a half an inch for width, you can have a square unit of 12 sticks of RAM in a 6 inch square. Let's call this square a RAM-tile. A RAM-tile then holds 384GB of RAM. To reach the required 16.8 million terabytes in 384GB tiles would take 44.8 million tiles. Let's be messy, and use square

root of that to conclude that this will fit in a square of 6693 by 6694 tiles, or 13, 386 by 13,388 feet, which is close enough to 2.5 miles squared, enough to cover downtown Seattle in shadow, as if they didn't already have enough to complain about.

Fastest internet speeds?

Imagine downloading a 1GB movie in about 0.2 milliseconds. That could very well be a possibility after a team of researchers at the technical University of Denmark (DTU), were able to transmit 43 terabits (Tb) per second over a single optical fiber with just one laser transmitter.

To give you a better idea of the speeds here 43Tbps equals a transfer rate of around 5.4 TB per second, somewhere around 5,300 GBs. We won't fault you for reading that sentence twice. In contrast, the previous record was 26 terabits per second set by Germany's Karlsruhe Institute of Technology in 2011.

The important thing to note here is that DTU managed to break the record over a single optical fiber with one laser transmitter. Theoretically, it's possible to achieve speeds way in excess of DTU's

record, but that flies in the face of Internet infrastructure, which is primarily built around a single-laser single-fiber setup.

DTU did bend some of the rules, using a multi-core fiber while still only using a single laser. The multiple individual channels in a multi-core fiber can carry their own optical signal. DTU used a seven-core fiber line, produced by Japanese telecom giant NTT. In Fact, NTT is going ahead with commercial deployment of said multi-core fiber in Japan. Currently, the fastest commercial network speed's out at just 100Gbps, so if DTU's technique is indeed commercialized, we could have considerably faster Internet speeds in the near future. Large-scale adoption will be glacial, so it will be a while before 43 Tbps lines become commonplace.

Ultimate speed

A joint group of researchers from the Netherlands and the US have smashed the world speed record for a fiber network, pushing 255 terabits per second down a single strand of glass fiber. This is equivalent to round 32 terabytes per second enough to transfer a 1GB movie in 31.25 microseconds (0.03 milliseconds), or alternatively, the entire contents of your 1TB hard drive in about 31 milliseconds. To put 255Tbps into perspective, the fastest single-fiber links in commercial operation top out at 100 Gbps, or 2,550 times slower. 255Tbps is mind bogglingly quick; it's greater, by far, than the total capacity of every cable-

hundreds of glass fibers-currently spanning the Atlantic Ocean. In fact, 255 terabits per second is similar to – or maybe even more than- the total sum of all traffic flowing across the internet at peak time.

Highest capacity hard disk

Western Digital's (WD) HGST subsidiary's new He 10 10TB hard drive seals in helium and users singled magnetic recording to pack its capacity into a 3.5-in form factor. It is the highest captivity Hard Drive today. Now compare it with the first hard drives of 5 MEGABYTES size!!!!

Highest capacity pen drive

Kingston Data Traveler HyperX Predator 3.0 is the world's largest-capacity USB 3.0 Flash drive with 1TB capacity price US \$838 only on AMAZON.COM

The World's Fastest Supercomputer

China's Tianhe-2 is on top, performing at 33.86 petaflop/s according to the organization's benchmarks. That's nearly twice as fast as the number two computer, Cray's Titan at the Oak Ridge National Laboratory.

The Tianhe-2 resides at China's National University of Defense Technology. It cost approximately \$390 million to build and is comprised of thousands of Intel Xeon E5-2692v2 12C 2.2GHz processors. It runs a version of Linux that was developed by the NUDT.

Simran Kour, CSE



Childhood

In my childhood parents made me fool
By feeding me my greed they take me to school,
School for me was prison
That I don't want to stay there for any reason..
Teachers for me where strangers
Friends were the only life changers,
Whole week we waited for our game class
Which when came in seconds it pass..
Beginning of month i remember all holidays
While thinking of holidays i passed other days,
I was one of the greatest vacations lover
In making plans my vacations were over...
Holidays for me were delight
Fr whole day i had my flight

Karun kala,7thSem(ENC)

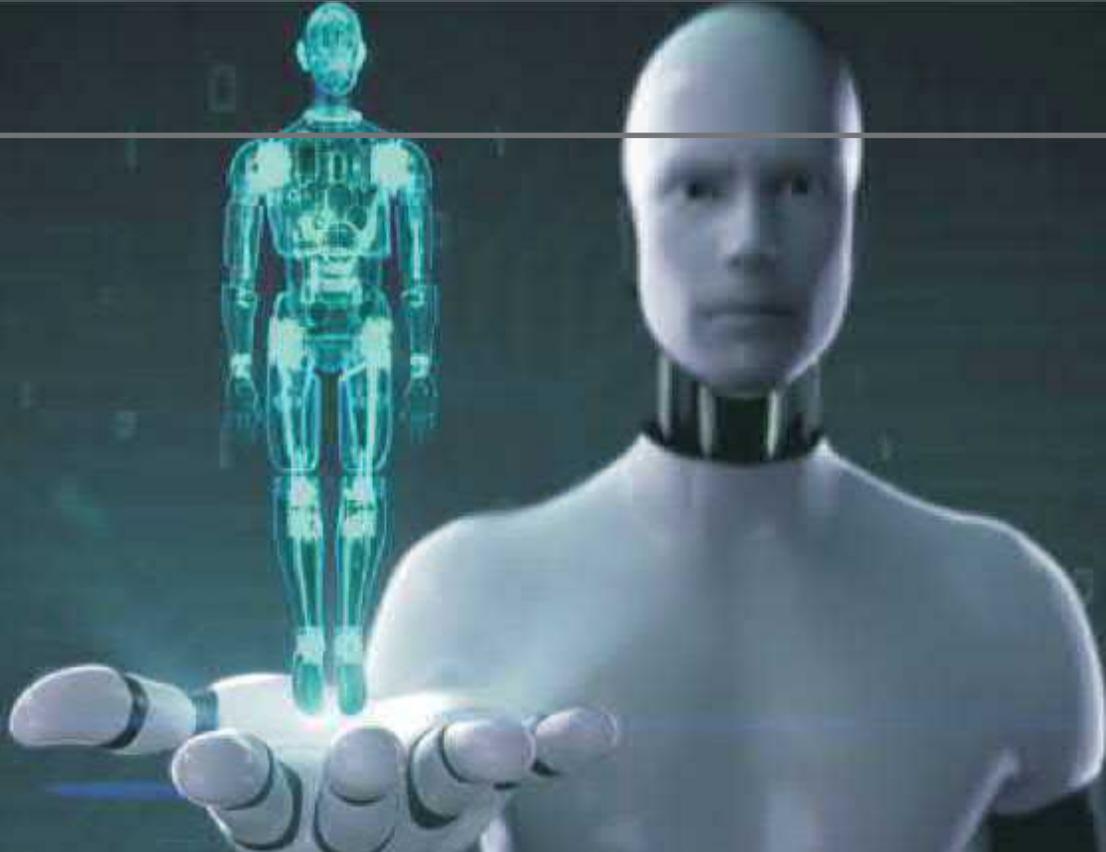


The summer that this heart still remembers, unforgettable I
stepped a new step....
On the ladder of my life,
And new that I wasn't only a kid to my parents,
But a grown up, ready to judge life with wrong and right.
The days passed being junior and senior,
And farewell was like an abrupt end, But now I know its just
a start
The adventure has just begun.....
So much ahead of me, feels life a ride of dreams
I get to be what I want according to my chosen streams
Writing a new destiny, maturity on another level,
No more troubles so childish, we all grow killing our inner
self...
So much to learn, so much to remember, So much to say
hello to in my present,
I just hope I will live it to the fullest....
Because I know even college life won't be a permanent
December

Satvinder Kour, CSE



TRANSFORMATION FROM SCHOOL LIFE TO COLLEGE LIFE



Will Robots Eventually Replace Humans As The Dominant Species On Earth?

Humans are already no longer the dominant species on Earth. In 2014, the number of mobile electronic devices [surpassed the number of people](#). If you include computers that are not mobile, [the number of internet-connected devices will reach 34 billion by 2020](#).

But does this really count? After all, most electronic devices are really dumb. Let's consider only the most "intelligent" species of mobile device - the Smartphone, which is basically a handheld computer running (almost exclusively) android or ios. Smartphone's have come from nothing to near-dominance in a remarkably short time. The number of Smartphone's is projected to reach [6.1 billion](#) in 2020, and will overtake the human population shortly thereafter.

Smartphone's are still pretty dumb for now, but they have high intelligence potential for two reasons:

- They have sensors (cameras, microphones, accelerometers, GPS, thermometers).
- They have real-time connections to immensely powerful server farms, which can operate without the battery power restrictions of phones.

Many people living in advanced economies have already basically outsourced their memories and navigation skills to Smartphone's and cloud servers. The value-add of Smartphone's has been so great that we have gladly embraced them, despite the need to feed our little phones daily and constantly bathe them in continuous Wi-Fi or 4G access.

So it is clear that we want personal computers that we can carry or wear all of the time. Will the same be true for robots? There are expected to be [31 million domestic robots in 2019](#), which is already far higher than the [2.6 million industrial robots](#) projected for the same year. The current betting in the industry focuses on three trends, in which consumer growth is [far outpacing industrial or military growth](#):

- We don't want to do housework, and would gladly buy any robot that could be as useful as a dishwasher or a washing machine - but also adaptable to general cleaning.
- Driving is a huge waste of time that robot cars can do better, if we can teach them to do it.
- We are all living longer, and soon we won't be able to look after all of those old people - either financially or in terms of available human labour. Automation of aged care will become crucial.

For the moment, it seems that a logical ceiling for human-computer-robot symbiosis is a few AIs and/or robots per person. Modern office workers already have around 3–5 devices per person. Beyond that, exponential growth in the number of robots might be driven by the need for automated robot cleaning, repair and replacement - robots to fix robots. By that stage, we will be basically onlookers in a robot society. Humans - the original *raison d'être* for the robots - may be reduced to a fashionable hobby for robots, like a house plant or a pet.

Article presented by:

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INTERNET

Mathematics (Change the Way You See the World)

ONE say, "Nothing is perfect." Well, I contradict, there are two things in this world that are just more than perfect. One is Mother Nature, the other is mathematics.

It is obvious if someone asks for the basis of this conclusion? Mother Nature is a complex web that is full of life and lifeless things, so perfect that it defines the reason for life and death. Mathematics, on the other hand, is man-made, whose nature is beyond the level of understanding. And the debate over whether mathematics was invented or discovered is yet to be resolved.

Every day there are new discoveries on both sides of the argument that make us more aware about the truth, which exists independently of our acknowledgement.

Maths is founded on simple yet powerful elements; numbers. Numbers, share a complex relationship with every other element in the nature.

Some relationship is universally valid, like, which stands true on each and every corner of the Earth, on Mars and even if the sun goes down. All because, it doesn't have any physical dimension, the most beautiful concept ever made by the human mind that simply works on mental concept.

Think about the largest number your mind can conceive? What is the size of the universe? The answer to both these questions is one and the same. The answer is not infinity, it is zero. Yes! The size of the universe is zero, and so is the largest number!. Let me explain. For every positive number there exists a negative number in maths. For every matter there exists anti-matter in nature. This is the big picture. Therefore when you put everything together, the size of the universe is zero. Zero is thus simultaneously everything as well as nothing. That's why it's called a whole number. You add or remove anything from this whole, it still remains a whole.

This beautiful conception was made in ancient India at a time when the rest of the world was busy figuring out whether the earth is flat or round.

It's really astonishing and makes me proud of the intellectual wisdom of ancient India, making such a ground-breaking revelation that changed the human thought process once and for all!

Thus ,Maths and human beings are co-dependent to aid each other's growth math is an abstract representation of nature, this is the fundamental reason that maths is no different from mother nature. Hence, any real-world problem can be solved in maths and any maths solution is effective in the real world. Of course this statement doesn't hold true in love and war. Those topics are out of the scope of this discussion.

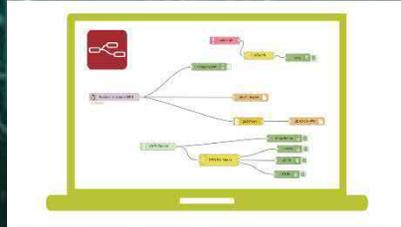
Dr. Rekha Dadwal, Asstt. Prof. (Applied Mathematics Department)

✍



Few Facts About Node-RED

Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways. It provides a browser-based editor



Since early 2014, the mobile has overtaken the personal computer (desktop/laptop) as the [leading](#) device used to navigate the Net. Along with the mobile, a number of other portable devices that connect to the Internet have also started proliferating at a very quick rate. Nowadays, most of us carry or possess at least one Internet based device and a mobile. So, the Internet of Things (IoT) now doesn't only mean different 'things', but has evolved into 'intelligent things' which have on-board computation and network connections. Most importantly, they have the capability to sense the environment around us and, accordingly, act intelligently. These devices are now referred to as connected devices, smart objects or the Web of Things. This adaptation of technology has led to many developments in the visual programming and visual coding arenas. As a result, Node-RED has evolved into a visual programming/coding tool based on the already popular Node.js (a server side JavaScripting platform), mainly targeting the Internet of Things space.

What is Node-RED?

Node-RED is a programming tool for wiring together hardware devices, APIs and online services. Primarily, it is a visual tool designed for the Internet of Things, but it can also be used for other applications to very quickly assemble flows of various services.

Node-RED is open source and was originally created by the IBM Emerging Technology organization. It is included in IBM's Bluemix (a Platform-as-a-Service or PaaS) IoT starter application package. Node-RED can also be deployed

which more details can be found at <https://nodered.org/>

Node-RED enables users to stitch together Web services and hardware by replacing common low-level coding tasks (like a simple service talking to a serial port), and this can be done with a visual drag-drop interface. Various components in Node-RED are connected together to create a flow. Most of the code needed is created automatically.

Installation of Node-RED

To start using Node-RED, we have to first install it. This task is platform-specific and we have to choose the right installable for the respective platform. To make Node-RED work, we need to install Node.js. At present the recommended versions of Node.js are LTS 6.x or 6.x.

1) To install and configure Node-RED, first install the required Node.js, as follows:

```
$ sudo apt-get install node.js
```

2) Once you are done with the Node.js set-up, install the Node Package Manager (npm) as follows:

```
$ sudo apt-get install npm
```

3) After npm configuration is done, create a symbolic link with 'node' for 'node.js' as shown below:

```
$ sudo ln -s /usr/bin/node.js /usr/bin/node
```

4) To make sure that Node.js is working fine, test the installation by executing the following commands:

```
$ node -v
```

```
<check for respective version>
```

```
$ npm -v
```

```
<check for respective version>
```

Once Node.js and npm are configured, we can go

ahead and install Node-RED. The latest and most recent stable version of Node-RED can be downloaded from the GIT repository.

```
$ sudo apt-get install git-core
$ cd ~
$ git clone https://github.com/node-red/node-red.git
```

```
e-red
$ sudo npm install
```

Now, test if Node-RED has been installed properly by executing the following command:

```
$ sudo node red.js
```

Node-RED available on the default 1880 port...

More details on the installation steps can be found at

<http://nodered.org/docs/getting-started/installation>.

Features of Node-RED

The major features of Node-RED are listed below.

- Ø It supports browser-based flow editing.
- Ø As it is built on Node.js, it supports a lightweight runtime environment along with the event driven and nonblocking model.
- Ø The various flows created in Node-RED are stored using JSON, which can be easily imported and exported for sharing with others.
- Ø You can run it locally (Docker support, etc).
- Ø It can easily fit on most widely used devices like
- Ø Raspberry Pi, BeagleBone Black, Arduino, Android based devices, etc.
- Ø It can run in the cloud environment like Bluemix, AWS, MS-Azure, etc.

Figure 2 explains the various components of Node-RED and its basic architecture.

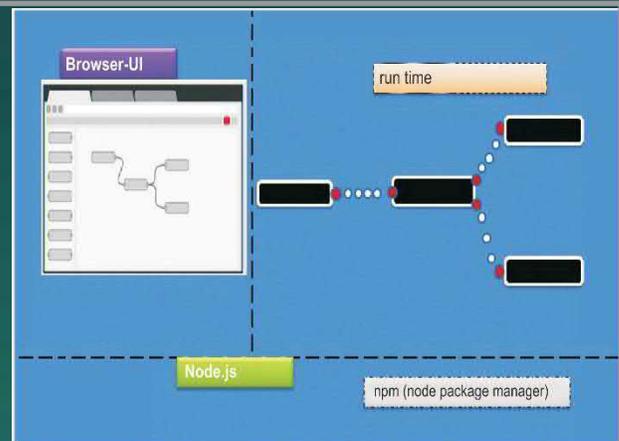


Figure 2: Architecture of Node-RED

Node-RED architecture.

Node-RED can be used in a range of applications. The major ones are listed below.

- 1) In Bluemix, for connecting to IoT (with ReST and MQTT).
- 2) For binding and connecting to databases (MongoDB).
- 3) For storing IoT data for present and future computation.
- 4) For social media, when taking action and when event driven applications are needed (like Twitter).

Node-RED has over 225,000 package repos, to which it is easy to extend and add new packages. It also has a dedicated community (nodered.org), and is built with robust architecture using Node.js (which is very popular these days).

Node-RED can be used in event driven and fast-to-market applications and services, with easily implementable steps. Home-OS and Node-RED

There is an alternate approach to visual programming in the IoT space, which uses Home-OS from Microsoft. In this case, users can record macros to activate sequences of actions, such as turning on lights, etc. This feature allows users to set up simple and easy-to-use macros, without the need to learn an abstract visual or verbal representation of the system. More details on Home-OS can be found at <https://www.microsoft.com/en-us/research/project/homeos-enabling-smarter-homes-for-everyone/>.

SHOBIT MAHAJAN, 8th SEM(ENC)

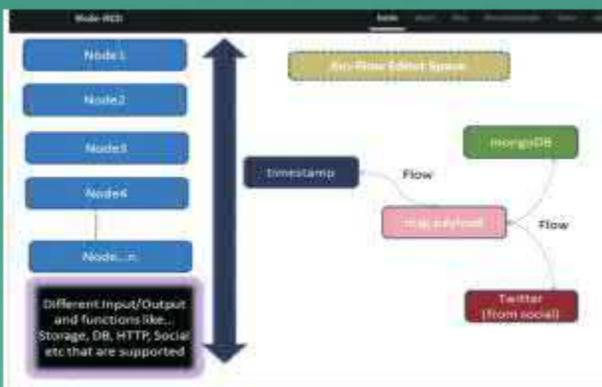
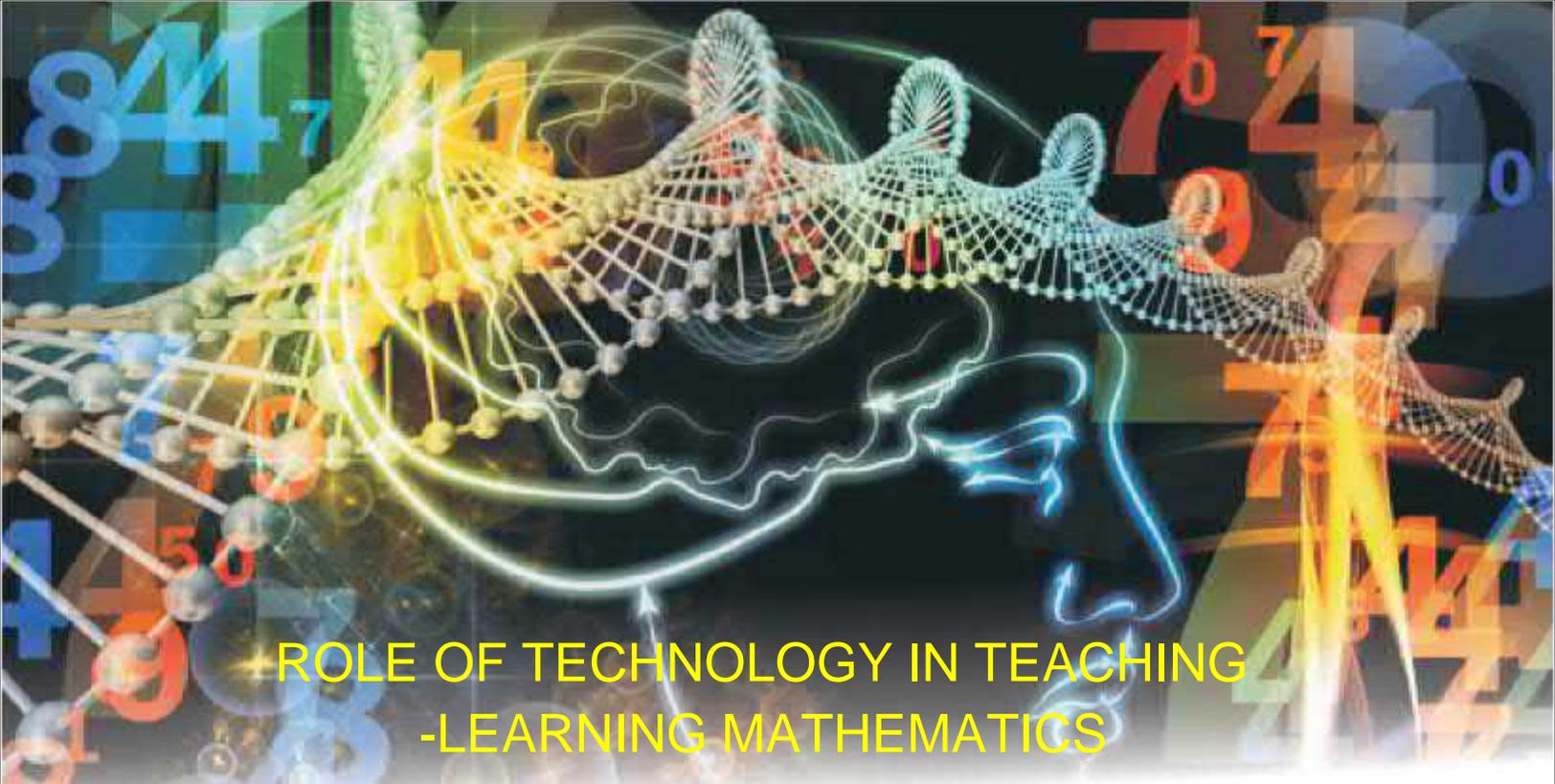


Figure 1: What a typical Node-RED flow looks like



ROLE OF TECHNOLOGY IN TEACHING -LEARNING MATHEMATICS

Schools today face ever-increasing demands in their attempt to ensure that students are well equipped to enter the workforce and navigate a complex world. Research indicates that computer technology can help support learning, and that it is especially useful in developing the higher order skills of critical thinking, analysis, and scientific inquiry.

Mathematics, to most, is a complex and difficult subject. The tendency for most students is to consider the subject as one that is boring, thus, creating lack of interest in the topics being discussed. This poses a great challenge for teachers and educators, especially in the primary and intermediate levels, wherein a good study habit and a firm grasp of basic concepts should be developed.

Don Knezek, the CEO of the International Society for Technology in Education, compares education without technology to the medical

profession without technology.

“If in 1970 you had knee surgery, you got a huge scar,” he says. “Now, if you have knee surgery you have two little dots.”

WHAT IS TECHNOLOGY?

Technology is the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function. It can also refer to the collection of such tools, machinery, modifications, arrangements and procedures.

History of Use of Technology in Mathematics

The use of technology when studying mathematics is not a new issue, since humankind always has been looking for solutions to avoid time consuming routine work. The use of technology has a long history in mathematics education.

Starting from magic slate, book, magic lantern, Blackboard, OHP, radio, Slide rule videotape, Television, Calculator, computer, Interactive Board, Apple I pad all come under technology. Paper money and coins, beans, bears, buttons, and other small items are helpful for counting and computation skills. Straws, grouped by tens, are great for teaching Mathematics. Geo boards are useful for introducing geometric concepts.

Clinometers are useful for teaching and learning of Trigonometry. An abacus allows children to conceptualize math formulas by working with tangible objects.

Digital technologies / Information Communication technologies

For thousands of years, humans made presentations using only the tools they were born with: their voice and body. That was followed by tools such as chalkboards and projectors, and then by digital tools such as Power Point. More recently other tools have emerged, such as Sliderocket, Prezi, Glogster, Animoto, and Magic Magnify. Since the 1980's, the importance of computer support in the teaching and learning of mathematics has been emphasized more and more. There are various types of technologies

currently used in traditional classrooms.

Among these are radio, television, audio tape, video tape, slide projector, overhead projector are of passive learning when interaction of the learner is less.

Computer in the classroom Having a computer in the classroom is an asset to any teacher. With a computer in the classroom, teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new websites.

Class blogs and wikis There are a variety of Web 2.0 tools that are currently being implemented in the classroom. Blogs allow for students to maintain a running dialogue, such as a journal, thoughts, ideas, and assignments that also provide for student comment and reflection. Wikis are more group focused to allow multiple members of the group to edit a single document and create a truly collaborative and carefully edited finished product.

Wireless classroom microphones Noisy classrooms are a daily occurrence, and with the help of microphones, students are able to hear their teachers more clearly. Children learn better when they hear the teacher clearly.

Mobile devices: Mobile devices such as clickers or smart phone can be used to enhance the experience in the classroom by providing the possibility for professors to get feedback.

Interactive Whiteboards: An interactive white board that provides touch control of computer applications. These enhance the experience in the classroom by showing anything that can be on a computer screen. This not only aids in visual learning, but it is interactive so the students can draw, write, or manipulate images on the

interactive whiteboard.

Digital video-on-demand: Digital video eliminates the need for in-classroom hardware (players) and allows teachers and students to access video clips immediately by not utilizing the public Internet.

Online media Streamed video websites can be utilized to enhance a classroom lesson.

Online study tools Tools that motivate studying by making studying more fun or individualized for the student.

Digital Games: The field of educational games and serious games has been growing significantly over the last few years. The digital games are being provided as tools for the classroom and have a lot of positive feedback including higher motivation for students. There are many other tools being utilized depending on the local school board and funds available. These may include: digital cameras, video cameras, interactive whiteboard tools, document cameras, or LCD projectors.

Soft ware used for teaching learning Mathematics

Graphic Calculators

Dynamic graphing tools (Geo gebra)

Dynamic geometry tools

Soft ware used for teaching learning Mathematics

Graphic Calculators

Dynamic graphing tools (Geo gebra)

Dynamic geometry tools

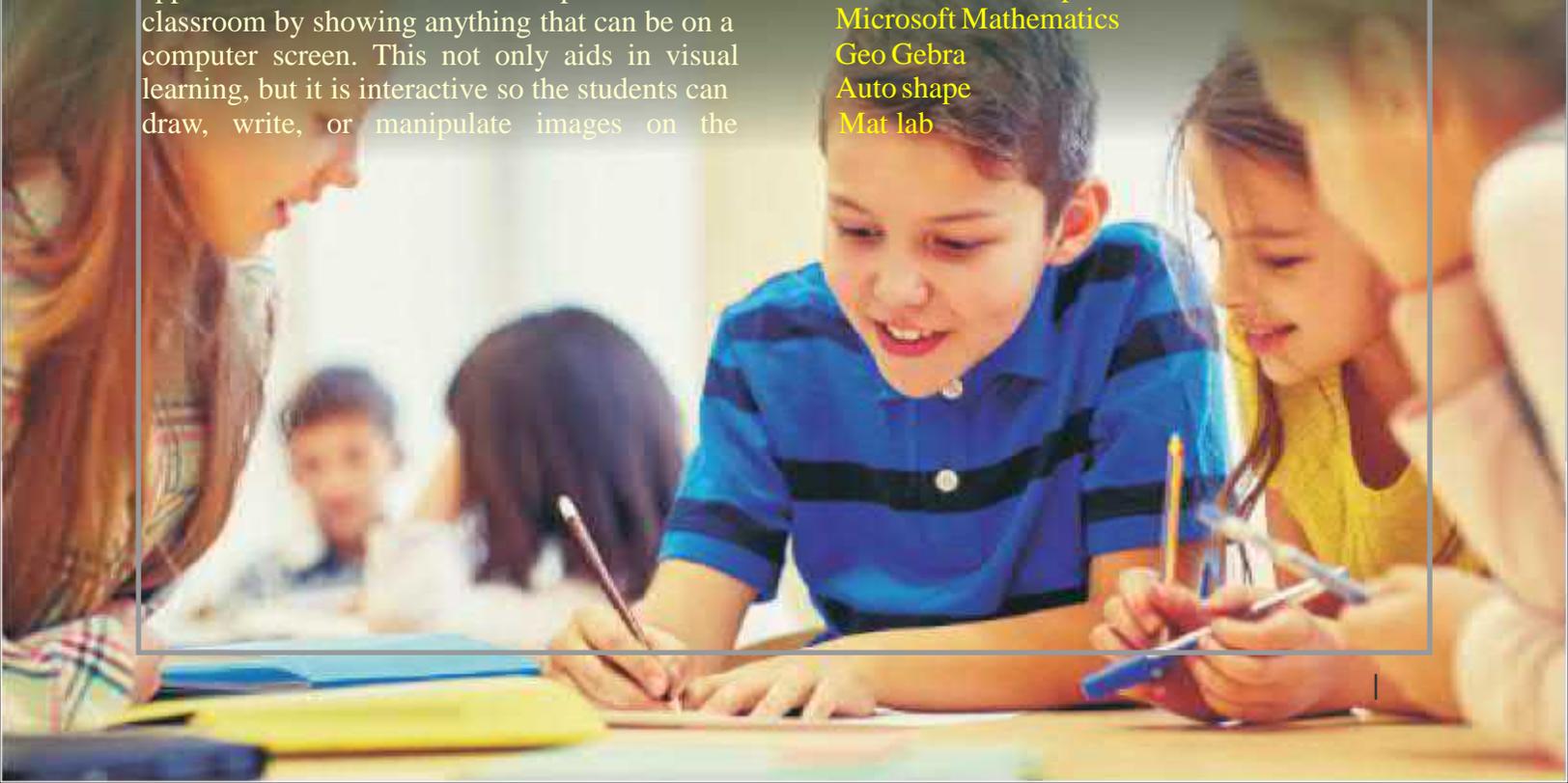
Microsoft Excel / spreadsheet

Microsoft Mathematics

Geo Gebra

Auto shape

Mat lab



Impact of technology on Teaching & learning Mathematics

Researchers have found that the move traditional paper-based mathematical notations to on-screen notations (including algebraic symbols, but also graphs, tables, and geometric figures) can have a dramatic effect. In comparison to the use of paper and pencil which supports only static, isolated notations, use of computers allows for “dynamic, linked notations” with several helpful advantages.

Impacts on Student's Learning Process

Appropriate use of Information and Communication Technology (ICT) allow Learners to have the freedom of choice to decide their own time, place, pace, or path to study. Learning materials that are enhanced with various media such as sound, narration, video, animation, graphics etc. provide learners choices to enhance their different intelligence or learning styles. If designed and implemented properly, ICT-supported education can promote the acquisition of the knowledge and 21st century skills such as Creativity, critical thinking and problem solving. Learners are able to exchange ideas more personally and directly.

The new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy to one that is learner centered.

Technology helps teacher in lesson Planning

The ease and speed of obtaining information on the Internet definitely helps the teacher users to empower themselves.

It gives teacher the opportunity to learn current innovations in teaching from other Countries that may be utilized in his/her her class to strengthen

pupils' self-esteem. It adds further information about the topic he/she is teaching.

He/she can make the content more colourful and purposeful by integrating slide show and videos related to the topic.

He/ She can successfully impart education characterized by imparting instructions, collaborative learning, multidisciplinary problem-solving and promoting critical thinking skills as highlighted by National curriculum framework 2005 (NCF 2005)

Technology provides New Ways of Learning

Technology can reduce the effort devoted to tedious computations and increase students'

focus on more important mathematics. Equally importantly, technology can represent

Mathematics in ways that help students understand concepts. In combination, these features can enable teachers to integrate project based learning. Calculators and other technological tools, such as computer algebra systems, interactive geometry software, applets, spreadsheets, and interactive presentation devices, are vital components of a high-quality mathematics education. With guidance from effective mathematics teachers, students at different levels can use these tools to construct knowledge and develop 21st century skills such as critical thinking, problem solving and decision



Sudesh Kumari, Asstt. Prof. (Department of Applied Mathematics)



NUCLEAR FUSION REACTOR WAY TO NEW ENERGY SOURCE

INTRODUCTION

ITER ("The Way" in Latin) is one of the most ambitious energy projects in the world today. In southern France, 35 nations are collaborating to build the world's largest tokamak, a magnetic fusion device that has been designed to prove the feasibility of fusion as a largescale and carbon-free source of energy based on the same principle that powers our Sun and stars.

The experimental campaign that will be carried out at ITER is crucial to advancing fusion science and preparing the way for the fusion power plants of tomorrow.

ITER will be the first fusion device to produce **net energy**. ITER will be the first fusion device to maintain fusion for long periods of time. And ITER will be the first fusion device to test the integrated technologies, materials, and physics regimes necessary for the commercial production of fusion-based electricity.

Thousands of engineers and scientists have contributed to the design of ITER since the idea for an international joint experiment in fusion was first launched in 1985. The ITER Members—**China, the European Union, India, Japan, Korea, Russia and the United States**—are now engaged in a 35-year collaboration to build and operate the ITER experimental device, and together bring fusion to the point where a demonstration fusion reactor can be designed.

WHAT WILL ITER DO?

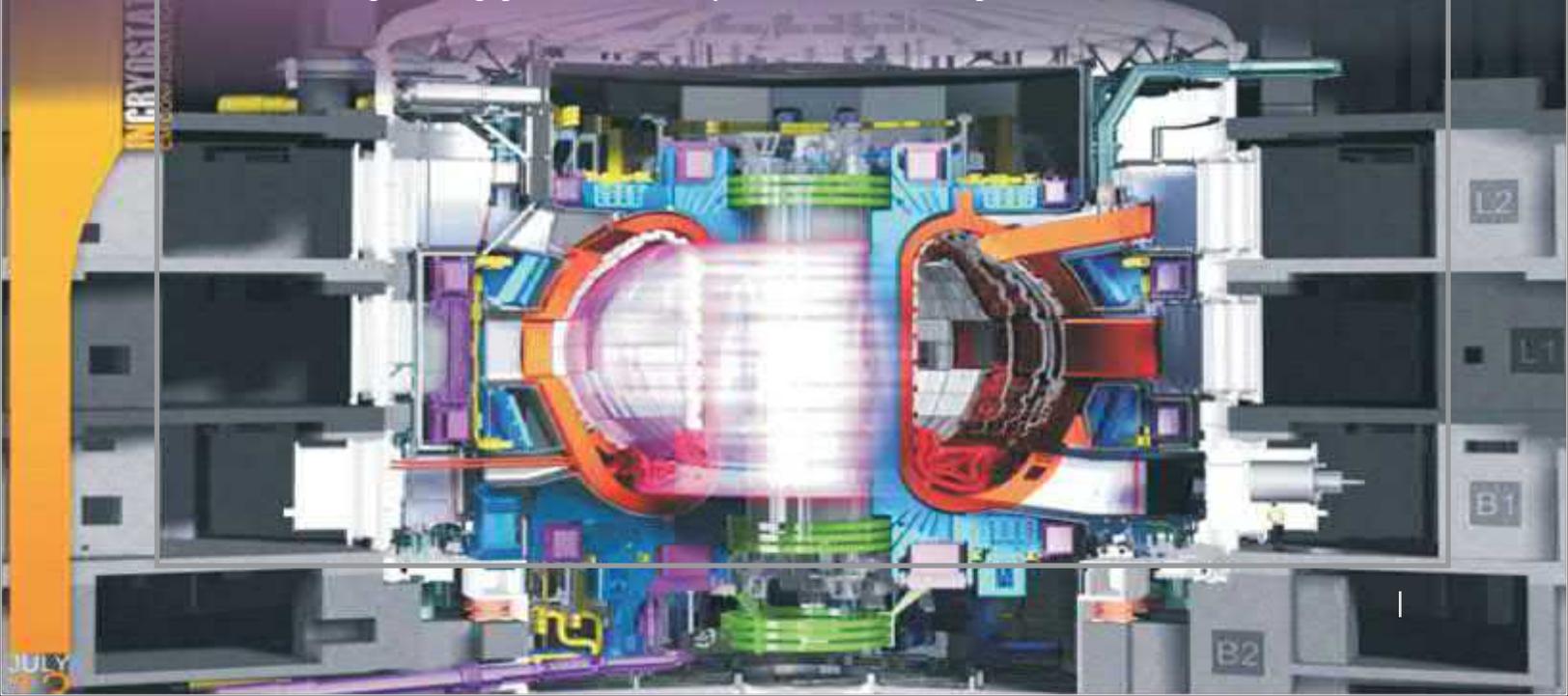
The amount of fusion energy a tokamak is capable of producing correlates directly to the number of fusion reactions taking place in its core. Scientists know that the larger the vessel, the larger the volume of the plasma ... and therefore the greater the potential for fusion energy. With ten times the plasma volume of the largest machine operating today, the ITER Tokamak will be a unique experimental tool, capable of longer plasmas and better confinement. The machine has been designed specifically to:

1) Produce 500 MW of fusion power for pulses of 400 s

The world record for controlled fusion power is held by the European tokamak JET. In 1997, JET produced 16 MW of fusion power from 24 MW of power injected into its heating systems ($Q=0.67$). ITER is designed for much higher fusion power gain, or $Q \geq 10$. For 50 MW of injected heating power it will produce 500 MW of fusion power for long pulses of 400 to 600 seconds. ITER will not capture the power it produces as electricity, but as the first of all fusion experiments in history to produce **net energy**... it will prepare the way for the machine that can.

2) Demonstrate the integrated operation of technologies for a fusion power plant

ITER will bridge the gap between today's smaller-scale experimental fusion devices and the



FUSION ENERGY



3) Achieve a deuterium-tritium plasma in which the reaction is sustained through internal heating

Fusion research today is at the threshold of exploring a burning plasma. In a burning plasma, the energy of the helium nuclei produced when hydrogen isotopes fuse becomes large enough—because of the large number of reactions—to exceed the plasma heating that is injected from external sources. As the first such burning plasma device in the world, ITER will offer scientists a unique opportunity to chart new territory in controlled nuclear fusion.

4) Test tritium breeding

One of the missions for the later stages of ITER operation is to demonstrate the feasibility of producing tritium within the vacuum vessel. The world supply of tritium (used with deuterium to fuel the fusion reaction) is not sufficient to cover the needs of future power plants. ITER will provide a unique opportunity to test mockup in-vessel tritium breeding blankets in a real fusion environment.

5) Demonstrate the safety characteristics of a fusion device

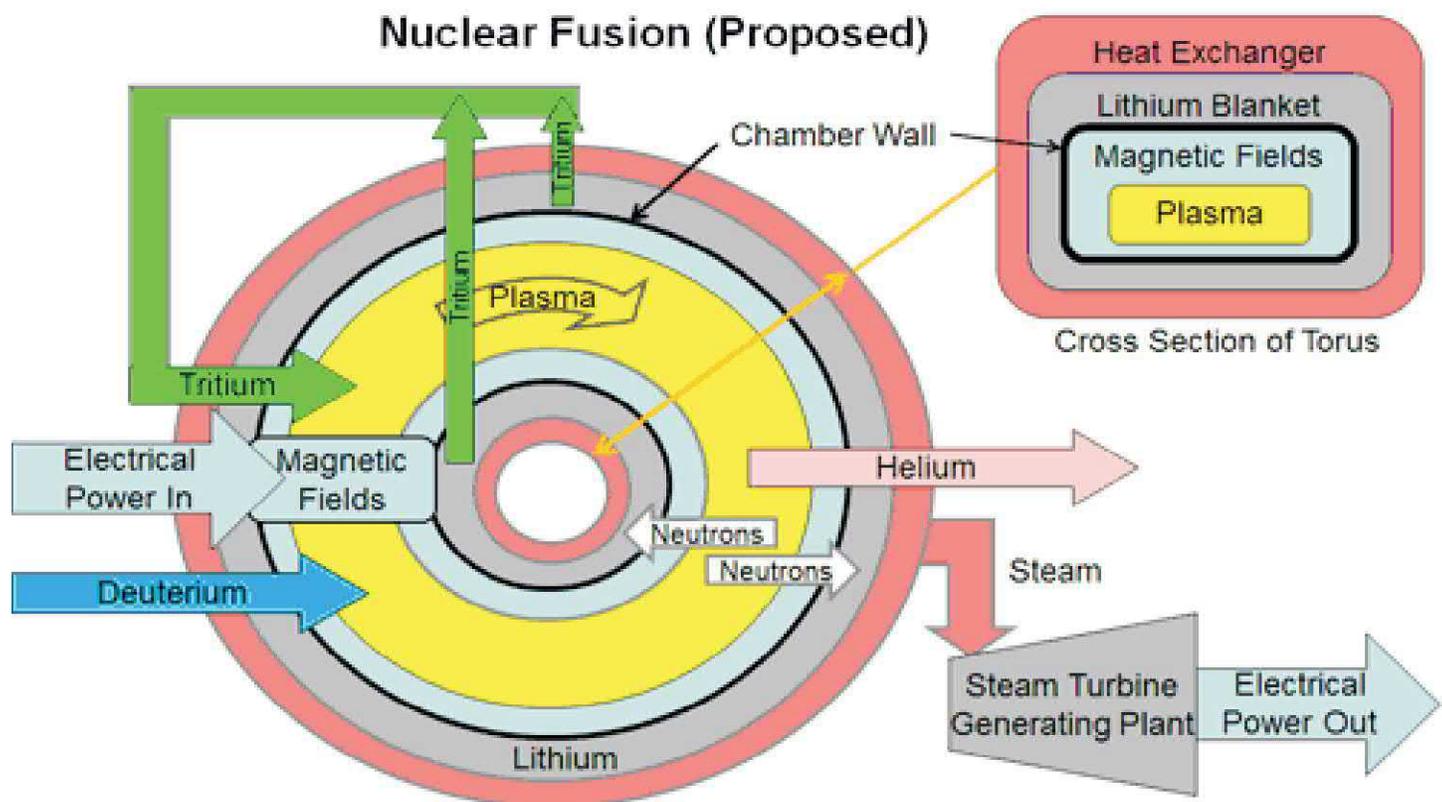
In 2012, when the ITER Organization obtained licensing as a nuclear operator in France, the ITER fusion device became the first in the world to have successfully undergone the rigorous examination of its safety case. One of the primary goals of ITER operation is to demonstrate control of the plasma and fusion reactions with negligible consequences to the environment.

ADVANTAGES OF FUSION:

The next decades are crucially important to putting the world on a path of reduced greenhouse gas emissions. By the end of the century, demand for energy will have tripled under the combined pressure of population growth, increased urbanization and expanding access to electricity in developing countries. The fossil fuels that shaped 19th and 20th century civilization can only be relied on at the cost of greenhouse gases and pollution. A new large-scale, sustainable and carbon-free form of energy is urgently needed. The following advantages make fusion worth pursuing.

Abundant energy Fusing atoms together in a controlled way releases nearly four million times more energy than a chemical reaction such as the burning of coal, oil or gas and four times as much as nuclear fission reactions (at equal mass). Fusion has the potential to provide the kind of baseload energy needed to provide electricity to our cities and our industries.

Sustainability Fusion fuels are widely available and nearly inexhaustible. Deuterium can be distilled from all forms of water, while tritium will be produced during the fusion reaction as fusion neutrons interact with lithium. (Terrestrial reserves of lithium would permit the operation of fusion power plants for more than 1,000 years, while sea-based reserves of lithium would fulfil needs for millions of years.)



No CO₂ : Fusion doesn't emit harmful toxins like carbon dioxide or other greenhouse gases into the atmosphere. Its major by-product is helium: an inert, non-toxic gas.

No long-lived radioactive waste Nuclear fusion reactors produce no high activity, long-lived nuclear waste. The activation of components in a fusion reactor is low enough for the materials to be recycled or reused within 100 years.

Limited risk of proliferation Fusion doesn't employ fissile materials like uranium and plutonium. (Radioactive tritium is neither a fissile nor a fissionable material.) There are no enriched materials in a fusion reactor like ITER that could be exploited to make nuclear weapons.

No risk of meltdown A Fukushima-type nuclear accident is not possible in a tokamak fusion device. It is difficult enough to reach and maintain the precise conditions necessary for fusion—if any disturbance occurs, the plasma cools within seconds and the reaction stops. The quantity of fuel present in the vessel at any one time is enough for a few seconds only and there is no risk of a chain reaction.

Cost: The power output of the kind of fusion reactor that is envisaged for the second half of this century will be similar to that of a fission reactor, (i.e., between 1 and 1.7 gigawatts). The average cost per kilowatt of electricity is also expected to be similar ... slightly more expensive at the beginning, when the technology is new, and less expensive as economies of scale bring the costs down. The ideal future energy mix for the planet would be based on a variety of generation methods instead of a large reliance on one source. As a new source of carbon-free baseload electricity, producing no long-lived radioactive waste, fusion could make a positive contribution to the challenges of resource availability, reduced carbon emissions, and fission waste disposal and safety issues.

Emerging Trends in It

21st century has been defined by application of and advancement in information technology. Information technology has become an integral part of our daily life. According to Information Technology Association of America, information technology is defined as "**the study, design, development, application, implementation, support or management of computer-based information systems.**"

Information technology has served as a big change agent in different aspect of business and society. It has proven game changer in resolving economic and social issues.

New trends arise within this industry every year, and it becomes important for professionals to be familiar with these different trends and all that they entail.

- **Some of the trends are as follows: -**

1. Cloud Computing

One of the biggest trends that have emerged during the past year is that of cloud computing. More and more industries are realizing that it is important for a company to have a designated place for all of their digital information and resources, and having a well-protected place that can take care of everything and keep the information safe has almost become a necessity.

2. Mobile Apps

Mobile applications have only grown in popularity over the past few years, and this year, they are surfacing in bigger and better ways. Brands and industries all over the world are trying to find ways in which one can improve their work through the use of mobile apps.

3. Big Data Analytics

Big data analytics is a trend that has grown over the past few years, and this is something that is now being implemented in almost every kind of industry that makes use of large-scale production processes and manufacturing and supply.

4. Automation

Automation is one trend that has largely hit the manufacturing and production units and is something that is estimated to only grow more in the coming years. Automation has also enabled processes to work at a faster pace and enables companies to reach their goals in a much more efficient manner.

5. Artificial Intelligence

While automation is growing, artificial intelligence is now starting to see the light of day. The past year saw the introduction of several new mediums of artificial intelligence.

6. Smart Technology

Smart machines that use artificial intelligence or automation are on the rise, even in small-scale units and smaller implementations. Homes are now becoming smarter as a result of smart technology being used and opted for in homes.

7. Virtual Reality

The gaming industry has always been one that has experienced growth alongside the field of information technology, and virtual reality has taken this one step further, giving customers the very epitome of digital experience.

8. Augmented Reality

Augmented reality is another approach to 'artificial experiences' that individuals are now being given access to. This has improved the manner in which the field has been able to develop.

9. Blockchain Data

Cryptocurrency might have been at an all-time high in 2017 and 2018, but the fact remains that this is something that is yet to see a significant amount of development. Blockchain technology is only now starting to grow in popularity and is being implemented by industries across the world for all that it offers.

10. Cyber Security

With the growth of digital mediums and technology, the potential threats that people can face are only rising. Because of this, cybersecurity has had to grow extensively over the past few years, simply to stay in touch with the growth that is being experienced.

11. Growth of IoT Networks

The Internet Of Things is a concept that all digital devices are connected by a single medium through which one would be able to control everything within their homes. More and more brands realize that this is indeed the way of the future and is something that is within technological reach.

12. Predictive Analytics Implementations

Predictive Analytics is the process of analyzing large volumes of data to be able to come to a conclusion regarding the possible outcomes that a situation might have.

13. Cloud Migration

Cloud migration has proven to be incredibly beneficial for businesses that want to move in a digital direction and who want to maintain better records of their digital data.

14. Rise Of Data Officers

With the growing importance of information technology and data analytics, data officers have become even more important in institutions and industries all over the world. The number of positions open within this is plenty and is growing as more and more businesses are in need of someone proficient in this.

15. Quantum Computing Applications

Quantum Computing is a process of conducting complex equations and processes to perform several complex tasks or process large volumes of information with absolute ease. This has proven to be incredibly beneficial for a variety of different industries, which is why it is seeing a massive amount of growth.

Power Scenario Of Jammu And Kashmir

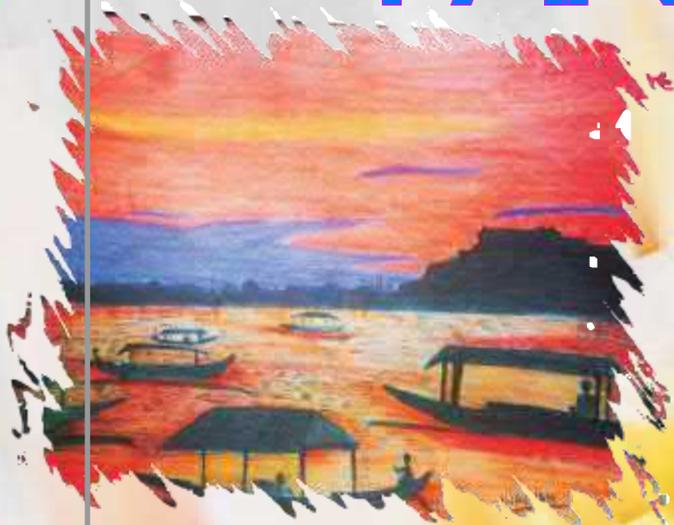
Jammu and Kashmir is blessed with sizeable natural resources like sunshine, wind, vegetation, water flow, biomass and other biological wastes are abundantly available in the state yet are not being potentially harnessed which, if suitably harnessed on priority, could transform its economy and bring socio-economic development not only in the state but in the whole region. It has led in forcing peoples to use wood resulting to deforestation.

The present power scenario in the U.T. of J&K is now becoming restive as people are facing peak demand deficit like in most of the states though mostly in North & Central India. The arrival of early heat wave and hottest March in around 122 years has most probably led to "switching on" of Air Conditioners in homes and in industries as well. The rise in demand started and peaked in late March itself which is unusual. India is currently having 380 GW installed capacity with ability to meet 205 GW peak demand and statistics show that nations peak hour power demand grew most since 1994 which is attributed to the rural household electrification under Saubhagya and urban infrastructure up gradation under IPDS and PMDP. These up gradation works have contributed to reliable quality supply with less load shedding thereby effecting "power demand growth" up by around 8-10%. The pick up in industrial activity too has contributed to peak demand growth. It is here where the power planners have complacently miscalculated the growth in consumer load due to improved reliable power supply over the last two years. At present we are getting 1900MWs of power against requirement of 3200MWs and the shortage of 1300MWs is going to take some catching.

As of October 2017, J&K had a total installed power generation capacity of 3,297.28 MW, comprising 1,733.43 MW under central utilities, 1,513.03 MW under state utilities and 50.82 MW under private utilities.

The situation offers an opportunity to revisit the issue of commercialization of coal India limited to boost domestic coal generation. The focus again has to be on generation sector with ability to supply peak demand which is slated to go beyond 205 GWs. With self reliance imminent in power generation in next 4-5 years in the UT with up coming Hydro Power Projects, we need to avoid such situation where demand supply gap is huge by encouraging use of solar roof tops and stand alone Micro hydel projects in rural areas where the potential is plenty to relieve the peak demand dependence on local grids. As a society we also have to remember that once our former Prime Ministers Lal Bahadur Shastri during 1964 had appealed countrymen to miss a meal at least in a week to tide over shortage of food grains in the country and similarly we can restrict our peak load for sometime to assist the government in its grapple with present power scenario as they say "All stars are born in the dark and all darkness dies in the light".

PAINTINGS



REFLECTIONS

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Excellence unlimited



Name: Chandeeep Singh
Father name: Surinder Singh
D.O.B: 11/jan/1999

MY Story.....

It is very well said 'Life is a Blessing' Safar me Suffer Karna hai yaan Suffering ko 1 B'ful sa Safar banana hai Ye choice apne hath me hai Ooops! Mere to Hath hi nahi hai...

Yet I am 3 Times International Player with 4 Golds 1 Bronze and 2 World Records being fastest 100 m para athlete and an aspiring Electrical Engineer too. And trust me, this is not even 1 % of What I aspire to do.

Hello everyone, I am Chandeeep Singh Sudan, a 19 year old Para Athlete from a place jiska naam apne Akhbaro ki surkhiyo me aksar suna hoga –JAMMU. And yes I am not a terrorist ;) Jokes Apart.

Me ap sbke samne hu to address u as a Motivational Speaker I suppose, But I think, each one of us is an inspiration in itself. It's just that We are blessed with Unique skills, Talent and aptitude towards Life and that is what differentiates You from Me. Remember Bachpan me hum' My aim In Life essay Likhte the, I used to write : 'My Aim in Life is to Join Belt Force and Serve My Nation' back in 3rd-4th standard, but who knew what Life had planned for me... I was 4 1/2 , fell from Terrace, survived a head Injury successfully I was 6 1/2 , was almost Drown in water, for more than 15 min, still survived Chote mote accidents ki to Ginti b yaad nhi N then 2011 ka wo din, jb ghar pr koi nit ha, me Terrace pr neighbour k sath khel raha tha, 11000 KV k electric shock se samna hua. Jammu se Ludhiana refer hua, apne bajuon ko khud chop hote dekha. Still survived. Ap bhi soch rhe honge, Kitna “Dheet” hai. Yes.... That 'Zidd' 'Pagalpan' “Dheetpan' ' Determination' or whatever u may call it, That is What keeps me Moving each Day and That Is Why Today I got fortunate enough to interact with you.

I am Not here to talk about My TRAGEDY, but the OPPORTUNITIES that lie behind every obstacle that comes between YOU and YOUR GOAL... and MY AIM then was to SERVE my NATION and M blessed to be doing so, bus medium change ho gya hai.

Mera Tujhse Hai Pehle ka naata koi, Yuhi nahi dil lubhata koi' ye gaana muje lgta hai mere aur tragedies k sath bht sahi baithta hai. I don't remember much but my Parents tell me that I had totally stoned out when they took me to Hospital. Body's water level as well as Blood had gone down drastically and usually the electricity passes through the body and comes out through the limbs, but for me, it had found its way out through my gut splitting my stomach wide open. It took more than 15 days for me, during which I underwent many minor and 3 major surgeries, thereby getting back to senses and realising I did not had both my arms . and you know that was d 1st & last Time I Cried while they were getting me out of OT and I told my Mom ' Maa _____”. But a 11 year old hardy could figure out what exactly he had gone through. Since I was Bored of the terrible ICU atmosphere, 15 days after my final surgery I asked my Cousin to give me his phone. He surprisingly asked 'Veere Ki Krenga' Me keya ' Mere paer te rakh' Asking him to keep his phone at my feet and trust me even Doctor was in shock after seeing me operate phone with my feet. School Life is the craziest because of Friends for most of us, but mine got crazier with my Principal. 2 Jan 2011 I met with the accident. Mostly recovered. I was back to jammu on march 2. And my Principal asked me to join back school fro 3rd itself as my final exams were approaching. Thank You mam, for treating me just like every other student. And not to forget those friends and relatives who never stopped Bullying me, who actually wanted to show sympathy saying 'Tsu Tsu Tsu' but that onlu made me stronger giving me Nw Horizons and Wings To Fly. December 2011, without telling at Home, I borrowed Skates from a school senior and started Skating in school itself. Innumerable State Level awards, National Awards while competing with all other players from across country in General category, I mean - Non Para athletic category. I won't say Luck, but my hardwork and dedication helped me Registered 2 World Records in my name – D fastest 100 m Para Athlete in Assist Book of World Records and Golden Book of World Record. I got honoured by Hindstan Times as Top 30U30 in 2015. By India Today as Top 6 Heros of India

Poster to kya Calender me bada bada photo chapne lga. Bas zindagi chalte chalte jaise dodhna shuru ho gayi... And then this Life changing moment. I got this opportunity to meet the Flying Sikh – Milka Singh Ji, who became my 1st ever sponsor that further gave me confidence that i am on right path to reach my Goal. His 1 Line 'Never Leave Hope. Be Determined' has just imbibed in me like Blood. And then was the time where I was getting more passionate for my AIM, Serving my Nation. Milkha Singh ji guided me to get in touch with Para Athlete Committee and with their guidance I dediced to step into Taekwando and Who Knows I might be the Next World Champion

Darr – Haan lagta hai, bht zada lagta hai. bcoz the form of Taekwando I have adobted is called 'KYORUGI' and its a fight that might cause many major injuries too... I keep on chanting Waheguru Waheguru to keep myself FOCUSED and seek blessing from Parents and Almighty k 'Ring se Bahr aau to Gold k sath'

1st Match at Nepal – I won GOLD.

2nd at Veitnam – GOLD and BROZE in 2 different formats

1. Inter House Foot Ball match in 2009-2010 and got third position.
2. Jammu Gold Cup Roller Skating Championship in 2014, got 4 gold medals in four of the races.
3. 61st national School Games in 2015-2016.
4. 7th All India Toller Skating Championship 2012, got third position.
5. 2nd Kathmandu Kyorugi and Poomsae International Taekwondo championship 2018, got 1st position (Gold Medal).
6. The 4th Asian Para – Taekwondo open Championship World Taekwondo(G4) held in Hochiminh City, Vietnam from 24th -28th of May 2018, Gold Medal –K41MALE+75KG.
7. THE 4th Asian Para – Taekwondo open Championship World Taekwondo(G4) held in Hochiminh City, Vietnam from 24th -28th of May 2018, Gold Medal –K42MALE+75KG.
8. Golden Book of World Records in fastest 100 m Para skating, on September 27,2016.
9. Assist World Record, fastest 100 m Para skating on 27-09-2016.
10. CBSE North Zone, inter school Sports & Game Competition, 2012-2013.
11. CBSE North Zone, inter school Sports & Game Competition, 2013-2014.
12. CBSE North Zone, inter school Sports & Game Competition, 2014-2015.
13. CBSE North Zone, inter school Sports & Game Competition, 2015-2016.
14. CBSE North Zone, inter school Sports & Game Competition, (Football) 2014-2015.
15. J&K Roller Skating Federation of India , four gold medals in four races, in 2015.
16. 2018 KIMUNYONG CUP International Open Para Taekwondo Championship, K41Men75Kg, 1st Place (Gold Medal).
17. 2018 KIMUNYONG CUP International Open Para Taekwondo Championship, K42Men75Kg, 1st Place (Gold Medal).

Achievers

Name: Jaspreet Singh

Branch: Mechanical Engineering

Batch: 2014-2018

Selected in IMS GOA and got placed in “SCORPIO GROUP”.



I Jaspreet Singh, student of Mechanical branch of MBSCET, 2018 pass out. I got selected for one year pre sea training course in Marine Engineering in IMS GOA and got placed in SCORPIO GROUP, which is one of the world class shipping group. I achieve this platform due to my hard work, dedication, sincerity and assertiveness towards my goal. I would like to thank my family and faculty of MBSCET for their endeavor motivation and teaching. If I could describe my experience at MBSCET in single word, it would be wonderful. I am going to cherish each and every moment of my college days.

To my juniors, I must say working hard in right direction is a key to success and one should be goal oriented and passionate about targets. At the same time enjoy your college days. I wish them good luck for their bright future.





AAROHAN



2019

Interview of Alumni

Parinder Paul Singh
Sr. Hadoop developer
NTT Data - Halifax, Canada.

Branch : Information and technology
Batch: 2009-2013

1. How do you describe yourself? What do you consider to be your greatest strength and weakness?

“I would say I'm Someone who takes responsibility for their actions when things go wrong. I don't look for outside forces to blame; rather, I'm someone who looks at what I can improve upon the next time around. Pointing fingers solves nothing.”

“I'm very collaborative and have always preferred to work in groups. In the project teams I've directed, members work with a variety of people and are motivated by diverse creative tasks. Since I began managing my current team, I've increased productivity by 15 percent and retention by 25 percent over 2 years.”

“Honestly? I love my sleep and there are times when I find it's hard to get up and get to work on time...which means I tend to drive to fast on my way to work. I must have 5 speeding tickets of 250\$ which, when you think about it is pretty funny...but expensive. Oh well. Guess that's just who I am!”

2 Tell me about a project or accomplishment that you consider to be the most significant in your career.

“I have several notable accomplishments in my career. Probably the most notable accomplishment was the delivery of the most recent version update to one of our core projects for Google flight stat. This was a 24-month project and I was one of 5 team members. What made it notable for me was that my role expanded from being one of the team members to Trainer. This allowed me to practice planning a large-scale project and motivating a sizable group of employees.”

3. When have you been most satisfied in your life?

“I recently took on a new and innovative project at work gave me a lot of personal and professional satisfaction.” BUT my need - wants and the desire to become a CEO.

4. What is the best moment in our college that you never want to forget?

Every single moment of my college life is cherishable as I was blessed with the most amazing professors and humble colleague who gave a great contribution to completing my degree

6. Who is your role model, and why?

My role model is my father who always taught me to be hardworking and kind no matter what the situation is. Plus I admire him a lot as I have seen the struggle he did with a smile on his face .. I also wanted to be like him.

7. If you were working on a project with another person and that person was not doing his or her part, how would you handle the situation?

Firstly I will interact with them and analysis their strength and weaknesses after getting knowledge over them I will develop a friendly environment in which I can give them a brief knowledge about the text in a way they wanted to have and will motivate them so that they don't lose their hope. And in the result, they will work more confidently with me.

8. What are the opportunities for growth and advancement?

The opportunities for growth and advancement can be done through developing a good skill and adopting new technologies.

9. What message would you like to give to your juniors?

The message to my juniors is to work hard and don't chase the money. If you chase the money, you will lose yourself along the way. Chase what you're passionate about. You may not start at the top, but the money will come, and if you're passionate about it, you will find a place that you fit so well that it'll feel as though you haven't worked a single day in your life.

Be the one from today, moving forward that generations from now, your grandchildren will listen to the chronicles of your life as a bedtime story.





Placements of 2019-20 Session

SS Teleservices, Kurukshetra

S.no.	Name	Branch
1.	Gourav Badhoria	EE
2.	Ilyas Bashir	EE

Pie Infocomm Pvt. Ltd., Lucknow

S.no.	Name	Branch	S.no.	Name	Branch
1.	Gagandeep Singh	EE	10.	Simaranjeet Kour	ECE
2.	Shivam Mahajan	EE	11.	Sanamdeep Singh	ECE
3.	Areeha Malik	EE	12.	Paramdeep Singh	IT
4.	Pankaj Raina	EE	13.	Surasha Sher	IT
5.	Sameer Sharma	ME	14.	Abruee Jan	IT
6.	Nav Sharma	ME	15.	Vaishalini Singh Jamwal	CSE
7.	Apurva Mangotra	ME	16.	Avneet Kour	CSE
8.	Navjot Singh	ME	17.	Annie Kaur	CSE
9.	Akansha Sharma	ECE			

Translab Technologies Pvt. Ltd., Jammu

S.no.	Name	Branch	S.no.	Name	Branch
1.	Satyam Sethi	IT	7.	Vaishalini Singh Jamwal	CSE
2.	Novijoth Singh	IT	8.	Avneet Kour	CSE
3.	Ritesh Kumar	IT	9.	Harpreet Kour	CSE
4.	Deepak Choudhary	IT	10.	Sakshi Kundal	CSE
5.	Zuhaib Ahmad	IT	11.	Gurjot Kour	CSE
6.	Jagatpal Singh	IT			

Cease Fire Industries, Delhi

S.no.	Name	Branch
1.	Kanika Mahajan	EE

RAPS iTech, Chandigarh

S.no.	Name	Branch
1.	Barat Raina	IT
2.	Saksham Gupta	IT
3.	Harman Singh	CSE



SWACHH BHARAT ABHIYAN



Activities



Workshop on “Meeting Challenges of Accreditation by NBA” held on 13th to 15th September, 2019 & 29th September, 2019 to 2nd October, 2019 by EQUATE India, New Delhi



Industrial Visit to 30 MDL Sewerage Treatment Plant Organized by Mechanical Eng. Dept.



Seminar on Recent Advances in Industrial Engineering



A 2-Day Workshop on Bluetooth Robotics with Android

Glimpses of Induction Week



Lighting of traditional lamp by dignitaries



Ms. Ravinder Pal Kour (Head, MasterPrep & Canam Institute) delivered a lecture to freshers and other students, helping them to pursue higher education abroad.



Dr. Garima Gupta (Prof. English Department, University of Jammu) delivered a lecture on Soft Skills



One day "Career Path Orientation Workshop" by Sh. Puneet Arora CEO, Ecologic Corporation (H.P.)



Motivational lecture by Mr. Rohit Ranjan from Art of living (Founded by Sri Sri Ravi Shankar)



Principal Dr. Anjani Kumar addressing the audience

WORKSHOP CUM PLACEMENT DRIVE







**Mahant Bachittar Singh
College of Engineering and Technology**
(A constituent of Sant Manjit Singh Trust)

(Approved by AICTE, Govt. of J&K and Affiliated to University of Jammu)
J&K State, India



1st Position	2nd Position	2nd Position	5th Position	5th Position
Anmol Kumar	Vikram Makker	Dushyant Kesar	Roshan Singh Sambyal	Karamdeep Kour
Roll No:0795/15	Roll No: 0794/15	Roll No:0809/15	Roll No:0886/15	Roll No:0762/15
Branch: Mechanical	Branch: Mechanical	Branch: Mechanical	Branch: Mechanical	Branch: Electrical
Marks : 915/1000	Marks : 907/1000	Marks : 907/1000	Marks : 886/1000	Marks :886/1000



5th Position	6th Position	7th Position	8th Position	9th Position
Sushant Khajuria	Nav Mahajan	Aadhishwar Arora	Siddarath Paul Singh	Zuhaib Ahmad Akhoon
Roll No:0849/15	Roll No:0838/15	Roll No: 0802/15	Roll No:0811/15	Roll No:0625/15
Branch: Mechanical	Branch: Mechanical	Branch: Mechanical	Branch: Mechanical	Branch: IT
Marks : 886/1000	Marks : 885/1000	Marks :876/1000	Marks :874/1000	Marks : 872/1000

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Student Coordinators : Rashleen Kour, Tanveer Singh, Aadhiswar Singh



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