

Bhilai Institute of Technology, Durg

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From the Editors

“It is very easy to defeat someone, but very hard to win some one.”

- A.P.J Abdul Kalam

At an outset a very happy new year to one and all, we are pleased to release volume 4, issue 1 of the Newsletter of our department. Year 2018 saw some memorable achievements, Vikas Sathaye a pune born engineer won an Oscar for science and technology, there were five remarkable space achievements by ISRO, Vinesh phogat became the first wrestler to clinch gold in Asian games, P V Sindhu clinched a gold in world tour finals, Manika Batra won medals in all the events she participated at Gold Coast games and many more, Our country India is land of budding talents, the achievements in the past are inspiration and motivations for many more to come this year and in future.

Look at the sky. We are not alone. The whole universe is friendly to us and conspires only to give the best to those who dream and work.

A. P. J. Abdul Kalam

Laurels

- **Garima Rahangdale** from 7th Sem EEE selected in campus drive by Panasonic in the month of October 2018.
- **Sheetal Kumari Prasad** and **Anubha Mishra** from 2018 batch secured 96.6 and 95.5 percentile respectively in CAT exam.
- Following students successfully completed NPTEL online certification courses in October 2018
- **Gaurav Pandey, Josyula Sai Bharati, Akshada Deshpande, Annapurna Tandan, Ishika Sandilya, Yogesh Kumar Verma, Kirti Waghade, Shivani Netam, Meghana Singh**
- **Preksha Sahu** of 3rd sem secured 2nd position and a national award in the solo Kathak dance performance at Bharat Sanskriti Mahotsav 2018, organized by Hindustan Art and Music society on 20th Oct 2018.
- **Preksha Sahu** was awarded Nipun Kalavant Sammaan for outstanding performance at an international festival and competition of music and dance held from 26th-30th Oct 2018.
- **Maneet Kumar** of 3rd Sem secured gold medal and first position in inter college badminton tournament 2018 organized by CSVTU, Bhilai.

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Snippets

Did You Know?

The 30th November is known as **Computer Security Day**.

Vocabulary

Dexterous: showing or having skill, especially with the hands.

Visual Effects Keywords

1. Academy

aperture: A specific 35mm film framing.

2. Blue record: The layer of the film that captures blue light.

3. Channel: For a given image, the sub-image that is composed only of the values from a single component of each pixel.

4. Deinterlace: The process of separating the two **fields** that make up a video image into two distinct images.

5. Edge detection algorithm: An algorithm used to enhance or isolate transition areas, or *edges*, in an image.

- **Artificial Skin** -Stretchy Artificial 'Skin' Could Give Robots a sense of Touch. Rubber electronics and sensors that operate normally even when stretched to up to 50 percent of their length could work as artificial skin on robots, according to a new study. They could also give flexible sensing capabilities to a range of electronic devices, the researchers said. Like human skin, the material is able to sense strain, pressure and temperature, according to the researchers.
- **No More Glare**- 'Moth Eye' Smartphone Coating Doesn't Reflect Sun light. Unusual structures on moth eyes that help the insects see at night have inspired a new anti-reflection film for electronic devices. The new technology could help users see their screens even in bright daylight. The film significantly reduces glares as well as the need to duck into the shade to read what's on the screen.
- **Gravity Blankets**- Gravity is here to help you combat your anxiety. Starting off as a Kick starter campaign, the company Gravity has created a therapeutic weighted blanket engineered to be around 10% of your body weight.
- **LynQ**- Getting separated from friends or a family member at an event or festival can be annoying. LynQ helps you find your loved ones when you get separated from the group.
- **Zipline**- The California-based startup Zip line intends to use drones to save lives. The company uses their drones in remote areas across the world to deliver vital supplies and even the delivery of blood their latest drone invention can carry up to almost 2 kilos at 128kph for up to 160 km round trip.
- **ICON**- The Texas-based start-up ICON caught the attention of the world when it created a fully functioning 350-sq.-ft. home in 48 hours with the assistance of their Vulcan 3D printer.

UNICEF contribution towards child protection

Kirti Waghade, 4th sem

Childhood should be care free, playing in the sun; not living a nightmare in the darkness of the soul hence the child protection is the greatest concern in the fast developing world. Children are the living message we send to a time we will not see hence proper nourishment whether it is a physical, psychological, behavioural, all matters greatly. UNICEF a renowned world organisation is greatly concern for child protection. UNICEF (united nation children's fund) began its mission in 1946 as a relief organisation for children after world war 2, its mandate soon expands to helping children whose lives were in risk in developing countries. Their priorities have been to realize the rights of children to a basic quality of life and the rights defined in the convention on the rights of the child. UNICEF essentially focuses on five areas namely, child survival and development, gender equality, child protection, children with disabilities, HIV/AIDS. UNICEF runs many programs all over the world along with the government of countries, like water and sanitation programme in bengal, health care in Somalia, special training programme in India to help farmer child labourer enter school system etc. The test of the morality of a society is what it does for its children hence child exploitation, child sexual abuse will nowhere lead to any countries development. All children are born to grow, to develop, to learn and to articulate their need and feeling for the protection. We need to support more organizations like UNICEF.

RECOVERING HABITATS USING NANOTECHNOLOGY

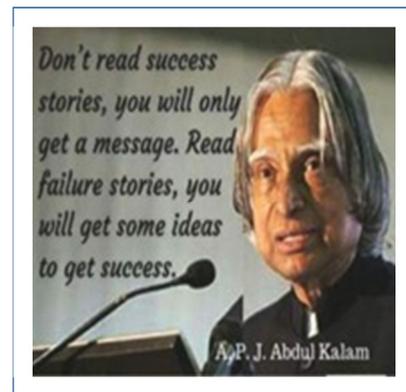
Shreya Deb, 6th sem

Marino Morikawa, a Peruvian-Japanese scientist used his PhD and knowledge to come up with a ground breaking idea of recovering polluted natural water habitats using NANOTECHNOLOGY. He got his motivation when his father told him about the lake El Cascajo's bad conditions, where he did fishing with his father during his childhood.

Marino who earned a degree in environmental science from Japan's Tsukuba University, visited the wetlands and found a stinky swamp covered with aquatic plants. He studied the conditions thoroughly and went back to Japan where he came up with his research which will end up saving not only his childhood lake but also different natural water habitats.

Marino came up with two methods, first being a micro **nanobubbling** system, which consists of bubbles 10,000 times smaller than those in a soda beverage and remain in the water between four and eight hours. The bubbles trap and paralyze viruses and bacteria, destroying them and causing them to evaporate when these come to the surface. The second method Marino used was **biofilters**. It attracts water bacteria and preserves the good species that contribute to micro-flora conservation and bioremediation. All this he did by self funding, taking loans and raising funds, which finally proved to be worthy.

The lake's condition before 2010 and after 2014 has been a 180 degree change. After successfully saving his childhood lake, Marino's next target is the recovery of Lake Titicaca which was scheduled for 2018 and the second project aims to restore the Huacachina lagoon. All the best wishes to this noble scientist.



BRAIN TEASERS

I have forests but no trees.
 I have lakes but no water.
 I have roads but no cars.

Answer in the next issue.
 Previous Answer: e

Graphene - The Magical Material

Josyula Sai Bharati, 4th sem

Graphene is a first ever man-made nanomaterial in 2D. Basically, graphene is an allotrope of carbon in the form of a plane of sp² bonded atoms. In graphene, electrons behave as massless particles, making the electronic properties of the material unlike anything seen before. The electrical charge carriers in graphene move at speeds 10 to 100 times faster than in silicon chips. Graphene is the thinnest compound known at one atom thick, the lightest material known, the strongest compound discovered, the best conductor of heat at room temperature and also the best conductor of electricity. Graphene is being used to enhance not only the capacity and charge rate of batteries but also the longevity. It is also used in photovoltaic devices as it has excellent electron transport property and extremely high mobility, used to protect from electrostatic discharging (a problem faced by computer chip industry) and many more to come.

Pioneers



Carl Edward Sagan (November 9, 1934 – December 20, 1996) was an American astronomer, cosmologist, astrophysicist, astrobiologist, author, science popularizer, and science communicator in astronomy and other natural sciences. Sagan assembled the first physical messages sent into space: the Pioneer plaque and the Voyager Golden Record, universal messages that could potentially be understood by any extraterrestrial intelligence that might find them.



Richard Phillips Feynman (May 11, 1918 – February 15, 1988) was an American theoretical physicist, known for his work in the path integral formulation of quantum mechanics, the theory of quantum electrodynamics. For his contributions to the development of quantum electrodynamics, Feynman, jointly with Julian Schwinger and Shin'ichirō Tomonaga, received the Nobel Prize in Physics in 1965.

What is accreditation?	Why Accreditation?
<p>Accreditation is a process of quality assurance and improvement, whereby a programme in an approved Institution is critically appraised to verify that the Institution or the programme continues to meet and/or exceed the Norms and Standards prescribed by regulator from time to time.</p> <p>It is a kind of recognition which indicates that a programme or Institution fulfills certain standards.</p>	<p>The purpose of the accreditation by NBA is to promote and recognize excellence in technical education in colleges and universities—at both the undergraduate and post graduate levels. Institutions, students, employers, and the public at large all benefit from the external verification of quality provided through the NBA accreditation process. They also benefit from the process of continuous quality improvement that is encouraged by the NBA's developmental approach to promote excellence in technical education.</p>

VISION

To impart education and transform students into competent professionals in Electrical and Electronics Engineering to excel in various challenges to serve the society.

MISSION

- M1:** To provide excellent infrastructure, competent faculty members, disciplined ambience with rich ethical values,
- M2:** To assimilate Engineering knowledge and transform into efficient professionals,
- M3:** by inculcating perpetuated learning to cope with the challenges in research and industry.

PROGRAM EDUCATIONAL OBJECTIVES

- PEO 1:** Understand and apply the necessary concepts of core subjects in the field of Electrical & Electronics for engineering practice.
- PEO 2:** Perform in multidisciplinary environment and design innovative systems to befit the needs of R&D and industries.
- PEO 3:** Emerge as a responsible individual with a sense of eco friendliness, social and professional ethics.
- PEO 4:** Prepare for higher studies and flourish technically through life-long learning to adapt new technology in engineering for the development of the society.