

- USB 3.0 Speeds Up Performance on External Devices
- 32-Core CPUs From Intel and AMD
- Gesture-Based Remote Control
- Wireless Power Transmission

PUBLICATIONS

- “Developing A Secure Cloud Storage System for Storing IoT Data by Applying Role Based Encryption”, Mr. Bhise A.S. Twelfth International Multi-Conference on Information Processing-2016 (IMCIP-2016) ELSEVIER, Procedia Computer Science 89 (2016) 43 – 50 .

TRAINING ATTENDED

Faculty Names	Event
Mr. Kawale S.M.	
Mr. Shinde A.B.	
Ms. Mane V.D.	One week STTP on IOT at SVERI'S COE , Pandharpur
Ms. Kasab B.S.	
Ms. Vyawahare A.K.	
Mr. Bhise A.S.	Networking training at DLINK pvt. Ltd. , Thane
Mr. Shinde A.B.	Software development training at L & T pvt. Ltd., Mahape , Navi Mumbai

UPCOMING EVENTS

In this semester we are planning for our annual student event COMPIT

In COMPIT students are going to organize various events like Programming Contest, Blind C, Quiz contest, Poster Presentation, Video Presentation and LAN Gaming. Winner will awarded with Prize and certificates. Last year 250 students were participated in this events. Through this we got success in front of motivating our student to participated in competitive events, not only for our institute but also national as well as international competitions.

Industrial visit for 2nd and 3rd year students

We are planning industrial visits for our students to Dinita Pvt. Ltd. Satara, Ideaz Multimedia Pvt. Ltd. Kolhapur and Dalvik apps Mumbai.

Expert Lecture

We plan expert lecture over the syllabus which conducted by industry experts for students.

Student Development

Department conducted short term professional courses in that we take 10 to 15 days workshop for student. Last vacation we conducted workshop for VB.Net and C programming . Upcoming vacation we plan for Android project de-

Department of Information Technology

EDITORIAL

It gives us great pleasure to present the eighth issue of our departmental newsletter “TANTRA”, which gives us the opportunity to focus the achievements in our department and new trends in Information and Technology field.

We are thankful to all the students and faculties who have contributed during the preparation of this newsletter. We have tried our best and given positive efforts, expecting creative responses from everyone to continue the flow of knowledge through this newsletter.

Ms. Mane V.D.

Student Co-ordinator

Ms. Deshmukh S. S.
(TYIF)



TANTRA

Technology Awareness & Knowledge to Rising Associ-

IN THIS ISSUE >>>

WIRED ROADS COULD POWER ELECTRIC CARS P1

BRAIN GATE TECHNOLOGY P2

NEW BATTERY P2

DEPARTMENTAL ACHIEVEMENTS. P3

PUBLICATIONS & UPCOMING EVENTS. P4

About Department

Information Technology Department has been started in 2008, with intake of 60. Our department has 06 well-equipped laboratories. We have established the association “COMPIT” with the department of Computer Engineering in which we conduct various activities like Quiz competition, Power point presentation, Blind C, Poster presentation, LAN gaming etc. The departments have organized various expert lectures and workshops for the overall development of students. This type of activities used to get better result in academic and overall development of students. In last semester we have arranged various workshop for students through which students were able to develop there own projects.

'Wired' Roads Could Power Electric Cars As You Drive

A new wireless power system could help people avoid the inevitable jumbled mess of tangled cords and offer a more efficient way to charge electric vehicles on the go, according to a new study.

Researchers at Stanford University adapted a concept from quantum physics to produce a wireless charger that does something other wireless

chargers cannot: automatically tune the frequency of the radio wave the medium that transfers the power to account for changes in the distance between the charging

pad and the device. In an experiment, the team showed that its system transferred power with 100 percent efficiency up to about 27 inches (70 centimeters).

"The floor of a car is about 20 centimeters [8 inches] away from the road's surface. You could embed the charging pad below the road surface." The problem lies in the design of these wireless power systems. They typically consist of a source, which is the charging pad, and a receiver, which could be a phone or an electric car.



In the source, radio waves of a certain frequency are generated to excite electrons in a coil of wire, called a resonant inductor. The receiver in the phone or electric car also has a resonant inductor made from a coil of wires. When the two inductors are put near each other, the energy gets coupled from the source to the receiver. In the receiver, a component

called a rectifier converts the energy from the radio waves to usable electrical energy for the phone or the car. Finding the optimal frequency for the radio waves depends on the sensitivity of the equipment, the distance between the source and receiver and their orientation to each other

Bidkar Dnyaneshwar(TYIF)

WISHING YOU

A VERY HAPPY

71ST

INDEPENDENCE DAY

Message of HOD

It is our pleasure to present eighth News Letter “TANTRA” of our department to all students. This News Letter is the one of the ways in which we can disseminate the information about department. It covers various technological articles, departmental activities, achievements of students and staff members.

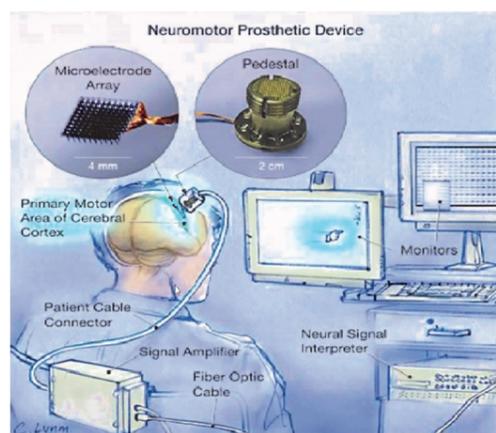
Brain Gate Technology

History of Brain Gate:-

Research on BCI's has been going in for more than 30 years, but from mid 1990's there has been dramatic increase in experimental implants.

Brain gate technology was developed by biotech company cyber kinetics in 2003 in consumption with the department of neuroscience at Brown university.

Brain gate is an electrode chip which can be implemented in the brain. When it is implemented in brain, the electrical signal exchanged by neurons within the brain. Those signals are sent to brain & it executes body movement. All signaling process is handled by special software. The signal sends to computer & then computer is controlled by patient. Whenever a man forgotten about his past due to certain accidental matter or he had lost part of his body, at that time this electrode chip can be implemented on his brain & active man as well. The goal of brain gate program is to develop fast & reliable connection between the brain of severely disabled person & personal computer. The brain gate device can provide paralyzed or motor impaired patients a mode of communication through translation of thoughts into direct computer control.



Tambolkar Durga (SYIF)

New battery could save your cell phone from going in smoke

Lithium-ion (Li-ion) batteries are everywhere these days: laptops, cars, power tools, and cellphones, including Samsung's infamous smoldering Galaxy Note 7. Now, researchers have come up with a new way to prevent these rechargeables from going haywire—a zinc-nickel battery that provides nearly the same electrical jolt, but not the fire risk of Li-ion cells. The new batteries—still in development—could one day power devices as varied as consumer electronics and hybrid cars.

Zinc batteries are surprisingly old-school. Standard non rechargeable alkaline batteries have one electrode of zinc and another of manganese dioxide. They're safe because they contain a nonflammable, water-based electrolyte that helps ferry charges through the battery. Lithium cells instead require a flammable organic electrolyte to prevent side reactions that can kill the batteries. Scientists have come up with all sorts of schemes to stop those cells from catching fire, like adding flame retardants.

They've also searched for ways to make zinc-based batteries rechargeable. In addition to being safer, zinc is far more abundant, and thus cheaper, than lithium. But previous zinc-based rechargeable suffer from a major drawback: Repeated cycles of charging and discharging cause zinc atoms to pile up on one of the electrodes. That causes the growth of "dendrites," tiny zinc spears that can pierce other parts of the battery, causing it to short-circuit and fail. Getting rid of those battery-killing dendrites isn't easy. To make a powerful battery, the negative zinc electrode, or anode, needs a large surface area for the chemical reactions that take place during charging and discharging. Scientists get that large area by making the electrode porous, starting with particles in a fine zinc powder that they press together and secure in place with chemical binders. The trouble is that the zinc in those electrodes winds up unevenly distributed. As a result, the electric field in the battery spikes at particular spots during charging, drawing zinc atoms to deposit at those sites. And once a dendrite is born, the problem only snowballs with each additional cycle.

To get around that issue, Debra Rolison, a chemist at the Naval Research Laboratory in Washington, D.C., led researchers in a project to make a 3D zinc sponge electrode. The scientists started with the same zinc powder, but they mixed it with a blend of water and oil like organic compounds, creating a gray slurry that they could pour into a mold of their choice. They then dried and heated their material, which solidifies into a uniform, porous zinc framework. When wired into a battery, the sponge like anode lacks hot spots thanks to its uniformity and thus prevents dendrites from forming.

Rolison and her colleagues are now doing extensive testing on their zinc rechargeable. In the new study, published today in *Science*, they find that the batteries can complete more than 100 charge and discharge cycles when designed to provide roughly the same amount of energy as Li-ion cells. In a separate design common in hybrid vehicles—in which a small amount of power is discharged and then instantly recharged—the researchers showed that their batteries could cycle up to 50,000 times with no dendrite formation. "It's an important development with tremendous potential," says Hector Abruna, a chemist at Cornell University who was not involved in the work. Not only would future zinc-based rechargeable be safer than their lithium counterparts, but the cheap cost of zinc could drive its use in many applications. To speed up that process, Rolison and her colleagues have licensed their technology to En Zinc Inc., a startup in San Anselmo, California, that is developing batteries for hybrid cars, electric bikes, and wearable electronics. If the company succeeds, zinc rechargeable may soon set the battery world on fire—just not themselves.

Deshmukh Samruddhi (TYIF)

DEPARTMENTAL RESULT FOR A.Y. 2017-18

SR. NO.	NAME OF STUDENT	MARKS %	CLASS
1	MS. PATIL UJJWALA UTTAM	93.88 %	1st Year
2	MR.GHOGARE SHIVRAJ HANUMANT	87.25 %	1st Year
3	MR. GAIKWAD PANKAJ SANJAY	86.63%	1st Year
1	MS. TAUR SAYALI SHUKRACHARYA	92.61 %	2nd Year
2	MS. DESHMUKH SAMRUDHI SANJAYRAO	90.02 %	2nd Year
3	MR. BIDKAR DNYANESHWAR B	82.90%	2nd Year
1	MS. GAIKWAD POOJA BALASAHEB	87.88 %	3rd Year
2	MS. VIBHUTE POOJA HIMMAT	86.13 %	3rd Year
3	MS. MISAL SHWETA LAXMAN	83.88 %	3rd Year

FACULTY

ME Completed:

Ms. B.S. Kasab

ME Appeared:

Mr. A. S. Bhise

STUDENT WITH MORE THAN 90 MARKS FOR A.Y. 2017-18

SR. No.	NAME OF STUDENT	MARKS	SUBJECT	CLASS
1	MS. PATIL UJJWALA UTTAM	100	APPLIED SCIENCE	1st Year
2	MR. GAIKWAD PANKAJ SANJAY	99	ENGINEERING MATHEMATICS	1st Year
3	MS. PATIL UJJWALA UTTAM	96	ENGINEERING MATHEMATICS	1st Year
4	MR. VARPE ABHISHEK BALAJI	91	ENGINEERING MATHEMATICS	1st Year
5	MS. TAUR SAYALI SHUKRACHARYA	100	COMPUTER HARDWARE AND MAINTENANCE	2nd Year
6	MS. DESHMUKH SAMRUDHI SANJAYRAO	99	COMPUTER HARDWARE AND MAINTENANCE	2nd Year
7	MS. GAWALI PRIYANKA SANTOSH	98	COMPUTER HARDWARE AND MAINTENANCE	2nd Year
8	MR. BIDKAR DNYANESHWAR B	97	COMPUTER HARDWARE AND MAINTENANCE	2nd Year
9	MS.SALUNKHE GAURI UDAYSINH	92	COMPUTER HARDWARE AND MAINTENANCE	2nd Year
10	MS. TAUR SAYALI SHUKRACHARYA	92	MICROPROCESSOR AND PROGRAMMING	2nd Year