NEWS LETTER
2017-18

"X-Press 2K17"

ACET

Department of Electronics & Telecommunication

ISSUE - 7

ANJUMAN COLLEGE OF ENGINEERING & TECHNOLOGY

CONTENTS

FROM HOD'S DESK

Mohommad Nasiruddin
ASSOCIATE PROFESSOR & HOD

The department was established in the year 1999 with an undergraduate programme and the post graduate programme in Electronics & Communication Engineering added in the year 2014. The department faculty works with excellent team spirit in different technical areas like Communication, Signal Processing, VLSI, Embedded System, Wireless Sensor Network which leads to key research publications and consultancy. Department takes pride in having sophisticated equipments, fully equipped advanced laboratories and updated computer labs with internet facility. Different activities are regularly conducted under the banner of student forum "X-stream" in view of inculcating team spirit and enhancing self-confidence of students.

Our mission is to provide quality education which not only provides information on various facets of Electronics & Telecommunication Engineering but insist to transform the information into knowledge through theoretical and practical training to our students. We are committed to the mission of making our students as trained professionals, who will be capable to put the generated knowledge into professional use. The department strives to provide a conducive environment for the students to develop analytical and practical skills and apply them to real world problems. To motivate the students, department organizes regular training for software as well as hardware and besides this, regularly conduct Workshops, National & International Conferences.

We are committed to the mission of making our students as trained professionals

Vision

To become excellent in Electronics & Telecommunication Engineering with moral & social ethics and to be globally competent.

Mission

- To create conducive academic culture for learning and identifying career goals in th field of Electronics & Telecommunication Engineering.
- To impart research oriented technical education in Electronics & Telecommunication Engineering.
- To impart necessary skills and promote professional practice to enhance placement and entrepreneurship in Electronics and Telecommunication contributing to the socio-economic growth.
- To inculcate core values and ethics.

Message from EDITOR

M. Tafhim Khan
Assistant Professor
ETC Dept

I am very pleased to present the New edition of our Department's Newsletter. An opportunity for the staff and students to showcase their talents related to events, activities and academic achievements from the department. You can see the contributions from students as well as faculties. I hope everyone will find this newsletter exciting, interesting and will encourage many more students to use it as a platform to express their creativity.

I am thankful to our Principal Dr. Sajid Anwar and Head of the Department Prof. M. Nasiruddin for believing in me and giving me this opportunity.

ACHIEVEMENTS

Faculty Achievement

Dr. Syed Mohamad Ali was awarded PhD by Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, recently. His topic of research was "Development of the Neural Network Based System for diagnosis of speech disorders". He gives the credit of his success to his guide "Dr. P. T. Karule", ACET Colleagues & Dr. Sajid Anwar, Principal, ACET.

Dr. Ahmed Sajjad Khan is Professor in department of Electronics and Telecommunication Engineering of Anjuman College of Engineering and Technology has been awarded PhD in Information and Communication Engineering by Anna University, Chennai. The subject of his research was, "Cellular Automata Modelling and Processing of Speech Signals". He carried out the research under the guidance of Dr. E. G. Rajan, President, Pentagram Research Centre, Hyderabad and Prof. Dr. D. Sridharan, Additional Director, Centre for Faculty Development, Anna University, Chennai.

Students Achievements

L to R : Dr. Sajid Anwar, Principal, Miss Bushranaz Akhtar, Miss Tanvi Khan & Prof. Mohommad Nasiruddin, HoD

Miss Bushra Naaz Akhtar was awarded with two gold medals for successfully securing first position in 7th & 8th Semester and **Miss Tanvi Khan** got one gold medal for securing 100% marks in Mathematics-I in the 105th convocation of RTM Nagpur University, Nagpur.

We heartily congratulate Miss Vedashree Khanke for getting placed in BYJUS with a package of 9 Lacs per Anum

UNIVERSITY Rank Holders

Exam	Name of Student	Sem and Sec	SGPA	University Rank
BE - VIII S-2017	Bushranaaz Parvez Akhtar	VIII - B	9.47	1st
	Sana Kausar Ansari	VIII - B	8.91	7th
	Shahana Sadaf Ziauddin	VIII - A	8.74	15th
BE - VII W-2017	Aqeeba Hadi Sheikh	VII - B	8.82	12th
	Anchal Ravi Borkar	VII - B	8.82	12th
	Nidhi Ravindra Naik	VII - A	8.64	17th
	Gayatri Ishwar Kinkar	VII - A	8.61	18th
	Aniket Pushparaj Paunikar	VII - B	8.61	18th
BE - VI S-2017	Priyanka Devraj Yadav	VI-B	8.82	11th
	Gayatri Ishwar Kinkar	VI-A	8.54	19th
	Yogeshwari S. Paidlewar	VI-A	8.43	-
BE - V W-2017	Vaishnavi Girish Joglekar	V-B	9.15	2nd
	Sunidhi Suresh Bopte	V-B	8.93	6th
	Faraaz Ansar Siddiqui	V-B	8.78	7th
	Masiha Firdous Sheikh	V-B	8.52	12th
BE - IV S-2017	Vaishnavi Girish Joglekar	IV-B	9.21	1st
	Sunidhi Suresh Bopte	IV-B	8.82	7th
	Faraaz Ansar Siddiqui	IV-B	8.71	10th
BE - III W-2017	Sundus Abdul Rahman	III-A	8.7	8th
	Dimpal Rajendra Deogade	III-A	8.3	18th
	Aiman Parvez	III-A	8.22	20th
M.Tech. - IV S-2017	Arshi Anjum	M.Tech. - IV	78.40%	Not Available
	Anam Muhiyyuddin Quadri	M.Tech. - IV	78.30%	Not Available
	Sana Sajid Ali	M.Tech. - IV	77.00%	Not Available
M.Tech. - III W-2017	Sonali Vasant Bhujade	M.Tech. - III	9.25	2nd
	Akanksha C. Thawale	M.Tech. - III	9	3rd
	Anam Khan	M.Tech. - III	8.75	4th
	Umesh Natthuji Parve	M.Tech. - III	8.75	4th
	Amreen Shafiqeuddin Saifer	M.Tech. - III	8.5	5th
	Roshni Ashok Jeswani	M.Tech. - III	8.5	5th
M.Tech. - II S-2017	Akanksha C. Thawale	M.Tech. - II	8.36	Not Available
	Amreen Shafiqeuddin Saifer	M.Tech. - II	8.36	Not Available
	Anam Khan	M.Tech. - II	8.18	Not available
	Roshni Ashok Jeswani	M.Tech. - II	8.18	Not Available
M.Tech. - I W-2017	Fule Shradha Chandrashekhar	M.Tech. - I	9.45	1st
	Sana Zeba Siraj Bakshi	M.Tech. - I	9.09	6th
	Naseem Zahera M. Shafeeque	M.Tech. - I	9.09	6th
	Sadiya Fahimbeg Mirza	M.Tech. - I	8.18	20th
	Zahwa Hasan Mirza	M.Tech. - I	8.18	20th
	Shahrukh Abdul Gani Sheikh	M.Tech. - I	8.18	20th

M.Tech. Toppers


Anam Saify Khan


Amreen Saifer


Sadiya Mirza


Zehara Naseem


Sana Zeba Bakshi


Roshni Jeswani


Umesh Parve


Shahrukh Abdul Gani Sheikh


Zahwa Mirza


Shradha Fule


Akanksha Thawale

6th & 7th Semester Toppers


Anchal Borkar


Aniket Paunikar


Gayatri Kinkar


Nidhi Naik


Yogeshwari Paidlewar


Aqeeba Sheikh


Priyanka Yadav

4th & 5th Semester Toppers


Vaishnavi Joglekar


Sunidhi Bopte


Faraaz Siddiqui


Masiha Firdous

3rd Semester Toppers


Sundus Ab Rahman


Aiman Parvez

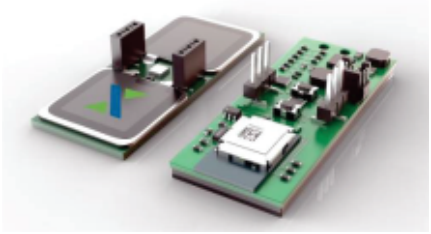

Dimple Deogade

Technical Articles by Students

POTENTIAL BREAKTHROUGHS IN **BATTERY TECHNOLOGY**

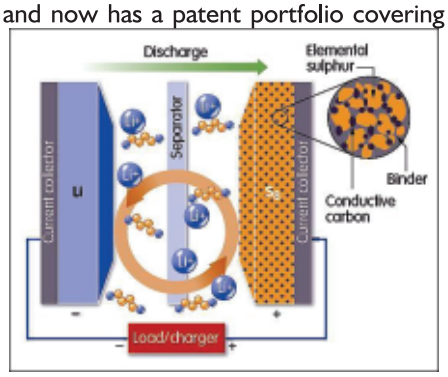
Prerna Kacchawaha
8th Sem A
ETC Department

The pressure on those developing new battery chemistries is increasing as consumers demand the ability to use their electronic devices for longer between charges. And it seems that researchers are responding with a range of potential solutions, not only based on lithium, but also exploring other elements. Beyond that, solid state electrolytes are beginning to show promise. There are good reasons for all this work. Apart from consumers wanting their devices to last longer between charges, manufacturers are looking for smaller batteries so they can develop smaller products. Meanwhile, at the other end of the scale, automotive manufacturers want the same range from smaller batteries in future electric cars or more miles from the same sized batteries as today. One man who knows a lot about battery chemistries is Dr Yoshio Nishi, previously director of materials for Sony Research. He told a seminar in 2014 that there are 110million possible combinations of materials that could be used to create a battery, but only 30 of these have been put to practical use. So what are the challenges when it comes to creating a battery that stores more energy per unit volume. Graeme Purdy is chief executive of Ilika, which has been developing new materials for energy and electronics applications for more than a decade. It has recently developed an innovative solid-state battery technology for a range of applications and is licensing the IP for use in a variety of end user markets. "There are a number of potential battery chemistries on which people have been working over the years," he pointed out. "There's a wide range of cathode and anode materials which give different performances and which can be optimized for applications such as safety and capacity. And the voltage at which these cells operate can be tuned, as can the cycle life. "But it's the next generation of battery technology on which Purdy and Ilika have their eyes focused. "These technologies may well be based on lithium," he continued, "It has a number of characteristics which make it interesting, but it functions in a different way, depending upon what it is used with."



Ilika has recently launched the Stereax P180 solid state battery, targeted at IoT applications and shown above in a demonstrator

Two particular approaches hold promise, according to Purdy – lithium-sulphur and lithium-air. "Li-sulphur is an area which holds a lot of interest because the technology has good gravimetric energy capacity – it has the potential to store more energy per unit weight. That could be of interest in military applications, for example, where lighter batteries are seen to be important." Ilika is taking part in a three-year project led by Johnson Matthey to develop protected anodes for lithium sulphur batteries. Other partners include Williams Grand Prix Engineering, the University of Oxford and the University of Warwick. This project will develop a protected lithium anode, using Ilika's high-throughput materials development technique, to discover new electrolyte compositions and to fabricate a free-standing, lithium-containing protected anode/separator for integration into pouch cells. Purdy noted: "The partners have the 'know how' to design and develop new battery components, then take them to electrode fabrication and pouch cell manufacture and evaluation." But the Johnson Matthey collaboration isn't the only project working on LiS; Oxford shire based Oxis Energy continues to push the technology's performance. Oxis has been working on Li-S technology since 2004 and now has a patent portfolio covering electrolyte systems for Li-S cells, methods of Li-S cell construction and positive and negative electrodes. Dr David Ainsworth, the company's chief technology officer, said: "About three years ago, we raised a large funding round which provided us with the money to expand our research and scale up activities."

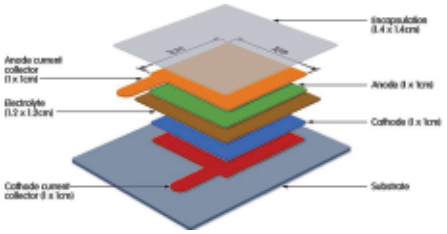


Oxis is pursuing two cell configurations. "The difference is the electrolyte," Dr Ainsworth highlighted. "One is dense and stable, the other is lighter, with high energy density. With the stable electrolyte, we're developing cells for applications such as electric vehicles and e-scooters, as well as static energy storage and other apps with high power requirements.

How Oxis' lithium-sulphur cell works

"In parallel, we're looking at high gravimetric energy density," he continued. "We aimed to get to 400Whr/kg and demonstrated cells last year delivering 11Ahr from a 400Whr/kg source. These cells are aimed at military and aerospace applications, where the life expectancy is probably 100 charge / discharge cycles. However, we are looking to improve cycle life and to achieve 500Whr/kg by 2020." One of the ways in which Oxis hopes to boost battery longevity is through coating the lithium anode using polymer or ceramic films. "Lithium is reactive to species in the electrolyte," Dr Ainsworth explained. "This results in degradation; the anode being eaten away and the cell failing."

Meanwhile, Oxis continues to develop the stable electrolyte. Demonstration cells are delivering 40Ahr from a 220Whr/kg source, but Dr Ainsworth said there is still more energy to come. "Maybe we can reach 250Whr/kg," he said.



The other technology which Purdy finds attractive is lithium-air. "This has the attraction of the highest theoretical energy per weight because the parasitic elements have been removed. Effectively, this is all about oxidising lithium. While it's a great way to release energy, the problem is the process needs to be reversible if you are to create a rechargeable battery." And that's the problem – lithium oxidation is pretty much irreversible, so it becomes a challenge to create a battery that can be used repeatedly. "There's a lot of work going on to see if this problem can be solved," Purdy pointed out. But work is taking place. In 2015, researchers at Cambridge University reported a working laboratory demonstrator of what they called the 'ultimate battery'. The lithiumoxygen based battery was said to have an energy density 10 times that of Li-ion, to be more than 90% efficient and to have been recharged more than 2000 times. The demonstrator used a highly porous graphene electrode and featured additives that made the chemical reactions in the battery more stable and efficient. Professor Clare

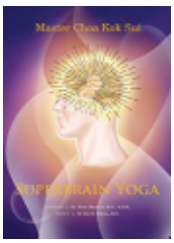
Grey of Cambridge's Department of Chemistry noted at the time: "We haven't solved all the problems inherent to this chemistry, but our results show routes forward towards a practical device." In Purdy's opinion, changing the anode material is another fruitful avenue to explore. "Using silicon, rather than carbon, can deliver performance improvements," he said, "but it doesn't always make a difference because the cathode is often the limiting factor in battery designs." While silicon can work with many more lithium atoms than carbon, the approach faces a number of issues, including volume changes during the charge/discharge process. Damage from this can see the battery lose capacity quickly. One company continuing to push silicon anodes is Nexeon, which has been exploring the technology since 2004. Its patented silicon structures are said overcome poor cycle life by mitigating the volume expansion issue. It says its structured silicon anode materials deliver extended cycle life without degradation.

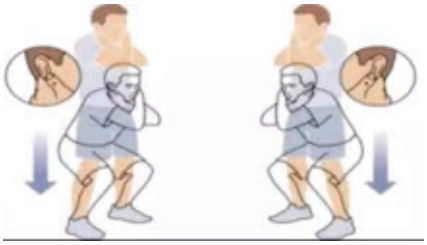
Last year, Nexeon raised a further £30million from investors. CEO Dr Scott Brown observed: "It is widely accepted that silicon materials are the key to improved energy densities in Li-ion batteries and that the winning technology will be both high performance and low cost. This investment will allow us to progress our technology, our low-cost manufacturing capability and our commercial partnerships." t is used with."

Beneficial effects of Super brain yoga on short-term memory and selective attention of students

Krishna Rajendra Shahu
8th Sem A
ETC Department

Superbrain Yoga is a simple squatting technique that uses subtle energy to improve cognitive functioning of individuals. The present study aims to find the effectiveness of superbrain yoga on short-term memory and selective attention of students. Pre test-post test design was used in the study. The study was conducted on 91 students from a residential school in Mysore district with a mean age of 11.9 years. The Knox cube test was used to evaluate the short-term memory, and digit cancellation test was administered to assess the selective attention of students. Pre-scores and post-scores were recorded, and energy enhancement was measured before and after Superbrain Yoga practice. Scores were analysed using repeated measure ANOVA and chi-square test. A mean gain of 1.18 in score with significance ($F = 1.884$, $p < .001$) in short-term memory and a mean gain of 3.31 with significance ($F = 4.426$, $p < .001$) in selective attention after one month of Super brain Yoga was observed. In between pre- and post-session an increase of, 34.27 % in left hemisphere and 28.71 % in right hemisphere was measured in pranic energy levels. Super brain Yoga has been found to be effective in improving short term memory and selective attention among students.





Operational definition

Short-term memory: In the knox cube test, short term memory span is measured by the extent of correct sequence of tapping the blocks by the participant. A higher score on the test can be considered as a better short-term memory span for the participant16

Selective attention: On the digit cancellation test, selective attention is measured by the number of correct specified digits that have been cancelled by the participant. A higher score on the test can be indicative of a better selective attention for the participant17.

Tools

Socio-demographic data: This was developed to document participants' basic information such as name, gender, age and level of education.

Knox cube test: The cube imitation test was developed by Knox as a nonverbal test of intelligence16, is considered as a highly standardized test and has been used in many international studies. It is also used as a measure of the short-term memory of individuals above the age of 5 yrs.

Digit cancellation test: The digit cancellation test has been used to measure selective attention of an individual. The present study administered digit cancellation test using three trials and then averaging the score of the three trials. The desired response is obtained by scanning the arrays of digits and crossing out the notified digits. The performance of an individual depends on his/her vigilance, arousal, and motivational.

Buttons, who needs 'em?

Yogeshwar Paidlewar
8th Sem A
ETC Department

A new proof-of-concept technology from Carnegie Mellon University turns everyday objects into touch interfaces with an array of electrodes. Walls, guitars, toys and steering wheels come alive with touch sensitivity in their video, and it seems that the possibilities are pretty much endless. What could be next? Grocery store aisles? Whole buildings? Other people? Cell phones? The design is called Electrick, and it comes from Carnegie Mellon's Future Interfaces Group and takes advantage of the same principle that your smartphone screen. Because our skin is conductive, when we touch a surface with electricity running through it we alter the electric field in a predictable way. By coating objects with electrically conductive materials and surrounding them with electrodes, the team can triangulate the position of a finger based on fluctuations in the field. Combined with a microprocessor, they can train their program to translate swipes and taps into commands. They experimented with a few different application methods. Vacuum forming works for simple shapes, while a spray-on version coats even irregular objects, such as a guitar or a miniature Yoda head. Materials can also be custom moulded or 3-D printed, and it appears that Electrick even works with Play-doh and jello.

Some of the more practical applications include prototyping controller designs and modifying laptops and surfaces to run programs with a single touch, but the sky is really the limit here. Turn on your lights with the refrigerator. Play Halo with your coffee table. Change the channel with your cat (maybe not). You can imagine a future where any surface is a potential control device — and the attendant embarrassment when sitting down in the wrong place causes the blender to erupt. Their system is low-cost and widely applicable, they say, and the only downside at the moment is that the presence of an electromagnetic field from other powered objects nearby can interfere with the accuracy of the system. They are currently working on ways to get around that.

Why Blockchain is here to stay
(and Bitcoin might not be)

Rahul kharapkar
4th Sem
ETC Department

If you're not already a cryptocurrency investor, you've probably at least heard a thing or two about blockchain, Bitcoin, or both.

These are indeed technologies to be taken seriously, even as they're written off by traditionalists like Warren Buffet and Jamie dimon. To recap, **Bitcoin** (BTC) is the first decentralized cryptocurrency (created in 2009) and currently the largest of more than 1,000 known cryptocurrencies. It has a market cap of about $140B USD as of the beginning of February, 2018. **Blockchain**, on the other hand, is the technology that Bitcoin and many (but not all) of the other newer cryptocurrencies vying for a piece of the crypto-craze are built on.

Blockchain works by recording peer-to-peer transactions onto "blocks" which are subsequently written permanently onto an open and distributed ledger (the blockchain) through a consensus-based mining process. The blockchain ledger, by its open nature, is verifiable by anyone, and is resistant to modification because it's distributed and encrypted.

So Why Blockchain is here to stay (and Bitcoin might not be)

In an automobile analogy (credit: Jason Schenker), you might think of Bitcoin as the first car to use an internal combustion engine and blockchain as the internal combustion engine technology itself.

While Bitcoin is the first and currently largest cryptocurrency to use blockchain technology and has excellent people behind it, many new blockchain projects are emerging that are also intriguing from a technology perspective. And yes, even Kodak (the film company) entered the blockchain fray in 2018. **Who could be next ?** Tech giants like Microsoft and Oracle are now incorporating blockchain into their product and service portfolios, though neither has stated any intention of creating its own cryptocurrency just yet.

While Bitcoin's future prospects are anyone's guess, blockchain, on the other hand, is almost certain to gain mainstream relevance in the future. A foundational approach to building decentralized systems, blockchain offers significant gains for just about every business across just about every industry.

The only significant question mark is just how long it will take for this promising technology to be widely implemented.

"Blockchain technology is interesting to many of the businesses we talk to because it can unlock tremendous operational improvements in their existing business," explains Harry Lee, CEO of Citrus Bits, a Los Angeles and San Francisco-based mobile app agency that offers blockchain development services.

Departmental Events

ACET

"ROBORACE"

"EXTREME BUBBLE BATTLE"

"ONE DAY WORKSHOP ON
TIPS & TECHNIQUES TO KNOW ELECTRONICS"

NATIONAL LEVEL EVENT "TECHSTACY"

NATIONAL LEVEL EVENT "**RAGNAROCK**"

X-STREAM FORUM INSTALLATION & "**SYMPOSIUM 2K17**"

TECHSAGA 2K18 INAUGURATION

Teaching & Non-Teaching Staff

Final Year Sec A 2017-18 Batch

Final Year Sec B 2017-18 Batch

Final Year M-Tech Batch

ACET

Department Placements
2017-18 Batch

Company	Name of Students	Package lacs / Anum
BYJU	Vedashree Khanke	9
Amazon	Jovita Bonifas	2.4
	Vedashree Khanke	2.4
	Shabbir Bohra	2.4
Universal Education	Srushti Tambe	2.4
	Huzefa Sanawadwala	2.4
SGS Technical Services	Priyadarshini Das	1.8
	Saquib Ali	1.8
	Mohd. Asif	1.5
	Shoubhik Das	1.5
CMS IT Services Pvt. Ltd.	Aafsha Ruby Khan	1.5
	Mirza Zubair Baig	1.5
	Shoeb Sheikh	1.5
	Shabbir Bohra	1.5
Gracenet Edunet	Jovita Bonifas	1.5
	Shoubhik Das	1.5
	Sankaet Baghel	1.5
Vowel Web Solutions	Priyanka Yadav	1.5
	Ahmad Saqib Iqbal	1.5
	Uzma Zabeen Shaikh	1.5
	Shabbir Bohra	1.5
	Priyadarshini Das	1.5
THINKSYNQ	Kalyani Vishwanath Jog	1.4
	Nida Shariya	1.4
	Anchal Borkar	1.4
	Shoubhik Das	1.4
	Anshita Jaiswal	1.4
	Shraddha Bawangade	1.4
	Vedashree Khanke	1.4
	Punam S Mhaiske	1.4
	Yogeshwari Paidlewar	1.4
	Farha Naaz Siddique	1.4
	Srushti Tambe	1.4
	Nidhi R Naik	1.4