



NEXUS



Vol.2-Edition1

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ABOUT ECE DEPARTMENT

The Department of Electronics and Communication Engineering lays emphasis on Teaching and Research activities in diversified areas there by, molding the students to be Analytical Thinkers, Skilled Communicators and Ethical Leaders.



Our Vision

To excel globally in technical education through research, innovation and consulting in the field of Electronics and Communication Engineering and thus contribute to the larger good of the society.

Our Mission

M1	Establish a unique learning environment to enable the students to face the ever-emerging challenges in the field of Electronics and Communication Engineering.
M2	To equip the students with a broad intellectual spectrum in order to prepare them for diverse and competitive career path.
M3	To increase the visibility of academic programs globally, attract and nurture talent at all levels.
M4	To provide practical oriented education and foster research tie-up with national/international education institute, research bodies and industry to promote the intellectual and research pursuits of students and faculty
M5	Provide ethical and value-based education by promoting activities addressing the societal needs

PEOs

PEO1	To provide comprehensive knowledge of electronics and communication engineering and related subjects for professional development, advanced education and develop entrepreneur skills.
PEO2	Be receptive to new technologies and attain professional competence through advanced degrees, professional societies, publications and other professional activities.
PEO3	To develop the ability to demonstrate technical competence in the field of electronics and communication engineering by teaching new and advance courses and provide an environment for technology related research.
PEO4	To impart value-based knowledge and enable the students to practice profession with ethics and a sense of social responsibility by making them more aware of contemporary issues



From Director's Desk



“Education is the most Powerful weapon which you can use to change the world” - Nelson Mandela

It gives me great pleasure to give my best wishes to Nexus, a newsletter from Department of Electronics & Communication Engineering of PIET. The students and faculties of department are always proactive in taking initiatives in technical, cultural and social events. I hope that this newsletter will serve the purpose of reflecting all activities of department and it will inspire others to do their best.

Wishing you all the best.
Prof.(Dr.) K.K. Paliwal
Director



From HOD's Desk

“Education is our passport to the future , for tomorrow belongs to the people who prepare it for today”
-Malcolm X

It is a matter of great pleasure to know that the 9th issue of the department newsletter is ready. The Newsletter will serve as an interface between the Institute and outside world. It provides information about the academic & co-curricular activities organized in the department held during recent past .

I am happy to note that various initiatives are taken by the faculty to disseminate knowledge by organizing conferences, training programs and workshops.



Wishing you all the best.
Sandeep Sharma
HOD ECE Department.



Editor's Note

“ Most writers regard the truth as their most valuable possession, and therefore are most economical in its use.”

– Mark Twain

Once more, it is with immense pleasure that we were given the opportunity to work on the 9th Edition of the department Newsletter. As we all know, a newsletter mirrors a college-Its vision and mission. It also highlights events, activities and academic prowess and achievements. In this edition, we have tried to capture last few months excitement and activities. We do hope that the newsletter encourages many more including students to use it as a platform to express their creativity. We sincerely hope that this edition makes for an interesting read.

Please feel free to offer any suggestions for improvement

Sincerely

*Ms. Ritu Vats & Dr. Ruchira Aneja
Assistant Professor ECE*



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Faculty Development Program (FDP)

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Affiliated to Kurukshetra University, Kurukshetra

WORKSHOP ON MATLAB SIMULATION AND APPLICATION

organised by
ELECTRONICS AND COMMUNICATION DEPT.
PIET, SAMALKHA

PIET is committed to provide best and quality professionals to the global market. Therefore, besides academics PIET has taken a step to improve the Technical Skill set of faculty members and update their technical knowledge by FDP Program on Matlab in collaboration with IIT Chennai. Prof. Vikram Expert from IIT Chennai conducted the program and guided the faculty members about technical and practical use of Matlab as simulation tool in the field of advance research. He delivered Key Learning Points Include: new toolbox & features introduced in latest upcoming versions of Matlab. That will be very helpful in advance research and field of simulation.

The workshop was coordinated under the guidance of Mr. Sandeep Sharma, (HOD, ECE).

Dr. K.K.Paliwal (Director, PIET) congratulated the coordinating team for organizing such kind of informative program and also motivated the staff members for the skill enhancement in future technologies.



Faculty Development Program (FDP)





Technical Quiz (Electro-Champ)

PIET always works for getting perfection. For fulfilling its objectives Electronics and communication Engineering Department of PIET structured a Technical Quiz "Electo-Champs" which is coordinated by Mr. Arun Rana (AP ECE) on 17th Feb, 2017. Five teams were constructed for the quiz. Details of participating teams are as follows:-

Team-A	Team-B	Team-C	Team-D	Team-E
Hitesh (2815283)	Harshit (2815285)	Heena (2815289)	Jatin (2815204)	Neha (2815204)
Sidharth (2815292)	Shresth (2815292)	Neha (2815286)	Rajnikant (2815280)	Neha (2815255)
Arman (2815288)	Raunak (2815282)	Madhu (2815258)	Abhishek (2815291)	Komal (2815278)





Technical Quiz



First prize of this Quiz went to Team–D and Second Prize to Team-C. Director sir handover certificate and memento to the students.

Dr (Prof.) K. K Paliwal – Director ,PIET congratulate the coordinator staff and students and appreciate for their effort and dedication.



Campus Placements

The following students outshone the name of the department by getting placed in prestigious companies that visited the campus of PIET for recruitment of B.Tech students.

Sr.No	Roll No	Student Name	Company Name	Package (In Laks)
1	2813222	Kunal Juneja	Capgemini	3.5
2	2813256	Abhijeet Mahajan	Capgemini	3.5
3	2813210	Chavi Sharma	Artech, VIVO	3.5
4	2813231	Rahul KaramKar	Just Dial / Hettech	3.0/3.25
5	2814834	Mukesh	VIVO	3.5





Technical Article

“Paper Battery”-New Generation Power Bank

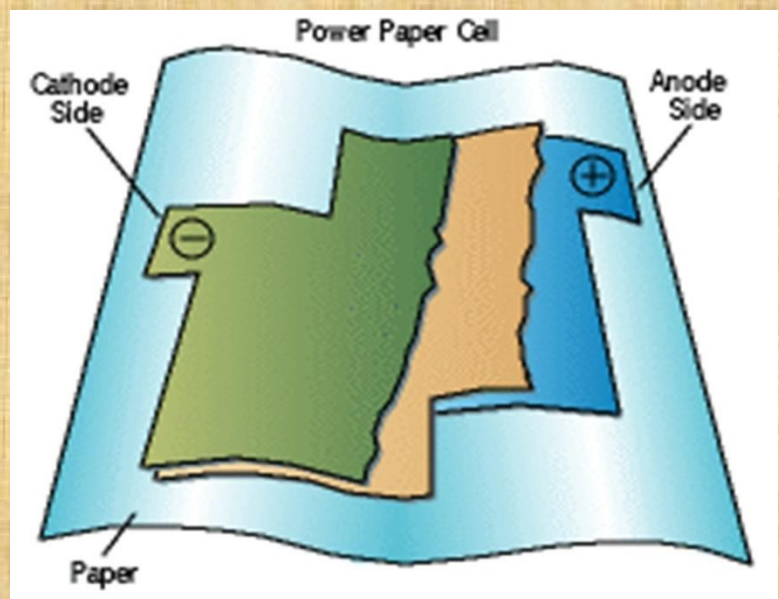
Introduction:- A paper battery acts as both a high energy battery and super capacitor, combining two components that are separate in traditional electronics. This technology can be greatly utilized by medical devices.

Principal :-The battery produces electricity in the same way as the conventional lithium-ion batteries, but all the components have been incorporated into a lightweight, flexible sheet of paper. The devices are formed by combining cellulose with an infusion of aligned carbon nanotubes. The electrolyte and the ions that carry the charge can be varied depending the use of the battery. A conventional Li-ion battery can be incorporated in cellulose-nanotube composite as shown in the next slide.



Construction:-

1. A zinc and manganese dioxide based cathode and anode are fabricated from proprietary links.
2. Standard silkscreen printing presses are used to print the batteries onto paper and other substrates.
3. Power Paper batteries are integrated in to production and assembly processes of thin electronic devices.
4. The paper is infused with aligned carbon nano tubes, which gives the device its black color.





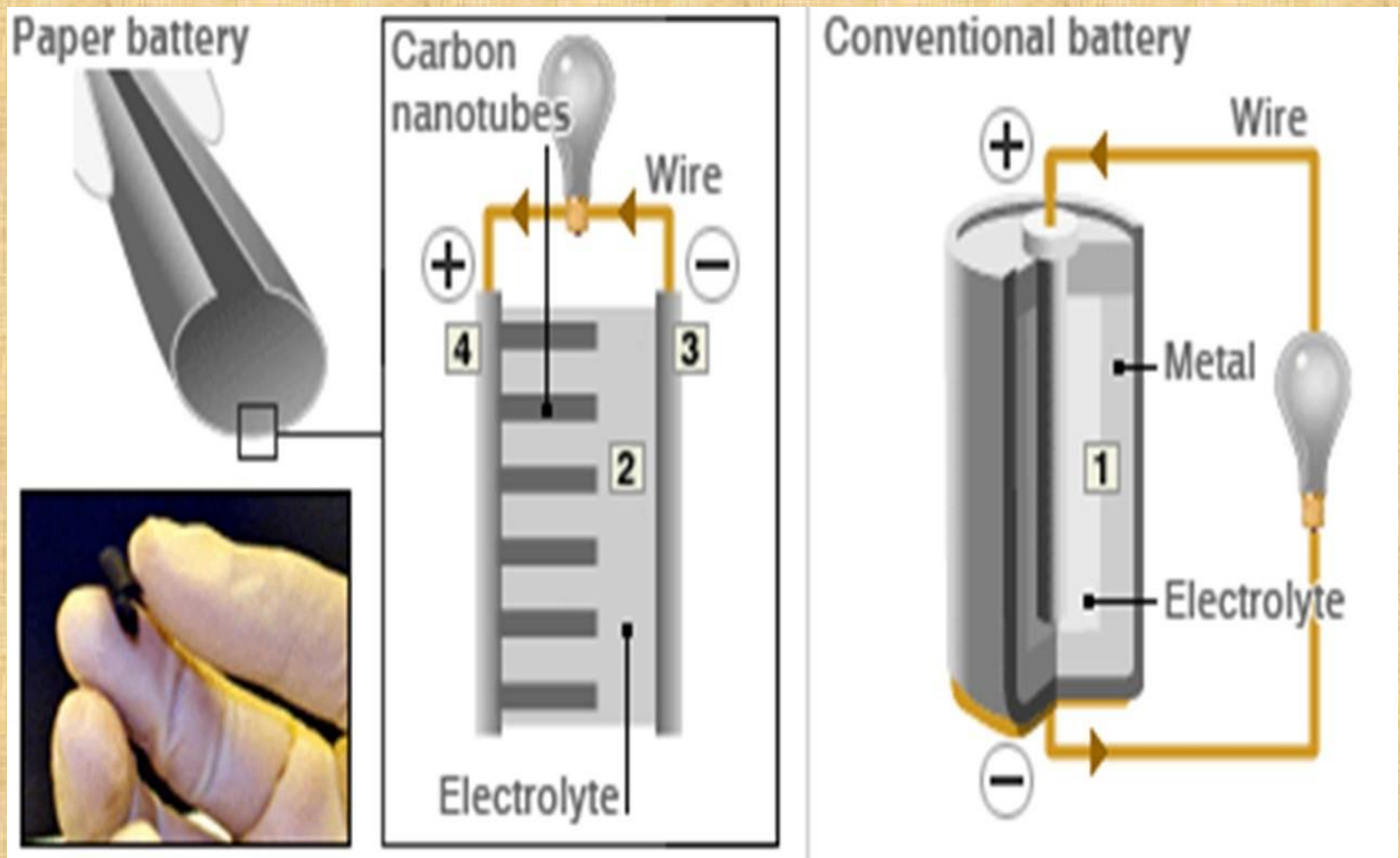
Technical Article

Cont...

5. The tiny carbon filaments or nano tubes substitute for the electrode used in conventional battery.
6. Use an ionic liquid solution as an electrolyte The two components which conduct electricity.
7. They use the cellulose or paper as a separator the third essential component of battery.

Working :- Electrons must flow from the negative to the positive terminal for the chemical reaction to continue. Ionic liquid, essentially a liquid salt, is used as the battery electrolyte.

The organic radical materials inside the battery are in an “electrolyte-permeated gel state”, which is about halfway between a solid and a liquid. This helps ions to smooth move, reducing





Technical Article

Cont...

Limitations :-

- 1) Paper batteries have low strength they can be 'torn' easily.
- 2) The techniques and the set-ups used in the production of Carbon Nano tubes are very expensive and very less efficient.

Advantages :-

- 1) Used as both battery and capacitor.
- 2) It is flexible
- 3) It is ultra thin energy storage device.
- 4) Long lasting.
- 5) Non toxic.
- 6) Steady power production

Disadvantages :-

- 1) Prone to tearing.
- 2) Nanotubes made from carbon are expensive due to use of procedures like electrolysis and laser ablation
- 3) Should not be inhaled, as they can damage lungs

Conclusion :-

A paper battery is a paper like device formed by the combination of carbon nanotubes and a conventional sheet of cellulose-based paper which act as a flexible ultra-thin energy storage and energy production device. As this technology is adapted it will prove to be extremely useful and could even save not only cost but lives also.

- Ritu Vats (A.P. ECE Dept.)



Quizomania

Q1. which decade was the American Institute of Electrical Engineers (AIEE) founded?

Answer: 1880s

Q2. In which decade with the first transatlantic radio broadcast occur?

Answer: 1900s

Q3. .MOV' extension refers usually to what kind of file?

Answer: Animation/Movie files

Q4. After the first photons of light are produced, which process is responsible for amplification of the light?

Answer: Stimulated emission

Q5. Blue is what number on the resistor color code?

Answer: Number 6

Q6. What is an FET?

Answer: Field Effect Transistor

Q7. Communication that involves computers, establishing a link through the telephone system is called

Answer: Telecommunications