PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Approved by A.I.C.T.E & Affiliated to Kurukshetra University, Kurukshetra

NEXUS -VII

ECE News & Events **Vol.1-Edition7**

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About ECE Dept.

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

"Ideas are easy, Implementation is hard."
*- **Guy Kawasaki***

Prof.(Dr.) K.K.
Paliwal
(Director)

It is a matter of pleasure to speak with all of you through this newsletter. We all can take pride from the fact that each one of us has contributed to the present day glory and growth of our college. And we get comfort from the knowledge that the future of our institution is in safe hands. The growth of our college has been in leaps and bounds. we can expect the continuous growth in the name and fame of our college. Signing off in the hope of meeting you all in the near future.

WISHING YOU GOOD LUCK !

From HOD's DESK

"Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time." **- Thomas A. Edison**

I am very pleased to present you the newsletter of Electronics and Communication Engineering Department. Within these pages you will find much news related to diverse activities from the whole Faculty members and students. You can see the contributions from Faculties and students. I hope everyone will find this newsletter exciting and interesting.

Wishing you
all the best !!!

Prof. Swati Gupta
(HOD ECE)

Please feel free to drop in your suggestions to swatigupta.ece@piet.co.in

EDITOR's NOTE

It is a matter of pride as well as pleasure to present before our readers next issue of Department Newsletter. We feel honored for the faith reposed in us for per- forming the role of editors of Department Newsletter. We have put whole-hearted endeavors to give a complete and kaleidoscopic view of laudable achievements of ECE department. Through further issues of Nexus, we do hope that we will come up to the expectations of our readers.

"There are far, far better things ahead than any we leave behind." ***- C.S. Lewis***

ANUPAMA GUPTA
(A.P. , ECE DEPT.)

NAVJOT KAUR
(A.P. , ECE DEPT.)

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Technical Article :

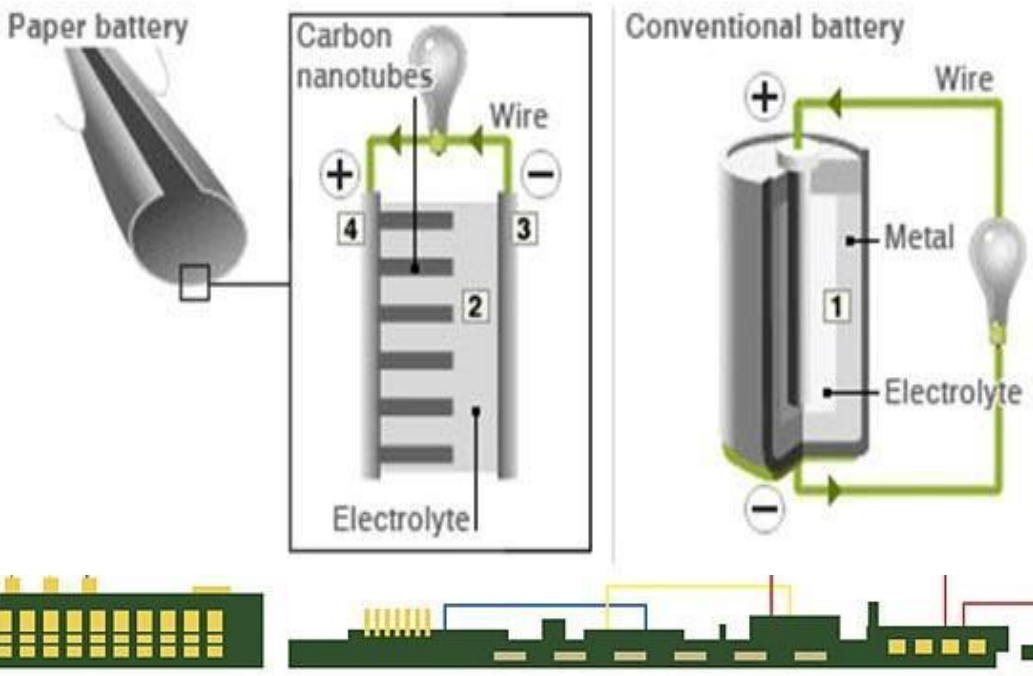
PAPER BATTERY

A paper battery is a thin, flexible energy production and storage device that is formed by combining carbon nanotubes with a conventional sheet of cellulose-based paper. In addition to being disposable, paper batteries may be folded, cut or otherwise shaped for different applications without any loss of integrity or efficiency.

As sensors are increasingly being embedded in everyday objects, there has been a corresponding need for alternative power sources in the Internet of Things (IoT). The high cellulose content and lack of toxic chemicals in paper batteries make them both biocompatible and environmentally friendly, especially when compared to the lithium ion batteries used in many present-day electronic devices.

Specialized paper batteries are expected to act as power sources for any number of devices implanted in humans and animals, including RFID tags, drug-delivery systems and pacemakers. In theory, a capacitor introduced into an organism could be implanted fully dry and then be gradually exposed to bodily fluids over time to generate voltage.

Ten years ago, scientists at Rensselaer Polytechnic Institute and MIT grew nanotubes on a silicon substrate and then impregnated gaps in the matrix with cellulose. When two sheets were combined with the cellulose sides facing inwards, a supercapacitor could be activated with ionic liquid forms, including salt-laden solutions like human saliva, blood, sweat or urine.



Recently, researchers at the State University of New York printed thin layers of metals and polymers onto a paper surface that contains freeze-dried exoelectrogens, a type of bacteria that can transfer electrons outside the bacteria's cellular walls. Any type of bio-liquid can be used to revive the exoelectrogens and activate the paper battery by allowing bacteria to pass through cell membranes and make contact with external electrodes.

QUIZ-o-MANIA

1. In Ideal case, the Charging current for 200Ah battery would be_____?

ANSWER - 20 A.

2. In Real case, the Charging current for 200Ah battery would be_____?

ANSWER - 20-22A

3. In Ideal case, the Charging Time for 200Ah battery would be_____?

ANSWER - 10 hours

4. One (1) Ah =_____?

ANSWER - 3600C

5. ***The commercial lead acid cell has 13 plates. The number of positive plates would be_____.***

ANSWER - 6

6. A Battery is a series or parallel combination of electrolytic cells.

ANSWER - True

7. In a single cell, the two electrodes are separated from each other by——

ANSWER - 1mm

8. Standard open circuit voltage for Lead-acid battery at standard conditions is——-

ANSWER - 2.048 Volts

9. In a primary cell, one of the electrodes is usually used away after certain time with chemical action.

ANSWER - True

10. A primary dry cell is called so because——

a) The electrolyte used is completely dry
b) The electrolyte used is a moist paste
c) Dry electrodes are used
d) None of the above

ANSWER - **(b)**