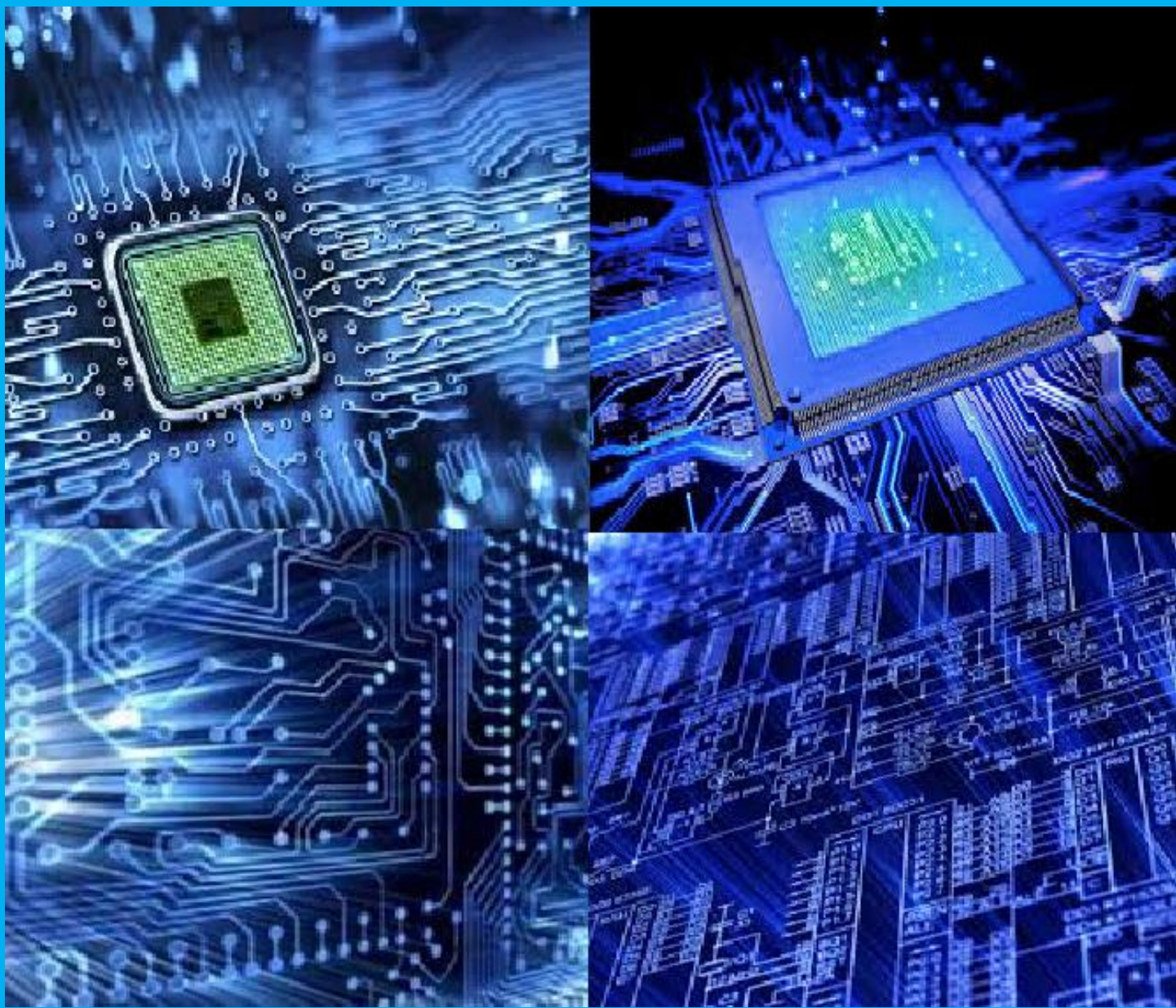


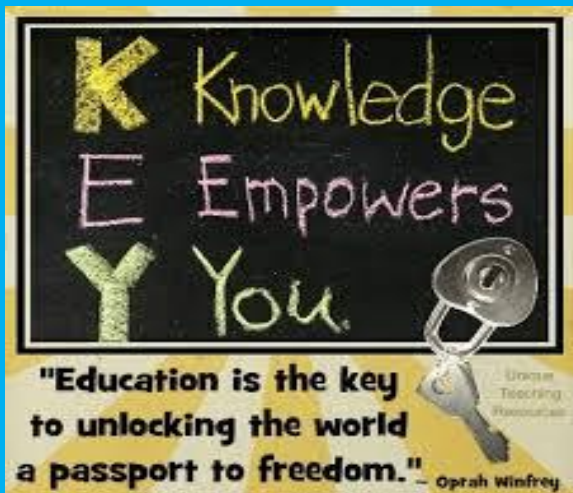
# UDGHOSH

A VOICE OF ECE DEPARTMENT

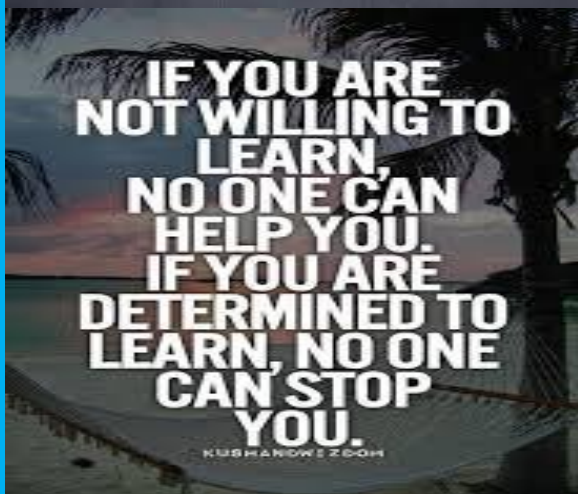


Volume 2, No.3

MAY-JUNE- 2016



Education is the best friend.  
An educated person is respected  
everywhere. Education beats the  
beauty and the youth.  
- Chanakya



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DEEKSHA SRIVASTAVA (2<sup>ND</sup> YR)

# **DEPARTMENTAL ACTIVITIES**

## ***WEBINAR ON CIRCUIT SIMULATION OF PCB DESIGN (TARGET 3001 SOFTWARE)***

A webinar on “circuit simulation of PCB design using target 3001 software”, was organized by Dellsoft technologies on 07/06/2016 in ECE department . The whole program was co-ordinated by Neha Goel, Assistant Professor, ECE department.

Target 3001 is CAD/CAE software for integrated PCB design suite. This is integrated software inclusive of the schematic simulation and layout data into one user interface and the integration of these data into one file is revolutionary to the work of design engineer. Target 3001 itself consists of A/D mixed mode analysis, PCB layout, 3 Dimensional view, EMC analysis check, front panel layout.

### **THE CONTENTS OF WEBINAR WAS:**

- Introduction to target 3001 software for circuit simulation and PCB design analysis.
- Design and analysis of an analog and digital circuit using target 3001 software.

### **BENEFITS OF TARGET 3001 SOFTWARE:**

- PCB layout CAD software
- GERBER and other production data
- One project file keeps all data
- SQL component data base
- User friendly license policy
- No maintenance contracts
- No node locking
- No activation codes
- No hardware protection systems
- Online up gradation

All the faculty members of ECE department attended the program and shown a great interest in this software.



## ***STUDENT FAREWELL***

*"As life gives you wings, always remember that no matter what you do and where you go, we are always here... looking out for you and wishing that all your dreams come true."*

Farewell for final year student was held on 9<sup>TH</sup> May 2016. Head of the department addressed the student and gave his best wishes to the students for their bright future.



## ***STUDENT'S INDUSTRY INTERACTION PROGRAM***

Department has supported third year students for their summer training, which they have to complete after third year. Some of the organizations where the students are doing training are listed below

<b>Company Name</b>	<b>Place</b>
BHEL	Haridwar
DMRC	Delhi
BEL	Ghaziabad
BSNL	Ghaziabad
NTPC	Dadri
Signal & Telecom	Goarkhpur
UPRVUNL	Jhansi
CETPA	Noida
Accurate Circuits	Ghaziabad
NTL Lemnis	Noida
Futuronix Automation Pvt. Ltd	New Delhi
Tata tele Services	Lucknow
ALTC	Ghaziabd
East Central Railway	Mugalsari,Hazipur
Doordarshan	Lucknow,Varansi,Kanpur
RDSO	Lucknow
Havells	Ghaziabad
DRDO	Kanpur
East Central Railway	Mugalsari
CEL	Ghaziabad
Goldtesh Precision Electronic	New Delhi
Airport Authority of India	New Delhi
3ST Technologies	Noida
Mantra Radio	Barielly
DBOTS India	Ghaziabad
CMC	Aligargh
Indian Railway	Ratlam
Prasar Bharti	Lucknow
Diesel Engine	Varanasi
Grant Thorton	Gurgaon
HAL	Lucknow
Railway Signal	Barielly
Robosaplens Tech	Noida

# FACULTY'S TECHNICAL CORNER

## DOUBLE GATE SOI MOSFET



*By: Neha Goel (Assistant Professor)*

The physical dimensions of bulk MOSFETs have been aggressively scaled down and these conventional devices will soon be experiencing limited improvements due to the scaling down. In order to continue performance improvements, new device architectures are needed.

As the channel lengths of conventional planar metal oxide semiconductor field effect transistor (MOSFET) shrink into the nano meter regime, performance of the devices becomes degraded mainly because of short channel effects that arise due to weakened gate control.

The nano range silicon on insulator metal oxide semiconductor field effect transistors (SOI-MOSFET) with double gate around the silicon channel that can significantly improve the gate control are therefore considered to be promising candidates for the next generation transistors.

The silicon-on-insulator (SOI) MOSFETs offer a way to address the devastating short channel effects in bulk CMOS scaling. The structures of SOI devices are not much different from bulk CMOS. An insulation layer is inserted underneath the device on the silicon substrate. This insulation layer introduces lower coupling capacitance from the conducting channel to the substrate compared to a bulk CMOS. The benefits of an SOI MOSFET include higher current drive producing smaller delays, since doping-free channels have slightly higher mobility.

A buried oxide insulation layer minimizes current leakage from the drain/source junction to substrate. This renders the SOI MOSFET an outstanding silicon device applicable for high-speed and low-power applications.

# STUDENT'S EDITORIAL

## *What is education anyways?*

Amulya Bajpai  
ECE 2<sup>ND</sup> Year

*"Education is the manifestation of the perfection already inside a man."*  
*-Swami Vivekananda*

*It is something most of us have heard about, probably have thought about and even pitied themselves about, of India's 70% undergraduate engineering students being jobless. Well, we all know we are a young country and as much of an asset it is, it also presents us with much greater sense of responsibility in terms of being able to nurture focused, skilled and educated youth.*

*But the statuses regarding the same sometimes need our concern. They are devastating in a way that the problem is in not being jobless; the problem lies in being unemployable. This theory brings our education system directly under question as to why are we trying to manufacture a certain typical breed of fact files as students rather than focusing on skill development and more humane concepts of education.*

*What is education anyways? Is it being able to read and write and score, being an alternative for copy/paste button. And if this is education then if I had my own company, would I hire such a person, so called educated person with a degree, I don't think so.*

*A survey showed that approximate 65% of students in engineering colleges gaining more than 60% marks lacked basic communication skills, and mind me, speaking in English is just a part of being skilled in formal communication ,moreover people lacking in having anything worth saying is a bigger problem*

*.Then what is it? According to me educating someone is insisting them to form a rational, innovative and overall a defined yet flexible thought process.*

*A person educated as per the definition, even in the case if remains jobless won't be a liability to the society and the country.*

*Apart from revising our definition of education, another problem that I feel necessary to mention is confusion, fear and pessimism that I witness in today's youth. Confusion of not knowing what to do, fear of accepting what one really wants to do and being pessimist and laid back about changing one's present situation.*

*As Prime Minister Narendra Modi said, people should concentrate on what they are trying to do rather than what they want to be, it is very necessary that guidance in a way of providing direction is provided to students. System should be made flexible in a way that in cases of mismatched career choices, students may have the way to start a new.*

*More and more focus on development of thought process, recognizing one's skills, skill development and overall a value based humane centered education might just be a way out of the issue of being unemployable and jobless for today's undergraduates.*

*I am grateful of being able to express myself through our ECE department magazine Udghosh. Thanks to all the teachers and students who made this medium possible.*



# Electronic Pills: Collecting Data Inside The Body

*PIYUSH GIRI  
ECE 3<sup>RD</sup> Year*

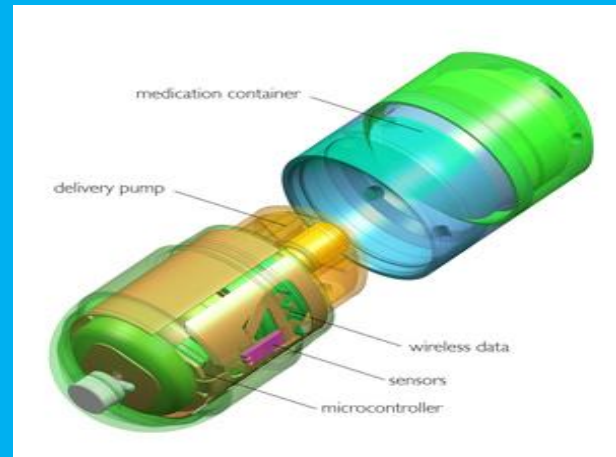
After years of investment and development, wireless devices contained in swallow able capsules are now reaching the market.

Companies such as Smart Pill, based in Buffalo, New York and Israel –based given imaging (Pill Cam) market capsules the size of vitamin tablets.

These pills contain sensors or tiny cameras that collect information as they travel through the gastrointestinal tract before being excreted from the body a day or two later.

These new electronic inventions transmit information such as acidity, pressure and temperature levels or images of the esophagus and intestine to your doctor's computer for analysis.

Doctors' often use invasive method such as catheters, endoscopic instruments or radioisotopes for collecting information about the digestive track. So device companies have been developing easier less intrusive ways to gather information.



Digestive diseases and disorders can include symptoms such as acid reflux, bloating, heartburn, abdominal pain, constipation, difficulty swallowing or loss of appetite.

“One of the main challenges is determining just what is happening in the stomach and intestines”, says Dr Anish. A. Sheth, Director of the Gastrointestinal Motility Program at Yale-New Heaven Hospital. Doctors can inspect the colon and peer into stomach using endoscopic instruments but some areas cannot be easily viewed and finding out how muscles are working can be difficult. Electronics Pills are being used to measure muscle contraction, ease of passage and other factors to reveal information unavailable in the past.

## INSPIRATION

# HOMI JEHANGIR BHABHA

Homi Jehangir Bhabha was born on 30-10-1909 and was a nuclear physicist and a professor at TIFR. Bhabha belonged to a wealthy Parsi family that was very influential in the west of India. He got a doctorate degree from the University of Cambridge in 1934 after he had completed his studies from the Elphinstone College and graduated from the Royal Institute of Science that resided in Bombay. All this time he worked along with Neil Bohr that led them to discover the quantum theory. Bhabha also did some work with Walter Heitler and they made a breakthrough in the cosmic radiation's understanding by



working on cascade theory of electron showers. In 1941, Bhabha got elected for his work in the Royal Society. Bhabha went back to India in 1940 and started his research in Bangalore at an institute in India named The Indian Institute of Science about the cosmic rays. He was given a position as a director at an institute in Bombay known as Tata Institute of Fundamental Research. He was a skillful manager and it was due to his prominence, devotion, wealth and comradeship with Jawaharlal Nehru, PM of India that he was able to gain a leading position for allocating the scientific resources of India.

Bhabha was the first one to become the chairperson of India's Atomic Energy Commission in the year 1948. It was under his direction that the scientists of India made their way into making an atomic bomb and the first atomic reactant was operated in Bombay in the year 1956. Bhabha also led the first UN Conference held for the purpose of Peaceful Uses of Atomic Energy in Geneva, 1955. He promoted nuclear energy control and also prohibition of atomic bombs worldwide. He was absolutely against India manufacturing atomic bombs even if the country had enough resources to do so. Instead he suggested that the production of an atomic reactor should be used to lessen India's misery and poverty. A post in Indian Cabinet was rejected by him but he served as a scientific advisor to PM Nehru and Lal Bahadur Shastri.

Quotes By Him:

- I know quite clearly what I want out of my life. Life and my emotions are the only things I am conscious of. I love the consciousness of life and I want as much of it as I can get.
- It is no use saying to Beethoven "You must be a scientist for it is a great thing" when he did not care two hoots for science; or to Socrates "Be an engineer; it is work of intelligent man." It is not in the nature of things. I therefore earnestly implore you to let me do physics.

BY:  
Shashank Bindal  
ECE 2<sup>nd</sup> Year

## COROLLARY

1. **Abmho**- The obsolete unit of conductance and of conductivity in the electromagnetic system. Replaced with ABSIEMENS.
2. **Power hyperbola**-For a semiconductor device or vacuum tube, a curve plotted from the device's current and values, which provide the power value when multiple (e.g., a 2-watt curve for the direct-current collector input of a power transistor).

3. **Lossy line**-A line or cable having comparatively high or excessive attenuation per unit length.
4. **Victron**-A brand of polystyrene, a low-loss plastic insulant that is especially useful at high radio frequencies.
5. **Intermittent signal**-An interrupted signal resulting from the intermittent operation of a circuit or device

## **ACADEMIC ACHIEVEMENTS**

### **PUBLICATION**

- Dr. Vinod Kumar Choudhary published a paper on the topic “Effect of RF plasma on Gridded gate Pt/Sio<sub>2</sub>/Si MOS sensor for Detection on Hydrogen”, in IEEE Sensors Journal.

### **SEMINAR /WORKSHOP/CONFERENCE**

2<sup>nd</sup> Rastriya Adhivation of Vijnan Bharti at Bhopal:

Dr. Dharendra Kumar has attended the two days national program during 11<sup>th</sup>-12<sup>th</sup> June 2016 at Bhopal. The Adhivation was inaugurated by Honorable Union Minister of Science and Technology, Government of India on 11<sup>th</sup> June 2016. The key speakers were the renowned scientists and academicians of the country.

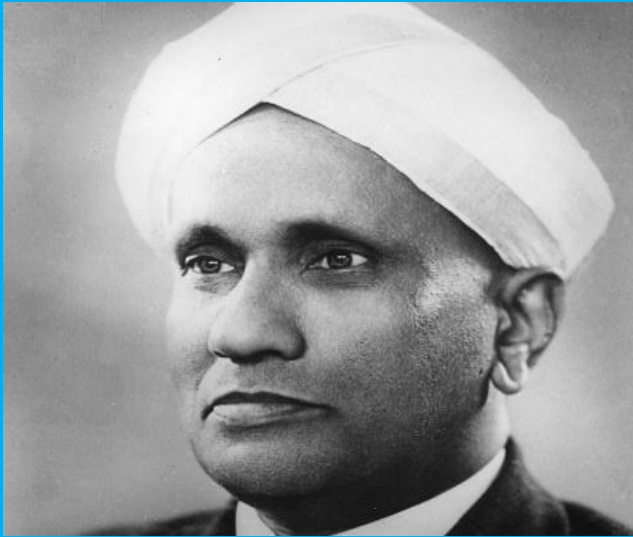
In this meet there were three panel discussions as given below;

- a. Science Education led by Dr. G. Madhavan Nair,
- b. Agriculture and Climate Change led by Dr. Anil Kakodkar,
- c. Health Scenario and Challenges led by Dr. Soumya Swaminathan

# PLACEMENT

S. NO.	NAME OF THE STUDENTS	BRANCH	NAME OF COMPANY
1	PRIYANKA SAINI	ECE	QSPIDERS
2	SUJEET KUMAR PURI	ECE	QSPIDERS
3	SHIVAM KUMAR	ECE	QSPIDERS
4	DOLLY SAHU	ECE	QSPIDERS
5	MOHIT TEJWANI	ECE	QSPIDERS
6	SHUBHAM GUPTA	ECE	QSPIDERS
7	RAVI VERMA	ECE	MPHASIS
8	SHUBHAM GUPTA	ECE	MPHASIS
9	VERNIKA MISHRA	ECE	MPHASIS
10	PRASHANT PRABHAKAR SINGH	ECE	GEMINI SOLUTIONS
11	GAURANG OMAR	ECE	GEMINI SOLUTIONS
12	KULDEEP CHOUDHARY	ECE	CYBERLINKS
13	KARAN KANOJIA	ECE	MAINTEC TECHNOLOGIES PVT. LTD.
14	PRASHANT GUPTA	ECE	MAINTEC TECHNOLOGIES PVT. LTD.
15	YOUNGANSHU GOYAL	ECE	FUJITSU CONSULTING INDIA
16	PRASHANT GUPTA	ECE	COLLABERA TECHNOLOGIES
17	SUMIT KUMAR	ECE	COLLABERA TECHNOLOGIES
18	VISHWAJEET SAMAL	ECE	COLLABERA TECHNOLOGIES
19	SATYENDRA SINGH	ECE	COLLABERA TECHNOLOGIES
20	PRADEEP KUMAR	ECE	COLLABERA TECHNOLOGIES
21	ASHISH TIWARI	ECE	COLLABERA TECHNOLOGIES
22	SHASHANK MISHRA	ECE	COLLABERA TECHNOLOGIES
23	SAURABH SHUKLA	ECE	COLLABERA TECHNOLOGIES
24	SWYAM SRIVASTAVA	ECE	COLLABERA TECHNOLOGIES
25	PRIYANKA SAINI	ECE	AON HEWITT
26	SHUBHAM GUPTA	ECE	QUANTUM PAGE PVT LTD.
27	ASHWINI KUMAR	ECE	AON HEWITT
28	KARAN KANAUIA	ECE	ANS AFFILIATE SOLUTIONS
29	YOGESH JAISWAL	ECE	INDUSTRYBUYING

## ***NOTABLE SCHOLARS OF MODERN INDIA***



### ***SIR CHANDRA SHEKHAR VENKETRAMAN***

SIR CHANDRA SHEKHAR VENKATRAMAN(7 November 1888 – 21 November 1970)was an Indian physicist whose ground breaking work in the field of light scattering earned him the 1930 Nobel Prize for Physics. He discovered that, when light traverses a transparent material, some of the deflected light changes in wavelength. This phenomenon is now called Raman scattering and is the result of the Raman Effect. National Science Day is celebrated in India on 28 February each year to mark the discovery of the Raman Effect by Indian physicist Sir Chandrasekhara Venkata Raman on 28 February 1928.



## ***JAGDISH CHANDRA BOSE***

SIR JAGDISH CHANDRA BOSE (30 November 1858- 23 November 1937) was a polymath, physicist, biologist, biophysicist, botanist & archaeologist, as well as an early writer of science fiction. Living in British controlled India, he pioneered the investigation of radio and microwave optics, made very significant contributions to plant science, and laid the foundations of experimental science in the Indian subcontinent. IEEE named him one of the fathers of radio science He is considered the father of Bengali science fiction. He also invented the crescograph. A crater on the moon has been named in his honor.

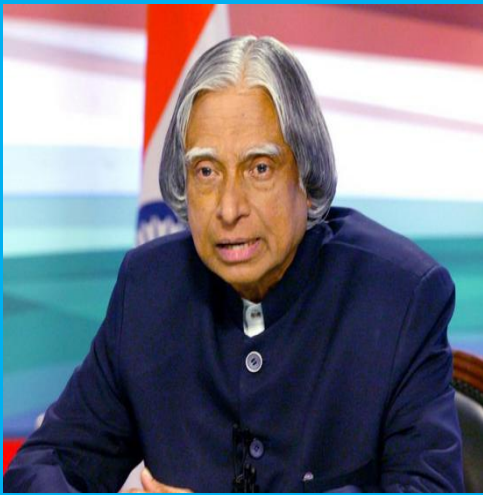


## ***SATYENDRA NATH BOSE***

SATYENDRA NATH BOSE (1 January 1894 – 4 February 1974) was a Bengali physicist specializing in mathematical. He is best known for his work on quantum mechanics in the early 1920s, providing the foundation for Bose–Einstein statistics and the theory of the Bose–Einstein condensate. A Fellow of the Royal Society, he was awarded India's second highest civilian award, the Padma Vibhushan in 1954 by the Government of India.

The class of particles that obey Bose–Einstein statistics, bosons, was named after Bose by Paul Dirac.





## *DR.ABDUL KALAM*

Dr. A.P.J. ABDUL KALAM (15 October 1931- 27 July 2015) was born to a poor Tamil Muslim family at Rameswaram .He was the 11th President of India (2002-07). He worked with Indian Space Research Organization (ISRO) and Defense Research and Development Organization (DRDO) as an aerospace engineer before becoming the President of India. His work on the development of launch vehicle and ballistic missile technology had earned him the name of the 'Missile Man of India'.



## ***MOKSHAGUNDAM VISVESVARAYAM***

MOKSHAGUNDAM VISVESVARAYAM (15 September 1861- 12 April 1962) was an Indian engineer, scholar, statesman and the Diwan of Mysore from 1912 to 1918. He is a recipient of the Indian Republic's highest honor, the Bharat Ratna, in 1955. Every year, on his birthday, 15 September is celebrated as Engineer's Day in India in his memory. He is held in high regard as a pre-eminent engineer of India. He was the chief engineer responsible for the construction of the Krishna Raja Sagara dam in Mysore as well as the chief designer of the flood protection system for the city of Hyderabad.

## ***UPCOMING MEGA EVENTS***

- ***FDP ON WIRELESS SENSOR NETWORKS & COMMUNICATIONS, SEPTEMBER 2016.***
- ***NATIONAL CONFERENCE ON ADVANCEMENT IN MICROWAVE & PHOTONIC DEVICES FOR ELECTRONIC COMMUNICATION SYSTEMS, DECEMBER 2016.***