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RAJAT YADAV

SHUBHANGI DUBEY

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FDP ON OFC

Faculty Development program on Optical Fiber Communication was organized by ECE Department in between 5th – 9th SEP, 2016. Course Co-ordinator of the FDP was Dr. SBL Sachan. Various experts of NITTTR Chandigarh shared valuable knowledge about optical fiber communication techniques.

Dr. B.C. Chaudhary discussed about the following points:

Fiber-optic communication: It is a method of transmitting information from one place to another by sending pulses of light through an optical fiber. The light forms an electromagnetic carrier wave that is modulated to carry information.

Optical fiber Waveguide: It is used for transmission of light. It consists of a dielectric fiber core, usually from glass, surrounded by a layer of glass or plastic cladding characterized by the refraction index lower than that of the core. The light transmitted through the optical fiber is trapped inside the core due to the total internal reflection phenomenon.

Optical amplifier: It is a device that amplifies an optical signal directly, without the need to first convert it to an electrical signal. An optical amplifier may be thought of as a laser without an optical cavity, or one in which feedback from the cavity is suppressed.

Mr. Randhir Bhatnagar discussed about various optical sources such as Tungsten, Deuterium, Mercury & Hollow Cathode Lamp and Optical detectors like Photodiode, Photodiode Array, Light Dependent Resistor, Avalanche Photodiode, Photomultiplier Tube, Micro channel Plate, Image Intensifier, Position Sensitive Detector & CCD. System design concept of an OFC was also discussed during the FDP. An OFC system requires measurement techniques for verifying the operational characteristics of the constituent components.

Systems Communication Requirements:

1. Mainly Two Parameters of concern
2. Link Length
3. Repeater less distance (50km, 100km, 150km)
4. Maximum data transmission rate (Mbps, Gbps)



FDP ON WMC

“Wireless & Mobile Communication” was the theme for Faculty Development Program organized by ECE department, RKGIT, held on 3rd – 7th OCT, 2016. The day wise details are given as below:

Day 1:

- FDP started with the inaugural by Prof. (Dr.) Dhirender Kumar, HOD ECE.
- Ms. Payal was the guest speaker for the day.
- The first session started around 11.30 A.M. by Ms. Garima Saini currently working as Asst. Prof in the department of ECE NITTTR, Chandigarh.
- She shared her valuable knowledge and experience in the journey to 4G communication system. She discussed about carriers that use orthogonal frequency division multiplexing instead of Time Division Multiple Access or Code Division Multiple Access & their service has been 4G. In second session Ms. Payal gave a brief view about cell design & GSM architecture and valuable knowledge about base station sub system.

Day 2:

- On Day 2 of FDP 1st session was dedicated on Wi-Fi & Wi-Max conducted by Mr. Naveen Kumar.
- In the 2nd & 3rd session Mr. Kapil Bhutani discussed about R.F network plane & drive test using ATOLL. He discussed about optimization techniques and ATOLL radio planning software.

Day3:

- 1st & 2nd session was dedicated to 3G architecture delivered by Mr. Mayank Kaushal. He discussed about WCDMA its codes and OVSF code groups and reduction in call blocking for WCDMA system.
- Last session of the day comprised of security issues in router discussed by Mr. Saurabh.

Day4

- Dr. D.S Saini, Prof. & HOD, Chandigarh college of Engineering & Technology, Chandigarh discussed about OFDM and its modulation techniques. After this session Mr. Aditya Bhardwaj discussed about mobile cloud computing & its application.
- Expert lecture was delivered by Dr. Rakesh Kumar on VANET.

Day5

- The concluding day was dedicated to wireless and mobile communication & its technique delivered by Dr. Amol Bhondekar session was based on R.F radiations.
- The whole session was very beneficial for faculty members to motivate students for industry jobs in the field of EC.



Teacher's Day

Teachers' Day has been celebrated in India since September 5, 1962. It was first observed on request by the students and friends of Dr. Sarvepalli Radhakrishnan, who wanted to celebrate his birthday. Dr. Sarvepalli Radhakrishnan suggested that instead of celebrating his birthday, the students should observe September 5 as Teachers' Day. Since then Teacher's Day celebrations are held all across India on the birthday of Dr. Sarvepalli Radhakrishnan.

In CRC hall, students celebrated Teacher's day with all faculty members of ECE Department. The noon commenced with the cutting of a cake. Then the event carried on at a playful pace with singing and dancing performances by second and third year students which were duly applauded. A fun questionnaire & singing session was held among the teachers which was enjoyed and enthusiastically participated by the various faculty members.



EDTIC

In Dialogue with Mr. Sam Beisla and Mr. Ravi Gupta

Question: What is the first level to start entrepreneurship?

Answer: If anybody wants to become an entrepreneur like in our age its dilemmatic situation. There is lot of pressure and many things are happening around you. If you have some idea and you have to prove it then nobody can stop you. If a person is passionate about his ideas, not only idea but also about concept he should take advice from an expert because of lack of experience he is not able to judge, he needs mental support, a mentor, resources and money. Have tug of marketing with you and lastly read data whatever happened in the past.

Question: What problems does an aspiring entrepreneur face when he completes his studies and step into industry for first time?

Answer: First thing is “lack of awareness” that is not about lack of knowledge or opportunities; it is about our core strength. Some people work on their weaknesses for the rest of their life and give up, rather they should work on the strengths they have. Second thing is “will power”. If you are determined to your work you can take out best stuff from impossible things.

Question: What about the students, who belong to middle class family, and studying on loan? How do they become an entrepreneur?

Answer: If you are studying on loan you are on a back step. In fact you have trapped yourself. You have already started your business by taking loan. It is difficult for you to play in front foot. So you have to keep the job, pay back your loans and keep your dreams alive. Start working in a team to explore ideas and reduce financial burden because “NAUKARI AKELA VYAKTI KARTA HAI, VYAPAAR PARIVAAR KARTA HAI”.

Question: How will you inspire the students to be an entrepreneur so that they achieve their goals in this field?

Answer: Everyone has their own lifestyle. They follow their own guideline. But when you are doing job you are under controlled environment. You have to work under people and their ideas. So being an entrepreneur you can work on your own conditions and policies which gives you enthusiasm and self encouragement.

Question: What is your experience as an entrepreneur?

Answer: It is awesome, fantastic and everybody should do it. Whether you fail, you pass, you are successful or less successful or you are having, money or no money, at the end of the day it is all immaterial because everybody had to die may be tomorrow or after ten year so the thing is you can be happy and satisfied if you follow your own passion.

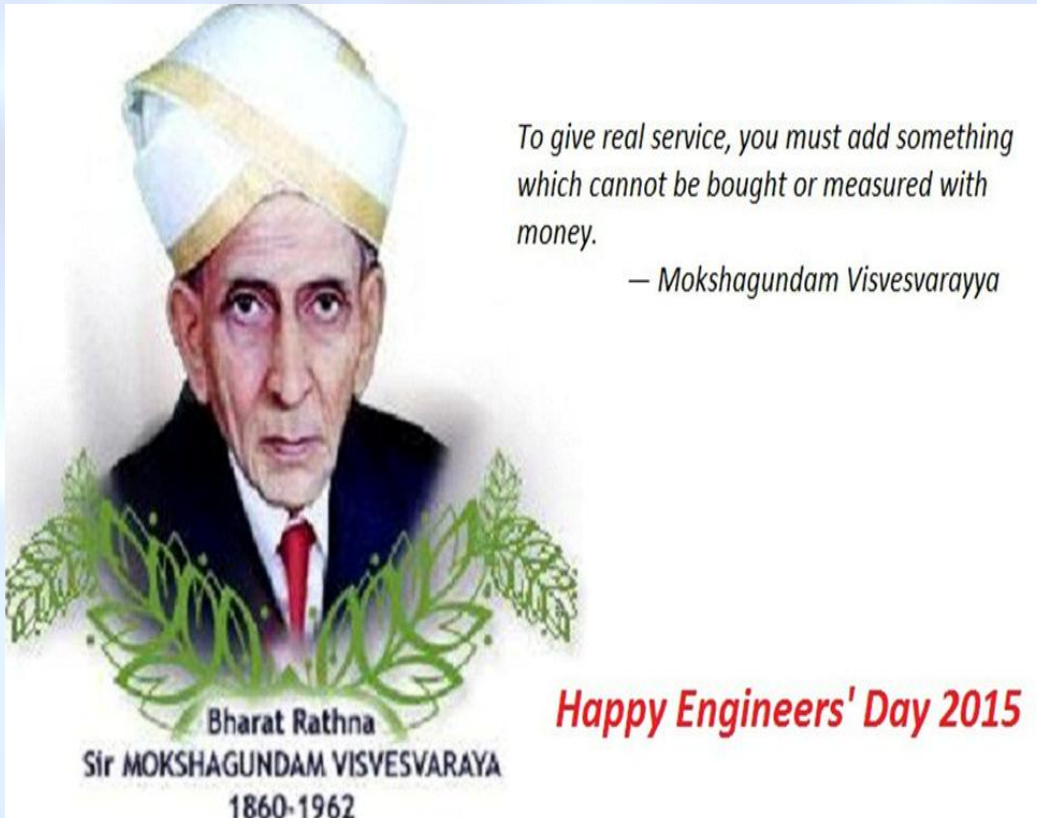
Question: What is your experience In our college RKGIT?

Answer: I have visited a lot of colleges; people do not take this seriously. But I was surprised, that there are a lot of people in your college who have actually taken their ideas, hit the ground and turn out their business. I am happy and excited to see such response. Our team is going to help you all under the guidance of your teachers.

Question: Any suggestion to young engineers?

Answer: The entrepreneurship word is slightly different. Get to the street, do stuffs, just don't waste your time in just reading books only that is not worth because unless you practically apply even a sentence written in a book, you will never understand the actual meaning of it. So if a choice is given to you, whether you have to read it or practically apply it, I would say just go for practical knowledge. Choose that thing which is very close to your heart. Dedicate everything to it and be a master of it.

ENGINEER'S DAY



The Engineering community across India celebrates Engineers Day on 15 September every year as a remarkable tribute to the greatest Indian Engineer Bharat Ratna, Sir Visvesvaraya. He is held in high regard as a pre-eminent engineer of India.

A scholar, statesman, educationist and perhaps the most celebrated engineer in India, Mokshagundam Visvesvaraya was the embodiment of everything a country needs to strive for a better future.

This year marked the 48th Engineers Day celebrations in India, held in commemoration of Visvesvaraya's 155th birth anniversary. He played many parts in his life and the day is marked as a remembrance of his achievements and spirit of progress.

Sir Mokshagundam Visvesvaraya, known as Sir MV had a flair for complex engineering problems and nation building. It is to honor his achievements and contribution towards the country that India celebrate Engineer's Day on his birthday, 15 September.

Here are 5 things you should know about Sir MV:

1. After topping the Poona College of Engineering he was directly (without any interview) recruited by Government of Bombay and appointed as Assistant Engineer in Public Works Department.

2. He created automatic sluice gates which were later reused for Tigra Dam (in Madhya Pradesh) and KRS Dam (in Karnataka) as well. For this patent design he was supposed to get a recurring income in the form of royalty but he refused it so that the government could use this money for more developmental projects.

3. Between 1895 and 1905, he worked in different parts of India:

- In Hyderabad, he improved the drainage system.

- In Bombay, he introduced block system of irrigation and water weir flood gates.

- In Bihar and Orissa, he was a part of the building railway bridges project and water supply schemes.

- In Mysore, he supervised the construction of KRS dam, the then Asia's biggest dam.

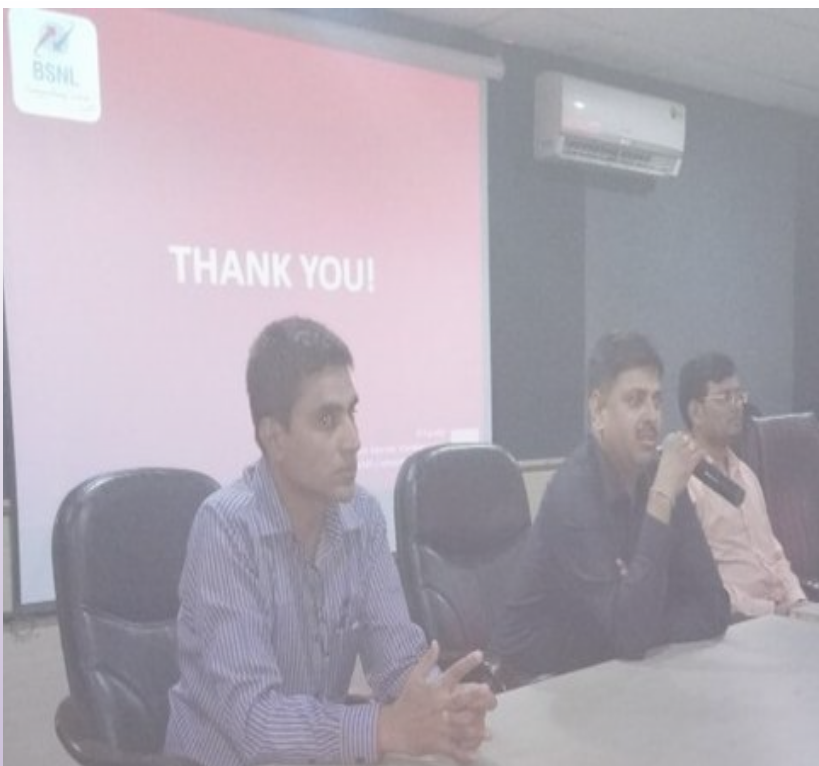
4. He was offered Dewanship (Prime Minister's position) of Mysore in 1908 and given full responsibility of all the development projects. Under his Dewanship Mysore saw major transformation in the realms of Agriculture, Irrigation, Industrialization, Education, Banking and Commerce.

5. He was conferred with India's highest civilian award, Bharat Ratna in 1955 for his contribution towards Engineering.

“Happy Engineer's Day to all the Engineers out there for helping in rebuilding our Nation”

Industrial Interaction with ALTTC

An industrial interaction with ALTTC was organized by Electronics & Communication Engineering Department on 28th Sep 2016 at RKGIT, Ghaziabad. It was a mega event in which more than 200 students were present to interact with the experts from the biggest telecom training center in NCR.



The speakers were Mr. Abhishek Gupta and Mr. Rajeev Verma. The topics covered by these two speakers were **SATELLITE COMMUNICATION & WIRELESS and MOBILE COMMUNICATION.**

They have covered many topics of practical implementation and their challenges in telecom system.

SPORTS "UTKANSH-2016"

RKGIT mega sports event "UTKANSH-2016" organized in between 14th – 24th SEP 2016 was inaugurated by Shri Arjun Singh, Asian Games Gold medalist in the gracious presence of Director Prof. R.P Maheshwari along with HODs in Basket Ball Ground. All the faculty wardens were also present in the inaugral ceremony.

Co-ordinators of sport events were Dr. Arvind Singh, Prof. (Dr.) Dhirender Kumar HOD ECE, Dr. Sanjeev Goel, Mr. Vaibhav Sharma and Mr. Ashish Singh etc.

Many events were organized such as Badminton Singles & Doubles, Cricket, Atheletics (100,50 meters), carrom, Chess & Volleyball etc. for different age groups.



About 600 students participated in more than 15 types of games.

The enthusiasm which were shown by the students towards sports was amazing.



INDUSTRIAL VISIT IN ALTTC

Advanced Level Telecom Training Centre (ALTTC), Ghaziabad is the apex Training Institute of BSNL. ALTTC was set up as a joint venture of International Telecommunication Union, Geneva, UNDP and the Government of India in 1975. ALTTC functions on the frontiers of telecom technology, finance and management and imparts training to the leaders in the business. The strength of ALTTC lies in the state of art labs, massive infrastructure and trained, talented and qualified human resource pool.



The training areas cover vast spectrum of topics such as Digital Switching and IN; Mobile Communication: GSM, 3G, CDMA; Data communication and Information Technology: MPLS, VPN, Broadband, IPv6, Database Administration, Server Administration, IT Security; Optical Networks: SDH, DWDM, NGSDH, NGN, Access Networks, Management, Telecom Finance, Building Science and Telecom Network Planning. 45 students from Third year had visited on 5th OCT,

2016 at ALTT Centre, Ghaziabad. In this visit students had been given brief introduction about the modern telecom technology by Mr. Rajeev Verma and Mr. Abhishek Gupta. They visited the following Labs:

- *OFC (Optical Fiber Lab)*
- *NGN (Next Generation Network Lab) 12*
- *Broad Band Lab*
- *GSM Lab*
- *DWDM Lab*

Experts gave students very useful information for learning current trends and concepts of new telecom technology that is currently being used in various industries. Various Technical Experts of ALTT Centre were accompanied by these students for making them understand about concepts of Telecom Technologies. This visit has been certified by the ALTT Centre, Ghaziabad and certificates have been issued to the students by ALTTC.



FACULTY TECHNICAL CORNER



TALON Tracked Military Robot

By: Sandeep Bhatia A.P. ,ECE,RKGIT

"The robot is developed to protect warfighters and first responders against explosive threats."

TALON is a lightweight, unmanned and tracked military robot. The robot is developed to protect warfighters and first responders against explosive threats.

It can be deployed in military, first responder and law enforcement applications, and can be reconfigured to conduct a range of missions, including chemical, biological, radiological, nuclear and explosive, explosive ordnance disposal (EOD), rescue, heavy lift, communications, security, and detection of mines, unexploded ordinance and improvised explosive devices (IEDs). It also supports special weapons and tactics (SWAT) and military police (MP) operations.

TALON is one of the fastest robots in production that can travel through sand, water, and snow as well as climb stairs. The TALON transmits in color, black and white, infrared, and/or night vision to its operator, who may be up to 1,000 m away. It can run on lithium-ion batteries for a maximum of 7 days on standby independently before needing recharging.



TALON features and capacities

The robot can be configured with a number of sensors to detect gas, chemical, radiation and temperature. It can also be fitted with a heavy-duty rotating shoulder, longer reach for heavy lift operation. The robot has a high payload-to-weight ratio and can be deployed in all environmental and terrain conditions.

The robot is provided with one-way audio transmission with an option for two-way audio transmission. It can also be mounted with high-gain antenna with an extended LOS range of 1,200m.

Types:

Regular (EOD) TALON: Carries sensors and a robotic manipulator, which is used by the U.S. Military for disposal and disarming improvised explosive devices.

Special Operations TALON (SOTAL): Does not have the robotic arm manipulator but carries day/night color cameras and listening devices.

SWORDS ((Special Weapons Observation Reconnaissance Detection System)) TALON: For small arms combat and guard roles.

HAZMAT TALON: Uses chemical, gas, temperature, and radiation sensors.

The robot can also be controlled by a laptop Control unit (LCU) as well as a lightweight, wearable tactical robotic controller (TRC). Image below-TALON robots have been in continuous, active military service when they were successfully used in Bosnia for the safe movement and disposal of live grenades.



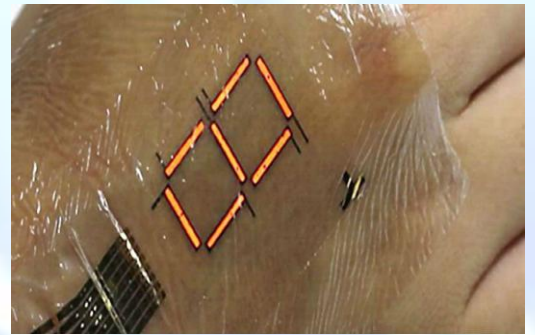
Super-thin Electronic Skin Lights Up a Digital Display on Your Hand

One more step toward leaving smart watches and fitness trackers behind

By: Sandeep Bhatia A.P. ,ECE,RKGIT

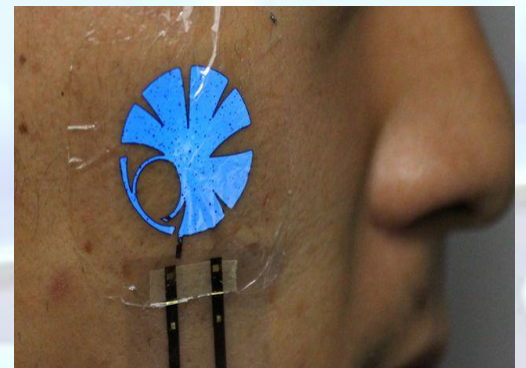
Super-flexible electronic displays are the thinnest ever, at an incredible 3 micrometers thick about 0.003 mm - more than 13 times thinner than a human hair. They are embedded with miniscule LED lights that you can adhere to your skin. So, your skin won't be burning and the displays can be used for longer stretches of time.

Researchers created organic polymer light-emitting diodes (PLEDs) — small sheets of energy-efficient lights — in three colors: red, green, and blue. When hit with electrical pulses, these lights can turn on and off, mimicking pixels on a normal screen. Arrangements of PLEDs can also display more complex information. Below, you can see seven red bars that form letters and numbers like a calculator screen on your hand.



Imagine having a fitness tracker that or a monitoring device that doctors can paste straight onto an ailing organ. Or a watch looks like it's built right into your wrist. These are all long-term possibilities for electronic skin (or e-skin) — ultra-thin and ultra-stretchy material that can mimic the flexibility of human skin.

You can see blue PLEDs logo that light up and dim at different power levels. It is possible to make super-thin tattoo-like monitoring devices that last for weeks. The most obvious use would be to replace fitness trackers and medical sensors to measure a person's pulse, blood oxygen levels and daily steps.



Pt Gate MOS Capacitor Sensor for Hydrogen Detection

By: Vinod Kumar, Associate Professor, ECE, RKGIT

Abstract

The Pt/SiO₂/Si MOS Capacitor was fabricated on p-type <100> (1-6 Ωcm) Si wafer with thermally grown oxide layer (SiO₂) of thickness about 33 Å. The Platinum (Pt) gate with thickness 350 Å was deposited by vacuum evaporation technique. The C-V and sensitivity vs Bias voltage (V) responses of the sensor were measured at different concentration of Hydrogen (0.2% to 2.2%) at 200 KHz at room temperature. The sensor showed better sensitivity (80.5%), as compared to reported earlier.

Keywords: MOS sensor, Pt, Hydrogen, C-V characteristics, Sensitivity.

Introduction

There is a growing need for H₂ sensors in many areas such as chemical and petroleum industry, fuelled motor vehicles, research laboratories, semiconductor processing for microelectronics and biomedical applications. Hydrogen is an inflammable and hazardous gas. So, due to safety reasons, the monitoring of Hydrogen has become an important issue. The semiconductor gas sensors can be classified in three categories as follows: i) MOS Capacitor (ii) MOS Field effect transistor (iii) Schottky diode. In the above said devices, the interface properties dominate the whole performance. In most Si based hydrogen detectors, fermi-level pinning effect is caused by the Palladium silicide formation. Therefore, Si-based gas sensors are fabricated with a thin oxide layer. However, greater the thickness of oxide layer, the lower the sensitivity of hydrogen response for the surface contamination. The first MOS gas sensor was fabricated by Lundstrom et al in 1975. It has been reported that structure investigated with Pd layers from 100 to 1000 Å and oxide thickness from (30-1000 Å) exposed to Hydrogen results in a change in the flat band voltage of the device and hence a shift in the C-V curves along voltage axis. Yadava et al have fabricated a Pd/TiO₂/Si MOS capacitor sensor. They have reported that the fixed surface state density in such a device increases linearly upon exposure to Hydrogen gas concentration. They have reported 47% sensitivity to Hydrogen in Nitrogen ambient atmosphere. Harris has reported Ti/TiO₂/Pt MOS sensor for Hydrogen detection. The detection of Hydrogen was based on change in conductance of TiO₂. Pandey et al have reported the C-V characteristics and Sensitivity vs Bias Voltage characteristics for the Pd/SiO₂/Si MOS capacitor following exposure to Hydrogen and Methane. They have reported the 73% sensitivity to Hydrogen. In this paper the C-V and sensitivity vs Bias voltage analysis have been carried out for the Pt gate MOS Sensor, exposed to various concentrations of hydrogen in air at room temperature. The fabricated sensor showed better sensitivity (80.5%) as reported earlier.

Experimental Procedure

The Pt gate MOS capacitor was fabricated on P type <100> (1-6Ωcm) substrate. The wafer was properly cleaned using standard technological cleaning procedures used in Si technology. A SiO₂ film of 33 Å was grown by the thermal oxidation method by keeping the wafer in oxidation furnace at 500°C for 35 minutes in oxygen and nitrogen ambient atmosphere of 3:1 ratio. Photolithography technique was used for retaining front side oxide and removing back side oxide. For required gate structure a standard metallic mask with 1 mm hole was used. The front face of Si wafer was kept on this metallic mask. Platinum gate (350 Å) was deposited, on front face by vacuum evaporation method. In this way, hundreds of devices were fabricated on single wafer in single attempt. Ohmic contact to the back side of Si substrate was made by

evaporating Aluminium metal. Annealing was done at 450 °C in nitrogen ambient for 7 minutes for achieving a proper front and back contacts. The schematic of the fabricated sensor is shown in fig.1.

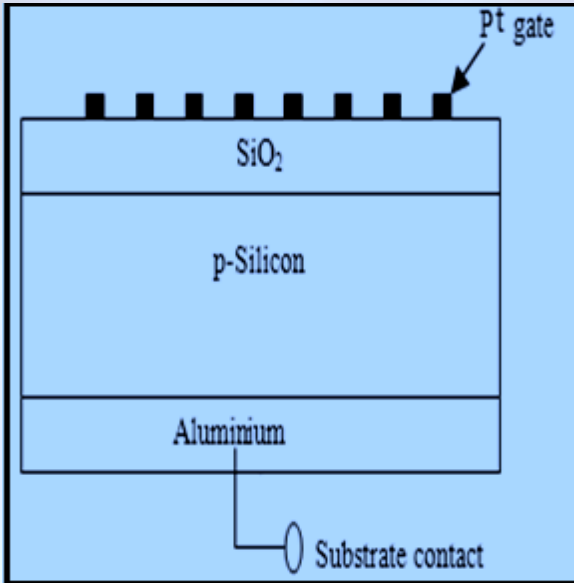


Fig.1. Schematic of Pt gate MOS Sensor

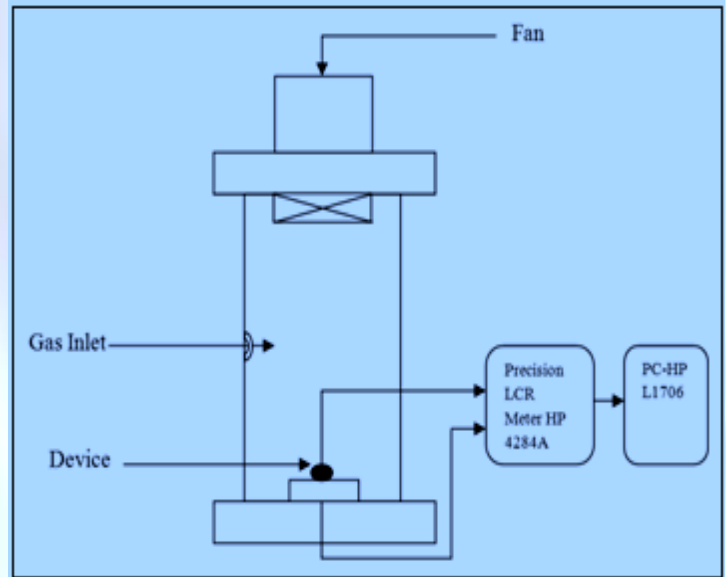


Fig.2. Experimental setup for C-V measurement of MOS Sensor

Results and Discussions

The C-V measurements of the fabricated Pt gate MOS capacitor have been carried out in air, in a closed chamber upon exposure to different concentrations of hydrogen (0.2%-2.2%) at 200 KHz frequency. The experiment was performed at room temperature. The C-V response of fabricated MOS capacitor sensor is shown in fig. 3.

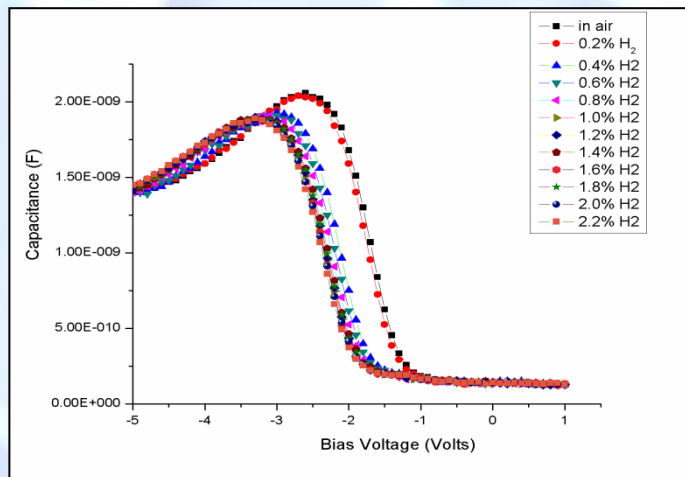


Fig.3. C-V response of Pt gate MOS sensor at various concentration of H₂ at room temperature at f=200 KHz.

The whole C-V curve shifts towards the more negative side of the voltage axis as concentration of the Hydrogen gas is increased. It can be observed that as the concentration of Hydrogen gas increases capacitance decreases and the sensitivity of the sensor increases. The decrease in capacitance continues till saturation comes. The variation of sensitivity of the sensor with bias voltage for various concentrations of hydrogen is shown in fig 3. The sensitivity is defined as

$$\text{Sensitivity (s) \%} = \frac{\Delta C \times 100}{C}$$

Where C is the capacitance in air, ΔC is the change in capacitance at a certain gas concentration.

Lundstrom and Shivaraman et al have attributed this shift in C-V corresponds to the change in flat band voltage to creation of dipole layer due to adsorbed hydrogen at Pd/SiO₂ interface. It has been proposed that when catalytic gate (Pd, Pt etc.) MOS structure is exposed to Hydrogen, the Hydrogen molecules are first dissociated into atoms due to catalytic behavior of Pd/Pt and then these atoms are adsorbed on the metal surface. Subsequently some of the hydrogen atoms diffuse through the metal film and are adsorbed onto the metal/insulator interface. These atoms are polarized and give rise to the dipole layer. The presence of the dipole layer yields an effective work function change of Platinum. Due to more porous structure of Pt film, results in high polarization of SiO₂ layer and give rise to dipole layer which effectively changes the work function of Pt film. Hence, the device performance is improved (i.e. high sensitivity and low response recovery time).

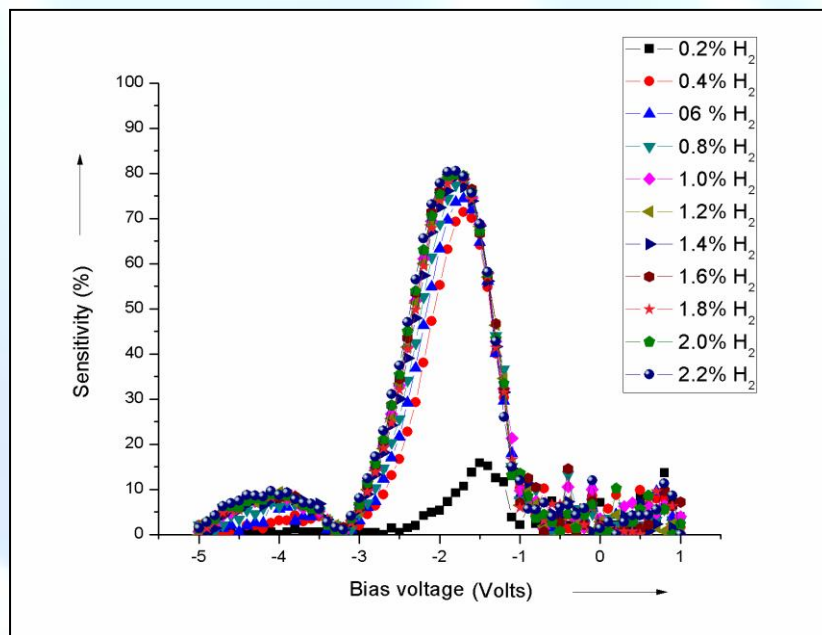


Fig.4. Sensitivity vs Bias voltage for various concentrations of hydrogen at room temperature at f=200 KHz

Conclusion

It is concluded that Pt gate MOS capacitor sensor with porous gate structure shows high sensitivity to Hydrogen (80.5%). It is believed that due to more porosity in the metallic gate (Pt) high polarization of SiO₂ occurs which gives rise to the formation of strong dipole layer at metal/insulator interface, the porous gate structure results in the change of surface state density. When we expose the MOS sensor to Hydrogen gas in an ambient atmosphere of air, it reacts with oxygen atoms on the interface and a decrease in the concentration of negatively charged ions takes place. This results decrease in surface state density and hence a shift in C-V characteristics which ultimately leads to increase in sensitivity.

FACULTY ACHIEVEMENTS

PhD

- ✓ Dr. Ramendra Singh Associate Prof. of ECE Department has successfully completed his PhD from Dr. Ram Manohar Lohia Avadh University, Faizabad (U.P) in 2016. His Research Field was **“Analog & Digital Electronics”**.
- ✓ Dr. Pawan Kumar Verma Associate Prof. of ECE Department has successfully completed his PHD from MNIT, Allahabad, on the topic **“A Novel Hybrid-MAC Protocol for Massive Access Control in Machine-to-Machine Communications”**.
- ✓ Dr. Vinod Chaudhary, Associate Prof. of ECE in convocation at IIT, BHU Varanasi.
- ✓ His PhD topic was **“Gridded gate Pt/Sio₂/Si MOS sensor for hydrogen and hydrogen containing gases”**.



- ✓ *Dr. Puneet Chandra Srivastava, Professor of ECE (Dean 2nd shift) in convocation at Uttarakhand Technical University, Dehradun.*
- ✓ *His topic was **“Performance of turbo coded pulse position modulation for optical communication”**.*



Special Appreciation

*It is highly appreciable that **Mr. Abhinav Bansal** Assistant Professor has donated almost hundreds of good engineering and other titles of various distinguished authors / publications books to the EC departmental library. This will certainly be helpful to the students visiting the same.*

STUDENT FRAME

SATELLITE

BY: Ashish Tyagi

EC-2nd Year

Satellites are objects in space that orbit planets. These are the natural satellites like the moon and man-made satellites that humans launch into space like the ones that provide television and telephone services.

In the 1950's, both the United States and Soviet Union decided to try rocketing subjects into space that could be used as sky monitoring devices or may be as weapons. The very first satellite that propelled into space by humans was the Russian made Sputnik 1, launched in 1957. Today there are thousands of satellites circling Earth.

Satellites fly high in the sky so they can see large areas of Earth at one time satellites also have a clear view of Space, which help to predict shape and size of Earth, climate of Earth etc.

In 1962, the first communication satellite, Telstar was launched. Satellite communicates by using radio waves to send signals to the antennas of the Earth. The antennas then capture these signals and process the information coming from these signals.

Recently, China has launched "hack proof" quantum communications satellite named Micius. The satellite uses quantum technology. It weighs 631kgs, expected to orbit roughly 500kms above Earth's surface for the next two years, according to Chinese state media.

China is the first country to launch satellite of this type and it should give the country a key advantage in the global security race.

For now, quantum technology development as a priority in its most recent five year plan leading the change could also translate to future economic benefits for the world'.

PLACEMENT NEWS

Following students of ECE department have been placed in different companies.

1. **Shubhangi Shankar, RKGIT Ghaziabad**
Company – (i) **Q.A InfoTech**
(ii) **Emicon**
2. **Akash Kumar Choudhary, RKGIT Ghaziabad**
Company – **SMT Pvt. Ltd.**
3. **Nishtha Rai, RKGIT Ghaziabad**
Company - **SMT Pvt. Ltd.**
4. **Ruchir Srivastava, RKGIT Ghaziabad**
Company – **Balarka Technologies India Pvt. Ltd.**
5. **Shalini Pandey, RKGIT Ghaziabad**
Company - **Balarka Technologies India Pvt. Ltd**
6. **Sharad Tripathi, RKGIT Ghaziabad**
Company – **Balarka Technologies India Pvt. Ltd.**
7. **Nidhi Gupta, RKGIT Ghaziabad**
Company - **Balarka Technologies India Pvt. Ltd.**
8. **Shyam Narayan Gupta, RKGIT Ghaziabad**
Company - **Balarka Technologies India Pvt. Ltd.**
9. **Sonangi Shankar, RKGIT Ghaziabad**
Company – **Emicon**
10. **Ishita Saini, RKGIT Ghaziabad**
Company - **CapitalVia Global Research Limited**
11. **Aniket Kumar, RKGIT Ghaziabad**
Company - **CapitalVia Global Research Limited**

Students Achievement

➤ **AKTU English Debate Competition-Winner:**

Shashank Bindal(ECE 3rd Year)

➤ **Team Siliconians–Winner**

SCROLLS Paper Presentation Competition held at AKGEC:

1) Shashank Bindal(ECE 3rd year)

2) Naman Singh(ECE 3rd year)

3) Rajan Mishra(ECE 3rd year)

➤ **Microprocessor Coding Competition Organized by IEEE in ABES College-Second Runner Up:**

1) Shubham Gupta(ECE 3rd year)

2) Shubham Kumar Masoun (ECE 3rd year)

➤ **Technical Quiz organized by IEEE in ABES College-Second Runner Up:**

1) Piyush Giri (ECE 3rd year)

2) Vinay Kumar Yadav (ECE 3rd year)

ALUMNI SPEAK

1. Name: *VERNIKA MISHRA*

2. Batch: *2012-2016*

3. Current job profile: *Recruited as a software engineer in Mphasis. She is preparing for higher studies.*



4. About the Faculty and the stature of study in RKGIT:

Faculty members of RKGIT are quite capable for inspiring the young engineers. Besides this, I would say gratitude comes for those who sacrifice their time to make your life better...all the faculties that I have been through never denied for any guidance that I needed, I venerate them.

The course of study followed is well up to the mark...and also you are motivated for various technical competitive exams too.

5. Any particular faculty which had left a deep impact on you (from RKGIT)

Well there are many who motivated me in quite different ways. It was Mr. Vinay Kakkar Sir who taught us Electrical Engineering in our 2nd semester. His extraordinary teachings and pure determination towards the subject is something that is indelible...and the deep respect that I have for Ms. Lata Kurrain Ma'am is inexpressible.

6. What was the highlight of your college experience? Is there something that will stand out; something that you will always remember?

These 4 years were the golden years of my life...I grew up as an individual, got beautiful friends for life and learned to work under pressure and I believe these are the key factors for success in today's world. B'day parties at Nescafe, small road trips, late night sessions ending up with stupid conclusions, jamming sessions in CRC(for

vocals), preparations for fest, are some of the memories that I will always cherish.

7. About your Hostel life and friends in RKGIT.

One should have experience of hostel, once in their lives because there you learn to make family of friends, get involved with people and their emotions. True friends are the people who are there for you unconditionally, they always guide you in each path of life .Getting such sanguine people for life is one of the most fortunate thing that happened to me in RKGIT.

8. What do you like & dislike most about RKGIT?

Besides, academics RKGIT provides you a platform where you can focus on your nonacademic activities as well, there are various groups that take charge for it. The whole system is impartial and you are free to express your views or share your problems with any of the faculties or the administration team. A restriction imposed on girls due to the undisciplined behavior of boys was that one thing that was a peeve for me.

10. One thing which RKGIT taught you

In the itinerary of these four years I was taken through a varied range of experience comprising of thrill and joy , it all prepared me to face the adversities that will come in my way. It made me self reliant, more patient, strong and taught me to remember it's not the end of the road.

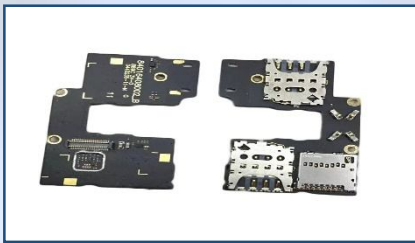
14. Any message to your juniors.

Well being a technical student I would say your success is directly proportional to your hard work. Never give up on your dreams. If you are rejected today you are definitely meant to be successful tomorrow. Aim high and respect humanity.

15. Any Suggestions

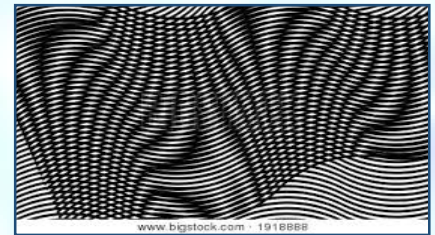
Not any suggestions as such but I would definitely like to see my college soar high above.

COROLLARY



Junctor In a crossbar system, a circuit that bridges frames of a switching unit and terminates in a switching device on each frame.

Moire In a television or facsimile picture, an effect produced by the convergence of straight lines. When the lines are nearly parallel to the scanning lines, the converging lines appear irregular.

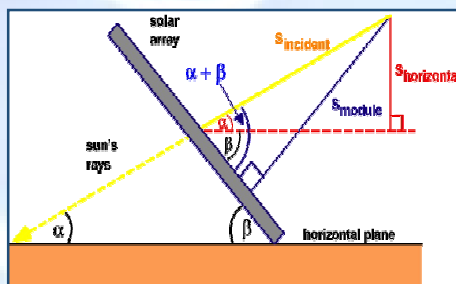
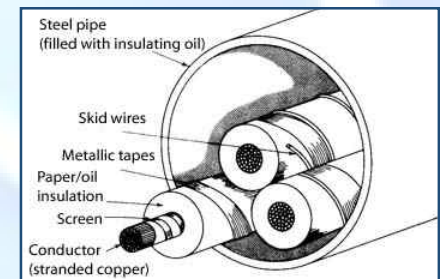


Clamp-on Magnetic (Ferrous) Noise Filters



Noise filter A filter designed to suppress noise that would otherwise enter an electronic circuit (e.g., a power-line noise filter).

Oil-filled Cable whose insulation is impregnated with oil that can be maintained at a constant pressure.



Radiation angle The horizontal or vertical angle at which electromagnetic waves are radiated from an antenna. Measured between the central axis of the main lobe and the horizon.

UPCOMING NCR EVENTS

EVENTS	DATE	WEBSITE	VENUE
ISETE-Recent Innovations in Electrical, Electronics, Computer, Information, Communication and Mechanical Engineering – ICRIEECICME-2016	Nov 30 th 2016	http://isete.org/2016Conference/NewDelhi/ICRIEEECICME19/	New Delhi
IISF-2016,NPL	7 th – 11 th Dec 2016	http://scienceindiafest.org/	New Delhi
International Conference on Computer Science , Electronics and Communication Engineering(ICCECE-16)	Dec 18 th 2016	http://iraj.co.in	Delhi
India Smart Grid Forum (ISGW-2017)	20 th -22 nd Jan 2017	http://festpav.com/view/userview/www.isgw.in	Delhi
Tarangana	4 th Feb 2017	http://www.taarangana.com	IGTU,New Delhi.
National Conference On "Advancement in Microwave and Photonic Devices for Electronic Communication Systems"	9 th -11 th Feb 2017	http://rkgit.edu.in	RKGIT Ghaziabad
VIGYANAM-2017 (A Technical Paper Presentation Competition)	23 rd to 25 th Feb 2017	http://rkgit.edu.in/vigyanam/VI GYANAM-2017.pdf	RKGIT Ghaziabad

Technical Overview:

Within the last decade, the field of microwave & photonics has attracted growing interest worldwide particularly in communication and measurement.

Microwave photonic is an innovative multi- and interdisciplinary field combining and transferring different technologies. Among various other benefits, it enables engineers to implement new functions in microwave systems.

Theme of the Conference:

This conference is organized to provide a vibrant platform to bring together scientists, researchers, educators, students, practitioners and technocrats from across academia, government and industry to interact and exchange useful ideas, and impart guidelines on technical, research & developments around the world. The impact and application of technology on diverse fields have generated interest worldwide. The aim of this conference is to bridge the gap between industry and academics. The microwave photonics technical area is concerned with interactions between the optical and the microwave portions of the electromagnetic spectrum. The eminent speakers from defence laboratory of Govt. of India, leading research organizations and academic institutions have been invited, who will present new and innovative ideas and models about the recent advancement in Microwave and Photonics.

About Raj Kumar Goel Institute of Technology:



RKGIT since its establishment in 2000 has been striving hard to provide the best engineering education to its students through an optimal infrastructure with well equipped modern labs and well qualified dedicated faculty members. RKGIT is steadily striding forward in its quest of establishing itself among the top engineering institutions in India.

The vision of the college is to continuously excel and enliven the engineering, teaching and create awareness about upcoming technologies and provide platform to budding technical students for achieving their rightful place in the scientific and engineering community.

RKGIT endeavors to provide industry and entrepreneurship relevant education and training to its well-crafted practical training programs for the student in different disciplines.

National Conference

On

"Advancement in Microwave and Photonic Devices for Electronic Communication Systems"

(AMPDECS-2017)

February 9-11, 2017

Organized by

Department of Electronics and
Communication Engineering

Raj Kumar Goel Institute of Technology
Ghaziabad



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Dr. S. K. Raghuvanshi, IIT(ISM), Dhanbad
Dr. Manoj K. Meshram, IIT(BHU), Varanasi

Key Note Speakers:

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Prof. Animesh Biswas, IIT, Kanpur
Prof. Dharmendra Singh, IIT Roorkee
Dr. Alok Jain, SSPL, Scientist G, DRDO, Delhi
Prof. P. K. Singhal, MITS, Gwalior

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Call for Papers:

Prospective authors are invited to submit their full paper via e-mail at rkgitconference.ece@gmail.com. The instruction for authors in the proceeding:

- Original paper based on analytical or experimental work.
- The authors must follow IEEE formatting instruction.
- The total length of the paper must not exceed 5 pages. Paper must be in PDF format.

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Important Dates

Paper Submission Deadline	20 Dec 2016
Notification for Acceptance	05 Jan 2017
Camera Ready Paper	15 Jan 2017

Registration Form

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Title of the paper (if presenting):
.....
Place:
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Signature of Head of Institution/ Dean/HOD with seal

Registration fees: Rs. 1000/-

Venue
Seminar Hall, D Block
Raj Kumar Goel Institute of Technology,
Ghaziabad

Time: 9:30 AM – 5:00 PM

For further information, please contact:
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Ms. Anamika Gupta, ECE Dept
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BRAIN QUIZ

1. An Auto-transformer (which has only one winding) may be used as a _____?

- ✓ Both Step-Up and Step-Down Transformer
- ✓ Step-Up Transformer
- ✓ Step-Down Transformer
- ✓ None of these

2. Which of the following memories uses a MOSFET and a capacitor as its memory cell?

- ✓ ROM
- ✓ DRAM
- ✓ SRAM
- ✓ DROM

3. What is the current gain for a common-base configuration where $I_E = 4.2 \text{ mA}$ and $I_C = 4.0 \text{ mA}$?

- ✓ 1.05
- ✓ 16.80
- ✓ 0.95
- ✓ 0.20

4. A diode for which you can change the reverse bias, and thus vary the capacitance is called

- ✓ Varactor diode
- ✓ Tunnel Diode
- ✓ Zener Diode
- ✓ Switching Diode

Contact us and mail your answer at
ecemagazine.rkgit@gmail.com



<http://m.facebook.com/udghosh.eneewsletter?ref=bookmars>

Photo courtesy-Mr. Kuldeep Tyagi