AUGUST 2021 - NOVEMBER 2021

UDGHOSH

The Voice Of ECE Department

VOLUME-7

ISSUE-5&6

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DR. PUNEET C. SRIVASTAVA
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DR. R.K. YADAV
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MEMBER

GARGI VERMA
MEMBER

CONTENTS

VISION OF THE DEPARTMENT

To develop the Department into a full fledged Center of learning in various field of Electronics and Communication Engineering keeping in view the latest development in world.

MISSION OF THE DEPARTMENT

M1: To educate the students in Contemporary Technologies in Electronics and Communication Engineering.

M2: To educate the students in Electronics and Communication Engineering to meet the Industrial needs.

M3: To educate the students in Electronics and Communication Engineering to meet the Societal needs.

FACULTY DEVELOPMENT PROGRAMME

One week Faculty Development Programme was organized by the department from 24th August 2021 to 30th August 2021. Nine eminent experts were invited from various parts of India to share their wisdom and vast experience on the topic.

Dr. R.K. Yadav, HOD ECE delivered the opening remarks; he shared valuable insights on the topic and motivated the audience for their active participation. Dr. DR Somashekar, Director RKGIT, addressed the audience present followed by Dr. Vikesh Kumar, Director Academics, Dr. Laxman Prasad Group Advisor, RKGIT. Mr. Akshat goel, Vice Chairman, RKGIT graced the occasion with motivational words. Prof. Vineet Kansal, Vice chancellor, A.K.T.U. delivered closing remark; he highlighted the importance and relevance of the topic in the current scenario. Dr. Pavan Kumar Shukla , Convener, officially announced opening of online FDP. The Co- Conveners were Ms. Richa Gupta and Mr. Kunal Lala.

Day-1
24th (August, 2021)

Session-1	Session-2
Prof. Preetam Kumar (Associate Professor, IIT Patna)	Prof. Mahesh P Abegaonkar (Associate Professor, IIT, Delhi)
Time:-10:45 a.m. to 12 p.m.	Time:- 2:00pm. To 3:30 p.m.
Topic: 5G Challenges and enabling	Topic: Applications of Metamaterials in Antennas

Day-2

25th August, 2021

Session-1
Dr. Sanjeev Raghuvanshi (Associate Professor, IIT ISM Dhanbad)
Time: - 11:00a.m. to 12:30 p.m.
Topic:- Advancement of optical fibre technology for high speed communication

Session-2
Dr. Nandeep Goel (Assistant Professor, Punjab University)
Time:- 2:00 p.m. to 3:30 p.m.
Topic:- Chirp multiplexing for image transformation using linear canonical transform

Day-3
26th August, 2021

Session-1
Dr. Ghanshyam Singh (Professor, University of Johannesburg)
Time:- 12:30 p.m. to 2:00 p.m.
Topic:- Next Generation Communication Technology for Healthcare
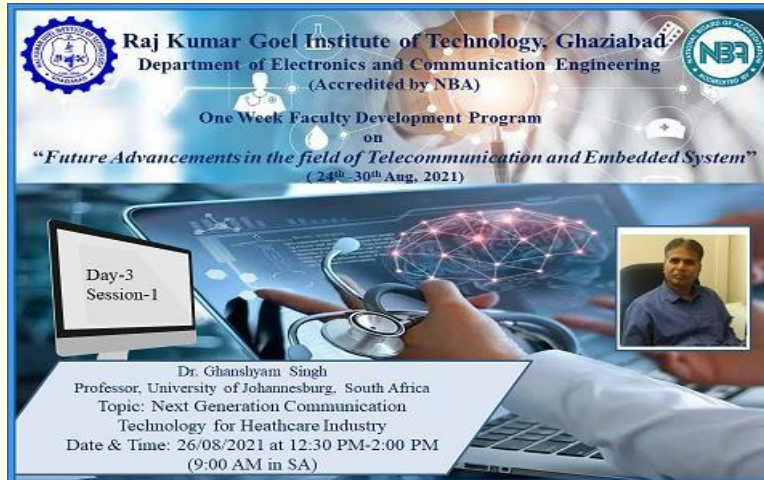
Day-4
27th August, 2021

Session-1
Dr. Rajveer Singh Yaduvanshi
Time: - 10:00 a.m. to 11:30 a.m.
Topic:- DRA design and Applications

Session-2
Dr.Hemant Kumar Mondal (Assistant Professor, NIT Durgpur)
Time:- 2:00 p.m. to 3:30 p.m.
Topic: VLSI Chip design: RTL to GDSII

Day -5
28th August, 2021

Session-1
Dr. Vijay M. Wadhai (Principal, D.Y. College of Engineering Akrudi, Pune)
Time:- 10:00 a.m. to 11:30 a.m.
Topic: AI enabled IOT for better health
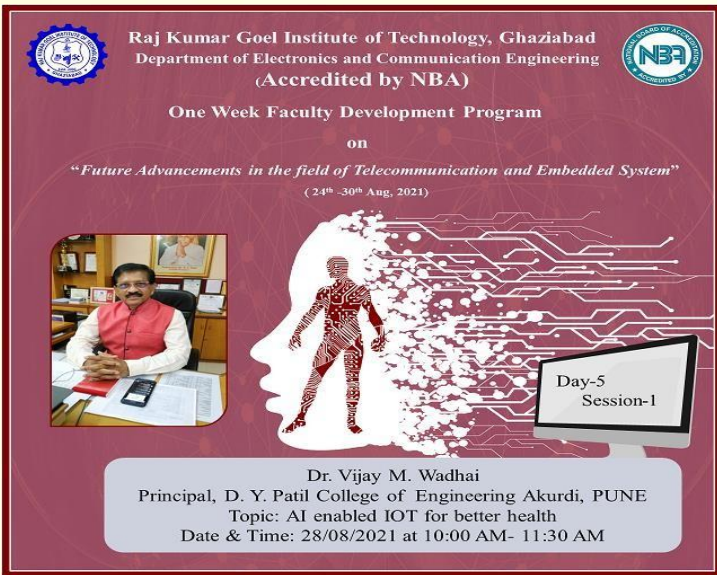
Session-2
Dr. Sanjeevi Kumar Padmanaban (Professor, Arhus University, Denmark)
Time:- 12:30 p.m. to 2:00 p.m.
Topic: Power Electronics and Renewable Energy system

Successful completion of session -1 of day -1

STAFF DEVELOPMENT PROGRAMME

Department of ECE organized an in house Staff Development Program on Microsoft Excel and Word with hands on session from 4th August 2021 to 6th August 2021 for all Lab Technicians. The faculty resource persons for the FDP were Mr. Anuj Kumar, Mr. Rajneesh Patel and Mr. Ajit Singh Rathor. The SDP was very beneficial for the lab technicians. The coordinators of the SDP were Ms. Charu Tyagi and Ms. Farah Naz.
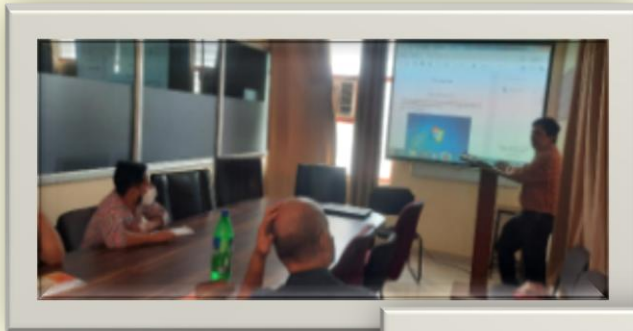
BREAK THROUGH IN VLSI

An interactive session of the entire pass out students of Batch 2021, who were placed in core Electronic VLSI companies was organised on 13th August, 2021. All the students shared their views, experiences & journey of learning & doing projects related to various fields of VLSI.

All the students of ECE branch attended the session and asked several questions to the senior pass out students. The students found this session very beneficial and requested to conduct more such events in future.

VALUE ADDED COURSE

Department of Electronics and Communication Engineering is currently running a VALUE ADDED COURSE for B.tech (ALL STREAMS) 2nd , 3rd & 4th year students.
Classes will be held on every Saturday starting from 13th November, 2021 (6 Weeks Program)

Topics are: 1. MATLAB and Simulink
2. IOT and its EMBEDDED application
3. Verilog for Design and Verification

Faculty experts are:
Mr. Vaibhav Sharma for MATLAB and SIMULINK
Mr. Sandeep Bhatia for IOT & its embedded application
Mr. Manish kumar Srivastava for Verilog for design and verification.

SHINING STARS OF THE DEPARTDMENT

ECE-4th Year SEC-A

S.No.	Roll No.	Name	%
1	1703331055	KRATI GUPTA	90.96%
2	1703331037	DISHA SRIVASTAVA	89.90%
3	1703331012	AKSHAT MITRA	87.93%
4	1703331016	ANANYA SHARAN	84.52%
5	1703340095	SACHIN PATEL	84.25%

ECE-4th Year SEC-B

S.No.	Roll No.	Name	%
1	1703331121	VIPUL KUMAR UPADHYAY	87.62%
2	1703331123	VISHAL	86.98%
3	1703331066	NAMAMI PATAIRIYA	86.89%
4	1703331075	PRAKHAR VARSHNEY	85.60%
5	1703331068	NIKITA UPADHYAY	83.26%

ECE-4th Year SEC-C

S.No.	Roll No.	Name	%
1	1703331020	ANMOL KUKREJA	91.85%
2	1703331110	SHREYA SONI	87.76%
3	1703331079	PRATIBHA KUMARI	86.66%
4	1703331065	MRIGA KHANNA	84.70%
5	1703331116	UTKARSH VERMA	84.52%

ECE-3rd Year SEC-A

S.No.	Roll No.	Name	%
1	1803331048	ISHA SAXENA	88.60%
2	1803331033	AYUSH PANDEY	87.03%
3	1803331042	HARSHIT GUPTA	84.12%
4	1803331052	JYOTSNA TRIPATHI	83.78%
5	1803331054	M S KIRTANA	83.45%

ECE-3rd Year SEC-B

S.No.	Roll No.	Name	%
1	1803331059	MEGHA AGRAWAL	83.78%
2	1803331079	RIYA TOMAR	83.45%
3	1803331057	MANSI	81.61%
4	1803331106	VIKAS KUMAR DUBEY	80.88%
5	1803331063	NIDHI SINGH	80.19%

ECE-2nd Year SEC-A

S.No.	Roll No.	Name	%
1	1900330310007	ADARSH DIXIT	85.66%
2	1900330310014	AMATYA MANGALAM DUBEY	81.35%
3	1900330310005	ABHISHEK SINGH	81.27%
4	1900330310029	HIMANSHU NEGI	80.73%
5	1900330310028	HARSH ANAND	80.32%

ECE-2nd Year SEC-B

S.No.	Roll No.	Name	%
1	1900330310081	VINAYAK DHYANI	85.90%
2	1900330310078	VANSHIKA AGGARWAL	85.62%
3	1900330310082	VINEET SAINI	84.67%
4	1900330310055	SAKSHI AWASTHI	83.60%
5	1900330310061	SHASHANK SRIVASTAVA	81.43%

ECE-1st Year SEC-A

S.No.	Roll No.	Name	%
1	2000330310021	PRASHANT SINGH	85.22%
2	2000330310028	SUDHANSHU	84.89%
3	2000330310024	SAHZAD ANSARI	83.44%
4	2000330310007	AMAN KUMAR SHAHU	82.67%
5	2000330310020	KAUSHAR ALI ANSARI	82.11%

AKTU RANK HOLDERS

Anmol Kukreja (2ⁿᵈ Rank)

Krati Gupta (5th Rank)

BONVOYAGE' 21(ONLINE FAREWELL PARTY)

A farewell is one of the important events of a student's life as it symbolizes the closure of one's educational journey from a college, school or workplace. It is one of the best ways to convey a warm goodbye to your friends, classmates, juniors and most importantly your teachers. Thus, it is the time to build memories that the students will cherish for their entire life. Keeping this in mind and helping students to create unforgettable memories at the college campus, the department of ECE organized the Farewell Party for the final year students on 14/08/2022. The event was a grand affair where both teachers and students experienced unlimited enjoyment with a variety of fun activities.

The following titles were distributed:

"Star of the Department" - Ms. Anmol Kukreja
"Ms. Scholar" -Ms.Namami Pateria
"Mr. Scholar" -Mr.Vipul Upadhyay
 Mr. Student of the Year" - Mr.Rishabh Ladhani
"Mr. All In One"- Mr. Shiv Prakash Singh
"Ms. All In One"- Ms. Mansi Singh
"Mr. Achiever"- Mr.Akshat Mitra
"Mr. Attire"- Mr. Abhishek Dixit
"Mr. Photogenic"- Mr. Ayush Pandey
"Ms. Achiever"- Ms. Krati Gupta
"Ms. Attire" -Ms. Harshita Singh
"Ms. Photogenic" -Ms. Dharti Gupta
"Ms. Student of the Year"- Ms. Nikita Upadhyay
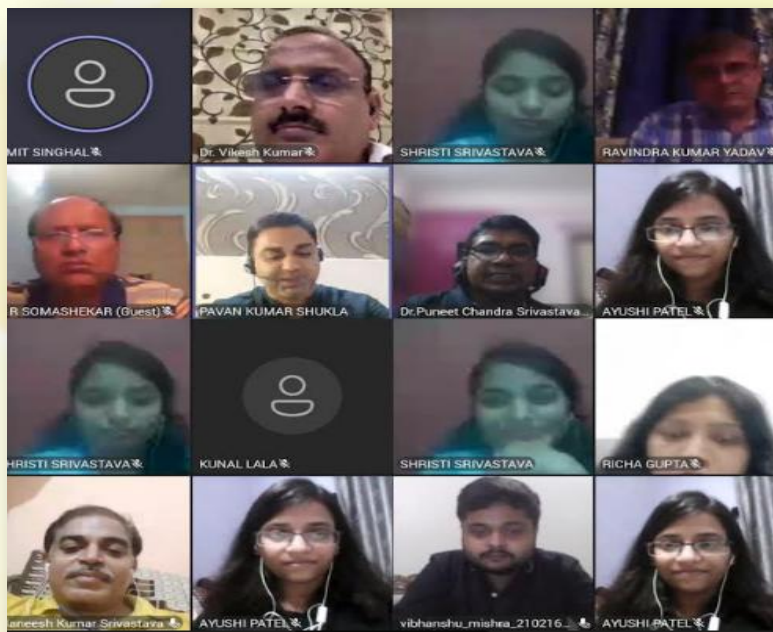
FACULTY ACHIEVEMENTS

1. Dr. Himani Mittal published a patent titled "Smart Nutrient Tracking Casserole" on 01/10/2021.

2. Dr. Himani Mittal got a patent granted titled "Selfie Mask Smart ATM Vending Machine" on 05/11/2021.

3. Mr. Ajit Singh Rathor attended a Faculty Development Program on Future Wireless Technologies held from 15-20 November 2021 at Ajay Kumar Garg Engineering College, Ghaziabad, Uttar Pradesh, India.

4. Ms. Farah Naz attended a Faculty Development Program on Future Wireless Technologies held from 15-20 November 2021 at Ajay Kumar Garg Engineering College, Ghaziabad, Uttar Pradesh, India.

5. Mr. Kunal Lala attended 14 days Online Faculty Development Program on "a2z of NBA Accreditation Process" during August 24th -September 09th, 2021 organized by Department of Electronics & Communication Engineering under the aegis of Internal Quality Assurance Cell (IQAC), Inderprastha Engineering College, Ghaziabad.

6. Mr. Kunal Lala attended 14 days Online Faculty Development Program on "a2z of NBA Accreditation Process" during August 24th -September 09th, 2021 organized by Department of Electronics & Communication Engineering under the aegis of Internal Quality Assurance Cell (IQAC), Inderprastha Engineering College, Ghaziabad.

7. Ms. Richa Gupta attended 14 days Online Faculty Development Program on "a2z of NBA Accreditation Process" during August 24th -September 09th, 2021 organized by Department of Electronics & Communication Engineering under the aegis of Internal Quality Assurance Cell (IQAC), Inderprastha Engineering College, Ghaziabad.

8. Dr. RK Yadav attended 14 days Online Faculty Development Program on "a2z of NBA Accreditation Process" during August 24th -September 09th, 2021 organized by Department of Electronics & Communication Engineering under the aegis of Internal Quality Assurance Cell (IQAC), Inderprastha Engineering College, Ghaziabad.

9. Dr RK Yadav participated in five days Innternational Online FDP on :Insights of writing research paper held on 18-22 November 2021 organised by Khandelwal Vaish Girls Institute of Technology , Jaipur.

PLACEMENTS

S. No.	ROLL NO.	NAME OF THE STUDENT	BRANCH	NAME OF COMPANY	PACKAGE OFFERED (LAKH PER ANNUM)
1	1803331024	ANUSHKA MISHRA	ECE	NUCLEUS SOFTWARE	4.25
2	1803331037	DEEPANSHI SRIVASTAVA	ECE	NUCLEUS SOFTWARE	4.25
3	1803331004	ABHISHT BINDAL	ECE	NUCLEUS SOFTWARE	4.25
4	1803331100	SWARNIMA VERMA	ECE	NUCLEUS SOFTWARE	4.25
5	1803331103	UJJAWAL PANDEY	ECE	NUCLEUS SOFTWARE	4.25
6	1803331063	NIDHI SINGH	ECE	WIPRO	3.5
7	1803331076	RICHA SHARMA	ECE	WIPRO	3.5
8	1803331025	ARPIT VERMA	ECE	WIPRO	3.5
9	1803331059	MEGHA AGRAWAL	ECE	WIPRO	3.5
10	1803331031	AVINASH TRIVEDI	ECE	WIPRO	3.5
11	1803331093	SHRISTI SRIVASTAVA	ECE	WIPRO	3.5
12	1803331091	SHIVENDRA PRATAP	ECE	WIPRO	3.5
13	1803331005	ADITYA SRIVASTAVA	ECE	WIPRO	3.5
14	1803331109	VINAY TIWARI	ECE	WIPRO	3.5
15	1803331062	NAVENDU SHARMA	ECE	WIPRO	3.5
16	1803331071	PRIYANSHU	ECE	WIPRO	3.5
17	1803331054	MAREPALLI SRAVANA KIRTANA	ECE	WIPRO	3.5
18	1803331024	ANUSHKA MISHRA	ECE	WIPRO	3.5
19	1803331048	ISHA SAXENA	ECE	WIPRO	3.5
20	1803331073	PUSHPENDRA SRIVASTAVA	ECE	WIPRO	3.5
21	1803331042	HARSHIT GUPTA	ECE	WIPRO	3.5
22	1803331100	SWARNIMA VERMA	ECE	WIPRO	3.5
23	1803331018	ANKIT GUPTA	ECE	WIPRO	3.5
24	1803331035	CHHAVI RATHORE	ECE	WIPRO	3.5
25	1803331004	ABHISHT BINDAL	ECE	WIPRO	3.5
26	1803331092	SHREYASH SAHU	ECE	WIPRO	3.5
27	1803331093	SHRISTI SRIVASTAVA	ECE	TCS	3.36
28	1803331078	RIDDHI SINGH	ECE	TCS	3.36
29	1803331039	GARGI VERMA	ECE	TCS	3.36
30	1803331037	DEEPANSHI SRIVASTAVA	ECE	TCS	3.36
31	1803331063	NIDHI SINGH	ECE	TCS	3.36
32	1803331054	M.S.KIRTANA	ECE	TCS	3.36

| 33	1803331034	AYUSHI PATEL	ECE	TCS	3.36
34	1803331057	MANSI	ECE	TCS	3.36
35	1803331032	AYUSH MISHRA	ECE	APPINVENTIV TECHNOLGIES	3.6 - 4.2
36	1803331062	NAVENDU SHARMA	ECE	APPINVENTIV TECHNOLGIES	3.6 - 4.2
37	1803331080	SACHIN YADAV	ECE	APPINVENTIV TECHNOLGIES	3.6 - 4.2
38	1803331061	MOHD. WASIQ	ECE	APPINVENTIV TECHNOLGIES	3.6 - 4.2
39	1803331008	AKASH GUPTA	ECE	APISERO	5.1
40	1803331032	AYUSH MISHRA	ECE	APISERO	5.1
41	1803331048	ISHA SAXENA	ECE	TCS	3.36
42	1803331115	UTKARSH KUMAR	ECE	TCS	3.36
43	1803331106	VIKAS KUMAR DUBEY	ECE	BIRLASOFT LTD.	3.6
44	1803331092	SHREYASH SAHU	ECE	OUTSOURCING SERVICES PVT LTD.	3
45	1803331038	DIVYANSHU SINGH	ECE	CREDEX TECHNOLOGY	5
46	1803331033	AYUSH PANDEY	ECE	ALGOWORKS TECHNOLOGIES	3

FACULTY TECHNICAL CORNER

SENSOR TECHNOLOGY

Our need for new knowledge is growing and this knowledge helps provide you with more options for making decisions. Reacting faster allows processes to become more effective and more efficient. So, you achieve more with less effort. We always strive toward more efficiency.

Previously, we did not focus on measurement, but on cost savings. This is now possible due to the transition we have made from a world with primarily mechanical measurement principles to a digital era with sensor technology. This has directly led to us expecting more from ourselves and our machines.

Digitization has had a positive impact on, amongst other things, costs, quality, and production lead time. We want to produce more, more quickly. This provides us with more time to engage in other activities. And this is why the demand for intelligent sensors is growing.
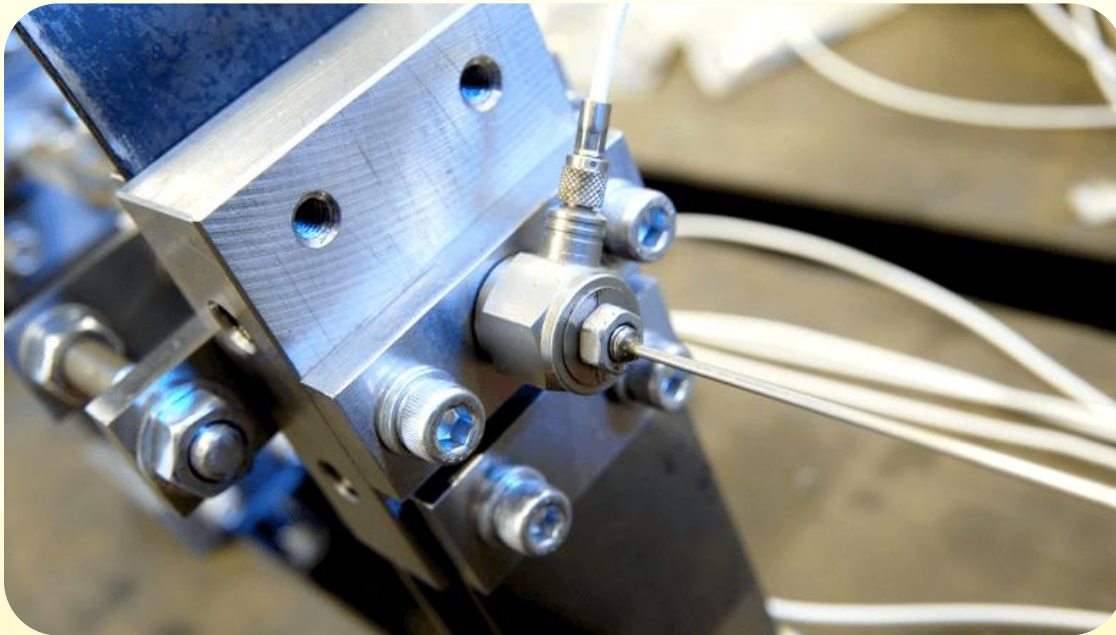
The demand for smart sensors continues to grow because we increasingly want to measure more.

The most important development objectives for sensor technology
Sensor technology developers, suppliers, and customers all have different interests that you must consider. For example, costs, quality, and lead time. For example, this influences the decision to accept lesser quality because it is cheaper and may be deliverable the next day.

2022 sensor trends in future applications
Smarter, more accurate, quicker, wireless, safer, self-learning, smaller, standardized, etc. Many sensor developments are underway that involve all of these points. As an (R&D) Engineer in the coming years, you can expect it to be more challenging to keep up to date on all developments and

possibilities. You can use this list of 21 intelligent sensor applications to fine tune your expectations to your projects.

Sensor innovation and increasingly quicker development of sensor fusion at the chip level will lead to:

1. Predictive maintenance for machines and devices will become increasingly more efficient, easier, cheaper, and improve uptime. In the future, maintenance will rely on sensors instead of being carried out according to a needs-based timetable.
2. Safety will also improve because unsafe situation will be easily predicted.
3. Autonomous sensor technology will become possible. Wireless connections over long distances with an integrated power supply.
4. Sensors will be self-learning over the entire lifespan without maintenance, modifications, or calibration.
5. The possibilities and areas of application for robot technology will increase significantly.
6. Old and new technologies at the chip level are arising. More will be possible with sensor fusion because transmitters, receivers, and printed circuit boards are increasingly smaller.
7. More complex detection will be possible… technologies will counterbalance each other.
8. Sensors will increasingly provide a better understanding of our behavior. This will lead us to set other requirements with respect to air quality, travel, automobile maintenance, lifestyle, insurance, energy consumption, etc.
9. Fully automated management of livestock is possible. Precision agriculture will also be within reach.
10. Farmer's yields will improve so much that they will be better able to compete with high quality and crop yields. Sensors will be increasingly used to research soil quality, climate, crops, diseases, plagues, and weeds.
11. Farmer's (production) costs will be lower and working conditions will improve in the fields and stalls.
12. New lidar systems will equip autonomous vehicles with real 'vision'.
13. Soccer balls will be fitted with sensor technology.
14. We will use synthetic sensors.
15. Cities will become more intelligent and we will be able to 'complete' the ecosystem. For example, flood management, air quality, blue alga, parking, safe playgrounds, monumental trees will survive, and soil conditions will improve.
16. Components will take over the role of human senses. Data will become more reliable and collected continuously. Data will be converted into useful information using intelligent software and algorithms.
17. We will increasingly make more decisions ourselves based on sensor information that we ourselves collect. We will no longer leave things to chance.
18. We will encounter sensor technology in every aspect of our lives.

19. We will use more sensors to improve the environment, improve energy management, and build green office buildings.
20. Sensors will be well-integrated measurement modules that are easy to use and can be rapidly adjusted to the application being used.
21. Sensors will become real 'smart sensors': intelligent measurement units that self-monitor, transmit status diagnoses to the operating system, and create a reliable network of measurement and calibration data.

The added value of a sensor expert allows them to, amongst other things, select the very best and sensor technology for your needs. The expert focuses on integrated sensor solutions that will improve your machine.

Towards a successful implementation of sensor technology!
It can be a real challenge to successfully implement new sensor technologies. You want to make your machinery more intelligent. How do you use data to improve efficiency? And, as an engineer, what will you encounter in the future?

You can read the answers in our free e-book that also has practical examples of very common sensor issues and solutions. Challenge yourself and download it right now.
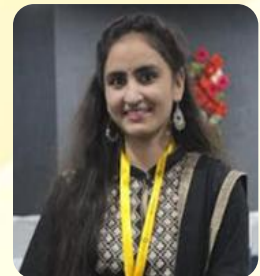
Ms. Farah Naz
A.P, ECE

STUDENT TECHNICAL CORNER

The Internet of Things: Why Now?

The internet of things (Iot) is the concept of connecting everyday devices to the internet allowing the devices send or receive data.For industrial automation, consider the following people scenario. Workers in a factory that are continually talking simultaneously would result in disorder. With IoT, devices can constantly report their status to a receiving computer that uses information to optimize decision making. This is a great idea that makes sense, but why has it taken so long?

Once a dream, Iot home automation is slowly but steadily becoming a part of daily lives around the world. In fact, it is believed that the global market for smart home automation will reach $239,897.8million by 2030.

Home automation cases for:
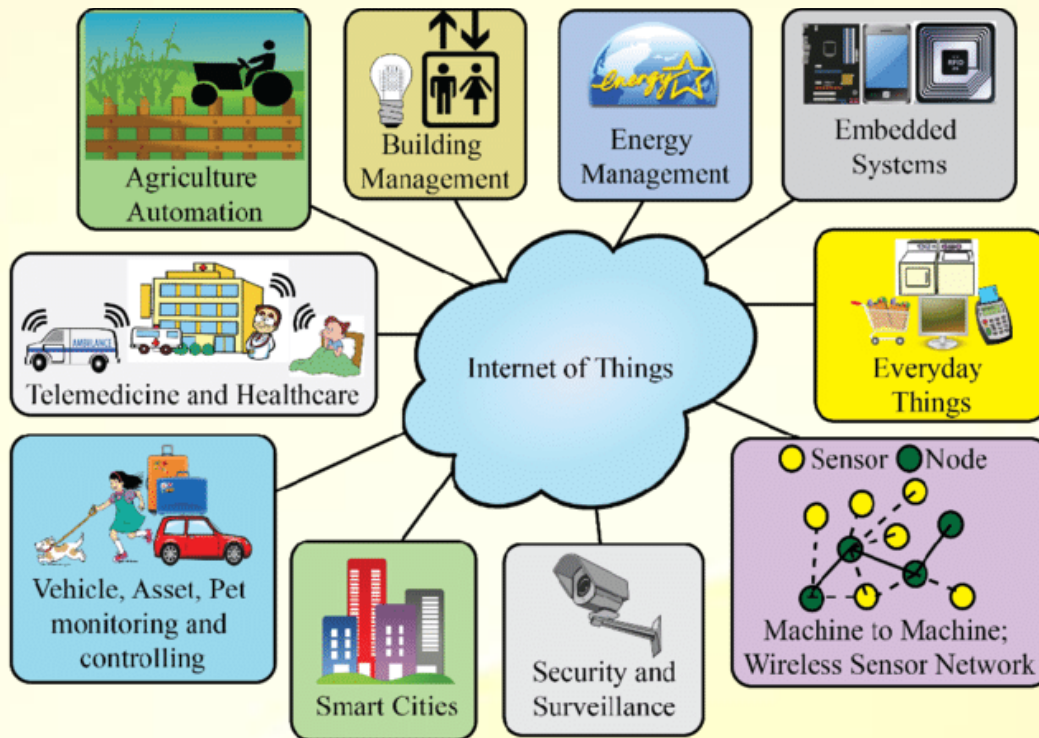
1.Lighting
2.Doors
3.Windows
4.Thermostat
5.Gardens

Before proceeding any further, let's take a closer look at IoT. 'Internet of Things' is an umbrella term used for all technologies that enable the connection of a device to the Internet.

Such systems depend on the collection of data. The data is then used for monitoring, controlling and transferring information to other devices via the internet. This allows specific actions to be automatically activated whenever certain situations arise. In a simple example, consider a smart kettle. The kettle can be programmed to automatically turn off once it reaches a specific temperature. It might also send a notification to the user on the same.

Now apply the same concept to the entire home and all the devices present. That is a smart home powered by IoT. Instead of manually going up to the device and taking action, those actions can be taken at the press of a button. These days, most smart IoT home automation devices allow you to control them via an app are even via voice commands.

Here are some possible scenarios that we may see in future.

Lighting:-These days, smart lighting is all the rage. They can be scheduled to turn on/off and change their intensity. However, in future, it is possible for this to be taken a step further. With IoT enabled across the home, the lights can respond to other actions you take.

For example, the lights can respond to your home cinema. They can turn off or dim whenever you start watching a movie. Going further, they may even react to the type of movie. For example, they can turn off completely if the lights sense that you are watching a horror movie, giving you the proper atmosphere.

Doors:-In the future, doors can become smarter as well. Imagine them opening only when you enter or close. This may be made possible via a smart device or facial recognition. This can be taken to the next step by getting the rest of the house take actions in tandem with your entry.

For example, the lights can turn on as soon you as enter through the door. Alternatively, if you are leaving, they can turn off.

Windows:-Windows can become smarter as well. Imagine them automatically open the shutters when the sun rises and close at sunset. You may even be able to program them to close automatically when it rains. Consider the previous example of a home movie. Your curtains can lower whenever you are watching a movie.

Thermostat:-These days, you can control your home thermostat remotely via apps. In the future, you may not even need to do that. The thermostat will be able to recognize if you are nearing your home. It will then check the room and external temperature and set the right one for you. It may even recognize when you are taking certain actions and adjust accordingly such as when you are showering or exercising.

Gardens:-Even your gardens can become smarter in the future with IoT. You will be able to place IoT sensors in the garden. If these sensors detect dryness in the soil, they can trigger the irrigation system. Robotic lawnmowers can be automatically deployed if the grass exceeds a certain height.

Conclusion

Of course, all of these are not going to happen overnight. There are a few barriers to widespread adoption of IoT-enabled smart homes, the primary of which is cost. Privacy is another major concern. Then there are the current technological limitations that create difficulties in a seamless connection between multipole IoT devices.

Sudhanshu
ECE 2nd Year

ALUMNI SPEAK

College life was a perfect blend of joy & hardships. My experience with RKGIT was wonderful. This institution taught me a fundamental thing that life is unpredictable so live the moment and grab the opportunity that comes to your door. All the valuable teachings & life lessons that my faculties imparted makes me to grow in my career. I will always be thankful for RKGIT to make me what I wanted to be.

Er. Abhishek Shukla

Batch: 2001-2005

BRAIN TEASERS

1. Are the squares inside the blue and yellow squares all the same color?
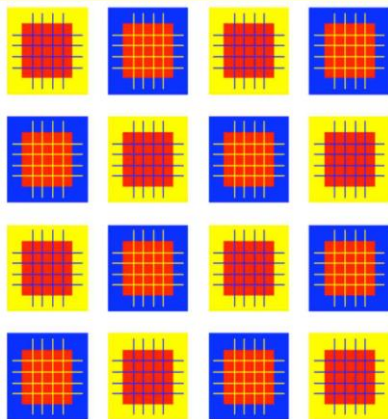
2. The following brain teaser has been shared more than 3 million times on Facebook. It seems to be easy for some people but difficult for others. Which group are you in?

    $6 + 4 = 210$
    $9 + 2 = 711$
    $8 + 5 = 313$
    $5 + 2 = 37$
    $7 + 6 = 113$
    $9 + 8 = 117$
    $10 + 6 = 416$
    $15 + 3 = 1218$
    $?? + ?? = 123$

3. A passenger train leaves New York for Boston traveling at the speed of 80 km/hr. In half an hour a freight train leaves Boston for New York traveling at the speed of 60 km/hr. Which train will be further from New York when they meet?

4. Let's start with a simple color blind test. Unless you are color blind, you should see 58 (upper left), 18 (upper right), E (lower left) and 17 (lower right).
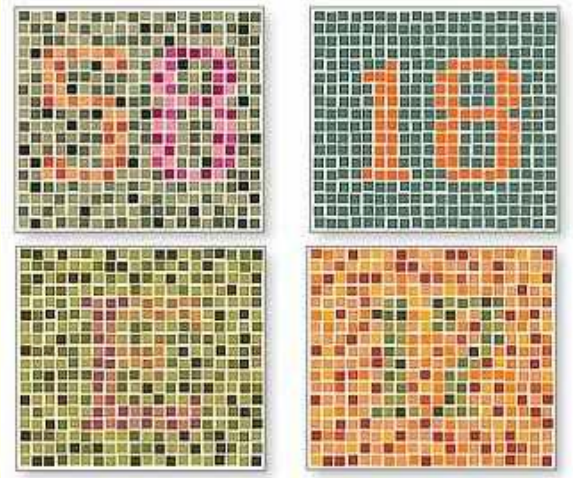
5. An Arab sheikh tells his two sons to race their camels to a distant city to see who will inherit his fortune. The one whose camel is slower wins. After wandering aimlessly for days, the brothers ask a wise man for guidance. Upon receiving the advice, they jump on the camels and race to the city as fast as they can. What did the wise man say to them?