

Report on

Lecture Series on Recent trends in Electronics and Communication (RTEC-21) 20th -24th Sept 2021

1. **Title of the activity:** Recent trends in Electronics and Communication (RTEC-21)

2. **Activity Detail :**

Objective:

The Lecture series aimed to provide a forum to exchange views, ideas & the latest innovations in the field of Electronics & Communication Engineering. The Lecture series offer learning of emerging trends & challenges in the field of Electronics & Communication. It improves participant's ability in carrying out research, testing & consultancy in the area of Electronics & Communication Engineering. Participants learned about the recent trends in Power Electronics, the applications of Artificial Intelligence in Electronics & Robotics and also in the field of Nano-electronics & Optical Electronics.

3. **Approval Letter of Event**



Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

Department of Electronics and Communication Engineering

Date: 16 Aug 2021

Note

Following proposals of online Conference/ FDP/ workshops are being submitted for your kind approval.

S.N.	Proposed Title:	Event Type	Name of Coordinator(s)	Tentative dates	Duration	Budget
1	International conference on Advancements in Nano and Communication Technologies	International Conference	Prof. Mukesh Arora/ Dr. PK Jain	24-26 February 2022	3 days	25000
2	Signal processing using Python & MATLAB	Workshop	Dr. Monika Mathur, Ms. Kiran Rathi, Mr. Harshul Nigam, Dr. Shubhi Jain,	17-21 January 2022	1 week	30000
3	Emerging Tools and Techniques in VLSI, MEMS and MOEMS	Workshop	Ms. Manju Choudhary, Namrata Saxena, Dr. Rakhsar Zafar, Dr. Swati Arora	22-27 November, 2021	1 week	30000
4	Student Workshop on IoT with Machine Learning & Artificial Intelligence	Workshop	Dr. Praveen Kumar Jain, Dr. Rakhsar Zafar, Mr. Ankit Agarwal, Ms. Pooja Choudhary	7-17 February 2022	2 week	56000
5	Application of VLSI in artificial intelligence	FDP	Mr. Vikas Pathak, Neera Jain, Rahul Pandey, Abhinandan Jain	13-18 December, 2021	1 week	30000
6	NBA Accreditation and Teaching - Learning Process in Engineering	FDP	Suman Sharma, Rajni Idwal, Kiran Rathi, Mamta Jain	15-19 November, 2021	1 week	30000
7	Guest Lecture Series	-	-	Monthly	-	-


Principal, SKIT


Prof. Mukesh Arora 16.8.21
HoD, ECE

4. **Event Brochure**


**SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN,
JAIPUR**


Lecture Series on RECENT TRENDS IN ELECTRONICS & COMMUNICATION ENGINEERING (RTECE - 2021) September 20 - 24, 2021


Shri Surja Ram Meel
 Chairman
 SKIT, Jaipur


Shri Jaipal Meel
 Director
 SKIT, Jaipur


Prof (Dr.) S. L. Surana
 Director (Academics)
 SKIT, Jaipur


Ms. Rachna Meel
 Registrar
 SKIT, Jaipur

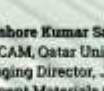

Prof (Dr.) Ramesh Kumar Pachar
 Principal
 SKIT, Jaipur


Dr. Mithlesh Kumar
 Prof., Dept. of ECE,
 RTU, Kota
(Chief Guest)

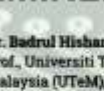

Dr. Mukesh Arora
 HOD, Dept. of ECE
 SKIT, Jaipur

EMINENT EXPERTS

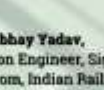

Dr. Kishore Kumar Sadasivuni
 Prof., CAM, Qatar Univ, Qatar &
 Managing Director, Journal of
 Emergent Materials (Springer)


Dr. Badrul Hisham Ahmad
 Prof., Universiti Teknikal
 Malaysia (UTeM), Malaysia

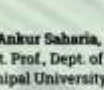

Dr. Sudhir Gupta
 Ex Scientist, BARC,
 Mumbai


Mr. S. N. Vijayvergiya
 Dean (R&D)- SKIT,
 Director (Technology)-GENUS,
 Jaipur


Mr. Abhay Yadav
 Section Engineer, Signal &
 Telecom, Indian Railway


Dr. Ankur Saharia
 Asst. Prof., Dept. of ECE,
 Manipal University, Jaipur


Dr. Renu Kumawat
 Assoc. Prof., Dept. of ECE,
 Manipal University,
 Jaipur


Mr. Ankur Vijay
 Design Verification
 Engineer 2, Xilinx
 India Ltd., Hyderabad

COORDINATORS : Ms. Kiran Rathi, (Assoc. Prof., ECE), Mr. Vikas Pathak, (Assoc. Prof., ECE)
CO-COORDINATORS : Mr. Neeraj Jain, (Asst. Prof., ECE), Mr. Abhinandan Jain, (Asst. Prof., ECE)

5. Schedule of the event

Brief Proceeding of each day of the activity

S. No.	Date	Time	Speaker Name
		10:00am-10:30am	Inaugural session
1.	20/9/21 (Day1)	10:30am-12:00pm	Dr. Mithlesh Kumar, Professor, Department of Electronics & Comm. Engineering, Rajasthan Technical University (RTU), Kota
2.		12:30pm-2:00pm	Dr. Renu Kumawat, Associate Professor, Department of Electronics & Comm. Engineering, Manipal University, Jaipur
3.	21/9/21 (Day2)	10:30am-12:00pm	Dr. Kishore Kumar Sadasivuni, Professor, Center for Advanced Materials, Qatar University, Qatar & Managing Director, Journal of Emergent Materials (Springer)
4.		12:30pm-2:00pm	Mr. Ankur Vijay, Design Verification Engineer 2, Xilinx India Ltd., Hyderabad, India
5.	22/9/20 (Day3)	10:30am-12:00pm	Dr. Badrul Hisham Ahmad, Professor, Universiti Teknikal Malaysia (UTeM), Malaysia
6.		12:30pm-2:00pm	Mr. Abhay Yadav, Section Engineer, Signal & Telecom, Indian Railway

7.	23/9/20 (Day4)	10:30am-12:00pm	Dr. Ankur Saharia, Assistant Professor, Department of Electronics & Comm. Engineering, Manipal University, Jaipur
8.		12:30pm-2:00pm	Mr. S. N. Vijayvergiya, Dean (R&D)-SKIT, Director (Technology), GENUS, Jaipur
9.	24/9/20 (Day5)	10:30am-12:00 pm	Tarun Gupta, CGM (R&D), Genus Innovation Limited, Jaipur
10.		12:30pm-2:00pm	Dr. Sudhir Gupta, Ex Scientist, BARC, Mumbai
		2:15 pm – 2:30pm	Valedictory

6. List of Resource Persons

Resource person

S. No.	Name of Expert	Organization
1	Dr. Mithilesh Kumar,	Professor, Department of Electronics & Comm. Engineering, Rajasthan Technical University
2	Dr. Renu Kumawat,	Associate Professor, Department of Electronics & Comm. Engineering, Manipal University, Jaipur
3	Dr. Kishore Kumar Sadasivuni,	Professor, Center for Advanced Materials, Qatar University, Qatar & Managing Director, Journal of Emergent Materials (Springer)
4	Mr. Ankur Vijay,	Design Verification Engineer 2, Xilinx India Ltd., Hyderabad, India
5	Dr. Badrul Hisham Ahmad,	Professor, Universiti Teknikal Malaysia (UTeM), Malaysia
6	Mr. Abhay Yadav,	Section Engineer, Signal & Telecom, Indian Railway
7	Dr. Ankur Saharia,	Assistant Professor, Department of Electronics & Comm. Engineering, Manipal University, Jaipur
8	Mr. S. N. Vijayvergiya,	Dean (R&D)-SKIT, Director (Technology), GENUS, Jaipur
9	Tarun Gupta,	CGM (R&D), Genus Innovation Limited, Jaipur
10	Dr. Sudhir Gupta,	Ex Scientist, BARC, Mumbai

7. Participants List**Participants List**

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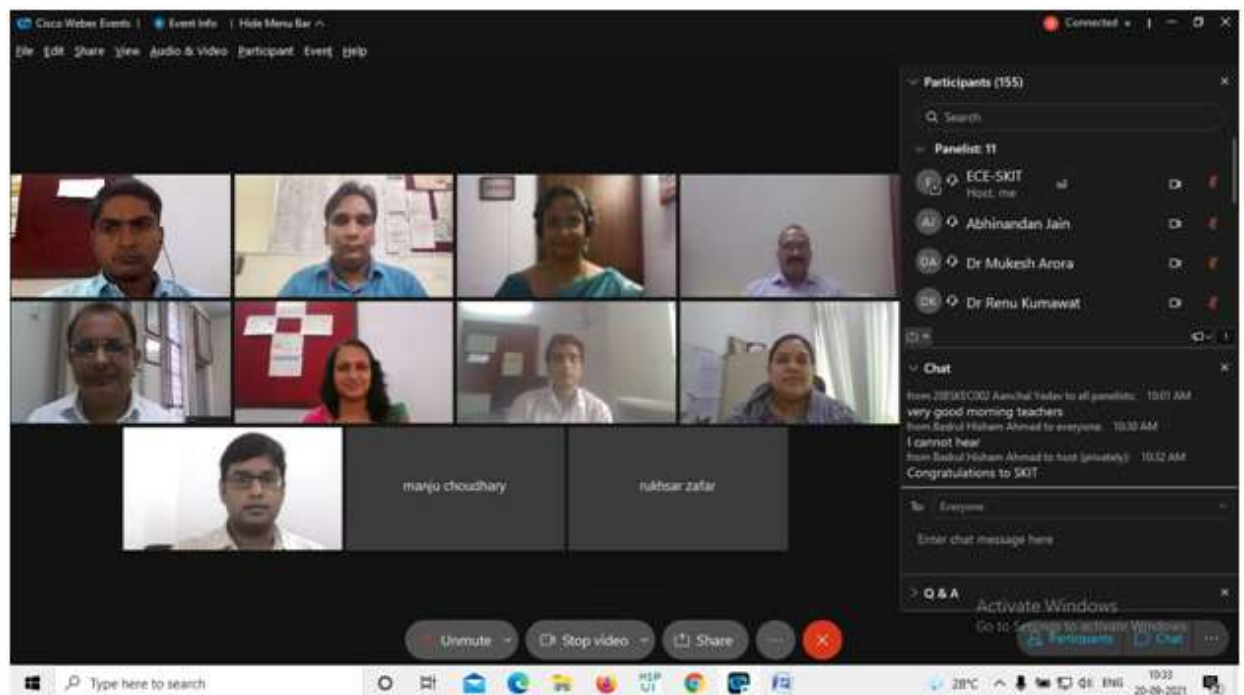
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8. Screenshots of Event



Zoom Webex Events

Event Info Connected

Participants (63)

Search

Participants (7)

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SD Sudhir Gupta

KR Kiran Rami

RJ neeraj jain

PV Prof. SatyaN Vijayvergiya

RZ r z

Attendees (55 total, 0 displayed)

View all attendees...

Unmute Start video

Participants Chat

Viewing Sudhir Gupta's...

Input Layer Hidden Layer Output Layer

Variable - #1

Variable - #2

Variable - #3

Variable - #4

Output

An example of a Feed-forward Neural Network with one hidden layer (with 3 neurons)

Deep NN

Zoom Webex Events

Event Info Connected

Speaking: ankur saharis

Why Optical Interconnects ?

Reducing energy and increasing capacity

Approach: Saving energy by eliminating the circuits in interconnect links.

- Quantum impedance conversion
- Avoiding time-multiplexing in short links 10-100 fJ/bit total energy instead of 1-10 pJ/bit

Power Requirements: Optical v/s Electrical Interconnects

On-chip power dissipation

Interconnection length

Terminated transmission line

Electrical

Optical (10-μm x 10-μm device)

100x less power/line

Minimum on-chip power dissipation at 1Gbps
(Ref: R. A. Nordin et al.)

Speaking: ankur saharis
Class MBox Events
Event Info Connected

Why Optical Interconnects ?

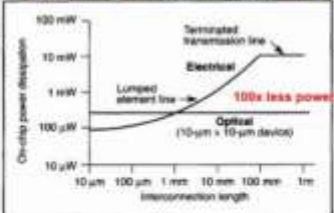
Reducing energy and increasing capacity

Approach: Saving energy by eliminating the circuits in interconnect links.

- Quantum impedance conversion
- Avoiding time-multiplexing in short links 10–100 fJ/bit total energy instead of 1–10 pJ/bit



**Power Requirements:
Optical v/s Electrical Interconnects**



Minimum on-chip power dissipation at 1Gbps
(Ref: R. A. Nordin et al.)

Class MBox Events
Event Info Connected

Manisha Modi

Host

Sudhir Gupta

Host

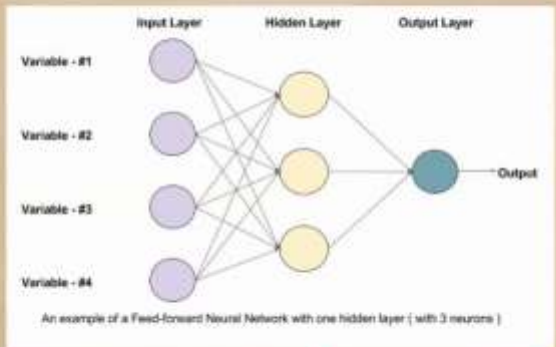
ECE-SKIT

Host

12

Layout

Viewing Sudhir Gupta's...



An example of a Feed-forward Neural Network with one hidden layer (with 3 neurons)

DeepNN

Participants (63)

Search

Participants (7)

- MV Q Manisha Modi
- E Q ECE-SKIT
- SG Q Sudhir Gupta
- KR Q Kiran Rathi
- NJ Q neeraj jain
- IPV Q Prof. SatysN Vijayvergiya
- RZ Q r z

Attendees (55 total, 0 displayed)

[View all attendees...](#)

Unmute

Start video

More

Participants

Chat

Manisha Modi

Host

Tarun Gupta

Host

ECE-SKIT

Host

Kiran Rathi

Host

SOLAR PLANT

WORLD CLASS INFRASTRUCTURE FACILITIES

Participants (81)

Search

Participants (7)

Manisha Modi

Host

ECE-SKIT

Host

Tarun Gupta

Host

Kiran Rathi

Host

neeraj jain

Host

ProfSatyen Vijayvergiya

Host

r z

Host

Attendees (74 total, 0 displayed)

View all attendees

Unmute

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Participants

Chat

Speaking: Tarun Gupta

Viewing Tarun Gupta's a...

1. Definition :

Power electronics deals with the processing of high voltages and currents to deliver power that supports a variety of needs. Power supply in one form is processed using power semiconductor switches and control mechanisms to another form, supplying a regulated and controlled power.

It is the technology of conversion, control and conditioning of electric power into desired electrical output .

Participants (68)

Search

Participants (7)

Manisha Modi

Host

ECE-SKIT

Host

Tarun Gupta

Host

Kiran Rathi

Host

neeraj jain

Host

ProfSatyen Vijayvergiya

Host

r z

Host

Attendees (61 total, 0 displayed)

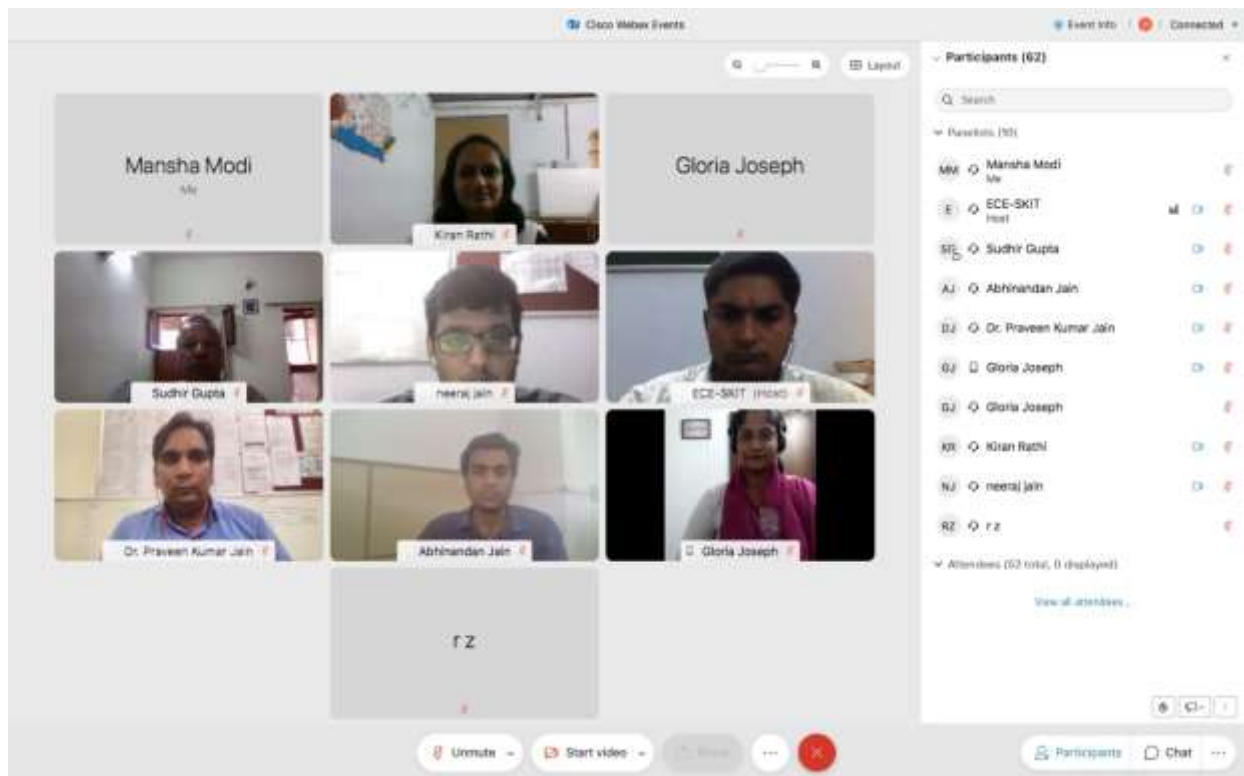
View all attendees

Unmute

Start video

Participants

Chat



9. Copy of Certificate



10. Media Coverage

एसकेआईटी मे रिसेंट ट्रेड इन इलेक्ट्रॉनिक्स एंड कम्युनिकेशन टेक्नोलॉजी पर पांच दिवसीय लेकर सीरीज की शुरुआत

P3 Police Public Politics

जयपुर । जगतपुरा स्थित स्वामी केशवानंद इंस्टीट्यूट ऑफ टेक्नोलॉजी, मैनेजमेंट एंड ग्रामोथान में इलेक्ट्रॉनिक्स एवं कम्युनिकेशन डिपार्टमेंट के द्वारा 'रिसेंट ट्रेड इन इलेक्ट्रॉनिक्स एंड कम्युनिकेशन टेक्नोलॉजी' पर पांच दिवसीय लेकर सीरीज की शुरुआत हुई। इस कार्यक्रम के मुख्य अतिथि प्रो. डॉ. मिथलेश कुमार (प्रो.आर. टी.यू.कोटा) एवं विशिष्ट अतिथि प्रो. बाबुल हिशाम बिन अहमद (यूनिवर्सिटी टेक्निकल मलेसिया) रहे।

कार्यक्रम की शुरुआत में इलेक्ट्रॉनिक्स एंड कम्युनिकेशन के विभागाध्यक्ष प्रो. मुकेश अरोड़ा ने सभी



अतिथियों का स्वागत किया तथा संस्था की उपस्थितियों से सभी गणमान्यों को परिचित कराया। इस कार्यक्रम की कोऑर्डिनेटर मिस किरण राठी ने सभी पार्टिसिपेंट्स से लेकर सीरीज का विस्तृत प्रारूप साझा किया। इनग्रेशन समारोह के अंत में डॉ.पी.के.जैन ने सभी आगंतुकों को धन्यवाद ज्ञापित किया। लेकर सीरीज के प्रथम दिन कुल दो सत्र संपन्न हुए। प्रथम सत्र में प्रोफेसर मिथलेश कुमार ने

इलेक्ट्रॉनिक्स एंड कम्युनिकेशन क्षेत्र में होने वाले नए अनुसंधान और प्रणालियों के बारे में बताया। उन्होंने बताया कि आज की शिक्षा प्रणाली में नए इन्फार्मेटिक्स व सॉफ्टवेयर जोड़े जा रहे हैं जो कि इंडस्ट्री व इंस्टीट्यूट के बीच में विद्यमान गैप को कम कर रहे हैं व साथ ही साथ यह शिक्षा प्रणाली छात्रों के लिए बेहतर रोजगार चुनने में मदद कर रही है। उन्होंने इलेक्ट्रॉनिक क्षेत्र में उपयोग होने वाले अत्याधुनिक

एंटीना के बारे में विस्तृत जानकारीयां दी तथा एंटीना डिजाइन की विभिन्न तकनीकियों के बारे में चर्चा की। द्वितीय सत्र में डॉ. रेणु कुमावत (एसोसिएट प्रोफेसर भाषापाल यूनिवर्सिटी जयपुर) ने मशीन लर्निंग तथा आर्टिफिशियल इंटेलिजेंस के इलेक्ट्रॉनिक्स सेक्टर में विभिन्न उपयोगों पर प्रकाश डाला तथा इस क्षेत्र में मौजूद अनुसंधान व रोजगार के संभावनाओं से अवगत कराया। इस कार्यक्रम के कोऑर्डिनेटर मिस किरण राठी, मि. विकास पाठक, मि.नौरज जैन तथा मि. अभिनंदन जैन रहे , तथा संचालन मिस ग्लोरिया जोसेफ ने किया। इस कार्यक्रम में कुल 170 छात्रों एवं फैकल्टीज ने भाग लिया।

11. Activity Detail :

a. Objective:

The Lecture series aimed to provide a forum to exchange views, ideas & the latest innovations in the field of Electronics & Communication Engineering. The Lecture series offer learning of emerging trends & challenges in the field of Electronics & Communication. It improves participant's ability in carrying out research, testing & consultancy in the area of Electronics & Communication Engineering. Participants learned about the recent trends in Power Electronics, the applications of Artificial Intelligence in Electronics & Robotics and also in the field of Nano-electronics & Optical Electronics.

b. Program detail:

Lecture Series on Recent trends in Electronics and Communication has been organized by ECE Deptt., Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur from 20th Sept 2021 to 24th Sept 2021. In this Lecture series 137 participants were there, including Rajasthan and out of Rajasthan. All participants are well connected through WebEx for the entire duration of the Lecture series.

The Lecture series was inaugurated on the 20th September 2021 by the Prof. Mithlesh Kumar, Professor, Department of Electronics & Comm. Engineering, Rajasthan Technical University (RTU), Kota.

A heartfelt welcome note and about the institute was given by Head of Department ECE, Dr. Mukesh Arora. The Coordinator of Lecture series Ms. Kiran Rathi elaborated about the Five day Lecture Series.

The Chief guest Prof. Mithlesh Kumar appreciated the active participation of SKIT in organising such events and also appreciated the new mode of the conduction of Lecture series

and talked about the importance of such type of programs for students and faculties.

In the first session of the first day Prof. Mithlesh Kumar, Professor, Department of Electronics & Comm. Engineering, Rajasthan Technical University (RTU), Kota delivered an expert talk on Recent Trends in MIC Antennas, latest type of antennas and different design technique of antennas. He explained about microstrip antenna criteria for substrate selection, CAD simulation characterization of antenna, antenna field region, radiation pattern, antenna gain and antenna type selection etc. He also explained about Testing of UWM antenna on human body and antenna design using machine learning and artificial neural network.

In the Second session of the First day is started with the expert talk of Dr. Renu Kumawat, Assoc. Prof., Dept. of Computer and communication, Manipal University, Jaipur delivered an expert talk on Application of Machine Learning & AI algorithms in the field of Electronics & Communication Engineering. She explained the supervised learning, unsupervised Learning and Reinforcement learning and its application in discover hidden patterns in data without the need of human intervention.

In the first session of the Second day, Prof. Kishore Kumar Sadasivuni, Center for Advanced Materials, Qatar University & Managing Director, Journal of Emergent Materials delivered an expert talk on Advanced colorimetric Sensors for different applications.

In the Second session of the Second day is started with the expert talk of Mr. Ankur Vijay, Design Verification Engineer, Xilinx India Ltd., Hyderabad on Latest Memory device. He shared his knowledge on the DRAM Memory & it's standards, DRAM Subsystem, DRAM standards/generations and Comparison between different DDR generations.

In the first session of the Third day Dr. Badrul Hisham Ahmad, Prof., Universiti Teknikal Ma-laysia (UTeM), Malaysia delivered an expert talk on Switchable Absorptive Bandstop to Bandpass. He introduced microwave filters and RF filter and its application in recent technology. He also explained about resonator theoretical absorptive bandstop filter with its practical working.

In the Second session of the Third day Mr. Abhay Yadav, Section Engineer, Signal & Telecom(Indian Railways) delivered an expert talk on Signaling System in Indian Railways. He discussed about Kinds of signals, position of signal, Calling-on signals, Shunt signals, Co-acting signals and Modernisation of Signaling System is proposed to be taken up on High Density Routes of Indian Railways.

In the first session of the Fourth day is started with the expert talk of Dr. Ankur Saharia, Asst. Prof., Dept. of ECE, Manipal University, Jaipur on Integrated Optics. He explained about optical technology and the reason of fast development in optical technology. He focused on different materials that can be used for designing of Optical Integrated Circuits like glass, polymers etc.

In the Second session of the Fourth day Mr. S. N. Vijayvergiya sir, Dean (R&D)- SKIT, Director (Technology)- GENUS, Jaipur on delivered an expert talk Industry 4.0.He described the growing trend towards automation and data exchange in technology and processes within the manufacturing industry.

In the First session of the Fifth day Mr. Tarun Gupta, CGM (R&D), Genus Innovation Limited, Jaipur delivered an expert talk on Industry trends in Power Electronics.

In the Second session of the Fifth day Dr. Sudhir Gupta, Ex Scientist, BARC, Mumbai delivered an expert talk on Promise of Machine learning.

Now finally we come to the end of the lecture series and it was very successful event with lot of learning for both student and faculty.

In the valedictory session Dr. Sudhir Gupta, Ex Scientist, BARC, Mumbai, Dr P. K. Jain(Deputy HOD ECE) and coordinator and co-coordinator of the event were present. Dr. Sudhir Gupta had appreciated the prominent speakers and experts of this program. He had congratulated the organizing team for successful conduction of this Lecture series. Dr. P. K Jain expressed his gratitude to the management of SKIT, and to the whole ECE department. Mr. Neeraj Jain, assistant professor, SKIT has a given brief summary of the events conducted in Lecture series. Ms. Kiran Rathi has expressed his vote of thanks to everyone involved in this event and appreciated the group effort of the whole organizing team.

c. Outcome:

The Outcome of the Lecture series is that participants learn the theoretical knowledge and practical exposure in the field of electronics and communication. It is also beneficial of researcher working in the different field of electronics and communication gain a good insight of new technologies and new research ideas related to it.

d. Type: National