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Volume-4

## EVALUATIVE REPORT

Department of Electronics and Communication  
Engineering

*for*

ASSESSMENT AND ACCREDITATION

*Submitted to*

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

BANGALORE



JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY  
NOIDA

17 September, 2015

# Evaluative Report of the Department

1. **Name of the Department:** Electronics and Communication Engineering

2. **Year of establishment:** 2001

3. **Is the Department part of a School/Faculty of the university?**

JIIT is a unitary University. It has departments that include Electronics and Communication Engineering Department and Jaypee Business School.

4. **Names of programmes offered (UG, PG, M. Phil., Ph. D., Integrated Masters; Integrated Ph. D., D. Sc., D. Litt, etc.)**

a) Ph. D.

b) M. Tech. (Electronics and Communication Engineering with specialisation in Communication Systems)

c) M. Tech. (Electronics and Communication Engineering with specialisation in Microelectronics Systems and Embedded Technology)

d) Dual Degree B. Tech.-M. Tech. (Electronics and Communication Engineering) [After UGC circular, July 2014, regarding standardisation of nomenclature of degrees, this program will run as Integrated M. Tech. (Electronics and Communication Engineering) w.e.f. 2015-16]

e) B. Tech. [Electronics and Communication Engineering (ECE)]

5. **Interdisciplinary programmes and departments involved:**

None. However, the department program curriculum provides courses from other departments namely: Computer Science Engineering & Information Technology (CSE & IT), Mathematics, Physics and Material Science and Engineering (PMSE), Biotechnology and Humanities and Social Sciences (HSS).

6. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

None. However, the department has an academic collaboration with University of Florida (UFL) through which final year B. Tech students can go for a semester long study at UFL, Gainesville, Florida, U.S.A.

**7. Details of programmes discontinued, if any, with reasons:**

None in last four years

**8. Examination System: Annual/Semester/Trimester/Choice Based Credit System**

Semester, along with choice based credit system

**9. Participation of the department in the courses offered by other departments**

The department offers following courses to other departments:

<b>Course Name</b>	<b>Beneficiary Department</b>
Electrical Circuit Analysis	CSE/IT, BIOTECH
Electrical Circuit Analysis Lab	CSE/IT, BIOTECH
Basic Electronic Devices and Circuits	CSE/IT, BIOTECH
Basic Electronics lab	CSE/IT, BIOTECH
Signals And Systems	CSE/IT
Signals And Systems Lab	CSE/IT
Digital Electronics	CSE/IT
Digital Electronics Lab	CSE/IT
Communication Systems	CSE/IT
Communication Systems Lab	CSE/IT
Information Theory and Applications	CSE/IT
Mobile Communications	CSE/IT
Optical Communication	CSE/IT
Digital Hardware Design	CSE/IT

**10. Number of teaching posts sanctioned, filled and actual (Professors/ Associate Professors/ Asst. Professors/ others)**

Positions	Sanctioned <sup>#</sup>	Filled	Actual (including CAS & MPS)
Professors	13	05	05
Associate Professors	24	01	01
Asst. Professors	68	57	57
Teaching Assistants*	-	-	19*

#JIIT follows flexible cadre structure like IITs; \*Full time Ph. D./ M. Tech. students.

**11. Faculty Profile with name, qualification, designation, area of specialization, experience and research under guidance**

Name	Qualification	Designation	Specialization	No. of Yrs of Exp.	No. of Ph. D. students guided in the last 4 years	No. of M. Tech students guided in the last 4 years
Hari Om Gupta	Ph. D., Univ. of Roorkee	Professor & Dir (Sec-128)	Power Systems & Systems Engineering	40	9 (Awarded) 7 (Ongoing)	NIL
Krishna Gopal	Ph. D., Kurushetra Univ.	Professor & Dean A&R	System Engineering	47	1 (Awarded) 4 (Ongoing)	NIL
R. C. Jain	Ph. D., Univ. of Alberta	Professor & HOD	Wireless Communication Systems	44	6 (Ongoing) 1 (Awarded)	6
A. B Bhattacharyya	Ph. D., IIT BHU Varanasi	Professor	VLSI Design	50+	2 (Ongoing)	4
Samir Dev Gupta	Ph. D., JIIT Noida	Professor	Antenna Design and Theory	35	3 (Ongoing)	12

Shweta Srivastava	Ph. D., IIT BHU Varanasi	Assoc. Professor	Microwave Engineering and Antennas	16	6 (Ongoing) 1 (Awarded)	8
Vikram Karwal	Ph. D., Univ. of North Carolina	Asstt. Professor	Signal processing	8	3 (Ongoing) 1 (Awarded)	5
Jitendra Mohan	Ph. D., UTU Dehradun	Asstt. Professor	Analog Signal Processing	9	1 (Ongoing)	NIL
Sajai Veer Singh	Ph. D., UTU Dehradun	Asstt. Professor	Analog Signal Processing	14	4 (Ongoing)	NIL
Manish Kumar	Ph. D., JIIT Noida	Asstt. Professor	VLSI	11	3 (Ongoing)	3
Vivek Kumar Dwivedi	Ph. D., JUIT Waknaghat	Asstt. Professor	Wireless Communication	10	2 (Ongoing)	4
Ashish Goel	Ph. D., JIIT Noida	Asstt. Professor	Wireless Communication	11	2 (Ongoing)	4
Vipin Balyan	Ph. D., JUIT Waknaghat	Asstt. Professor	Wireless Communication	8	1 (Ongoing)	1
Vijay Khare	Ph. D., IIT Delhi	Asstt. Professor	Biomedical Signal Processing	14	2 (Ongoing)	2
Richa Gupta	Ph. D., JIIT Noida	Asstt. Professor	Image Processing, Joint Source & Channel Coding	9.5	2 (Ongoing)	3
Megha Agarwal	Ph. D., IIT Roorkee	Asstt. Professor	Digital Image Processing	2.5	1 (Ongoing)	NIL
Vineet Khandelwal	Ph. D., JNU Delhi	Asstt. Professor	Wireless & Optical Communication, Image Processing	14	2 (Ongoing)	4
Abhinav Gupta	Ph.D., JNU Delhi	Astt. Professor	Statistical Signal Processing	11	1(Ongoing)	3
Jasmine Saini	Ph. D., JIIT Noida	Asstt. Professor	Microwave Tubes	10.5	None	2
Rajesh Kumar Dubey	Ph. D., IIT Delhi	Asstt. Professor	Digital Signal and Speech Processing	13	1 (Ongoing)	3
Alok Joshi	Ph. D., JUIT Waknaghat	Asstt. Professor	Communication Systems	13	NIL	NIL

Bhartendu Chaturvedi	Ph. D., AMU	Asstt. Professor	Analog Signal Processing	5	1 (Ongoing)	NIL
Anil Rose	Ph. D., NIT Jalandhar	Asstt. Professor	Wireless Sensor Networks, Soft Computing	10	2 (Ongoing)	6
Shamim Akhter	Ph. D., JIIT Noida	Asstt. Professor	Signal Processing for VLSI	12	NIL	4
Madhu Jain	Ph. D., IIT Delhi	Asstt. Professor	Signal Processing	11.5	NIL	1
Rahul Kaushik	M. Tech. Univ. of Allahabad	Asstt. Professor	Optical Communications	10	NIL	1
Atul Kumar Srivastava	M. Tech. Manipal Univ.	Asstt. Professor	VLSI CAD	14	NIL	7
Bhawna Gupta	M. Tech. AMU Aligarh	Asstt. Professor	Communication Systems	11	NIL	1
Smriti Bhatnagar	M. Tech. Univ. of Allahabad	Asstt. Professor	Digital Signal Processing	20	NIL	5
Pankaj Kumar Yadav	M. Tech. IT-BHU Varanasi	Asstt. Professor	Wireless Communication	14	NIL	5
Reema Buddhiraja	M. Tech. Thapar Univ., Patiala	Asstt. Professor	Microwave Tubes	10	NIL	2
Satyendra Kumar	M. Tech., IIT Roorkee	Asstt. Professor	VLSI Systems	12.5	NIL	2
Shruti Kalra	M. Tech. GGSIPIU Delhi	Asstt. Professor	CMOS Digital VLSI Design	8	NIL	5
Neetu Singh	M. Tech. JIIT Noida	Asstt. Professor	Signal Processing	7	NIL	4
Pushpendra Singh	M. Tech. IIT Kanpur	Asstt. Professor	Signal Processing	11	NIL	2
Tanuj Chauhan	M. Tech. Univ. of NSW	Asstt. Professor	MEMS, VLSI	5	NIL	4
Juhi Gupta	M. Tech. MDU Rohtak	Asstt. Professor	Wireless Communication	8	NIL	3
Saurabh Chaturvedi	M. Tech. GGSIPIU	Asstt. Professor	VLSI Design	8	NIL	2
Kirmender Singh	M. Tech. IIIT Noida	Asstt. Professor	Analog CMOS Design	10.5	NIL	4

Amit Singhal	M. Tech. IIT Delhi	Asstt. Professor	Communication Systems	5.5	NIL	NIL
B. Suresh	M. Tech. IIT Delhi	Asstt. Professor	Communication Systems	6	NIL	3
Kapil Dev Tyagi	M. Tech. IIT Delhi	Asstt. Professor	Signal Processing	8	NIL	NIL
Rakhi Tomar	M. Tech. IIIT Allahabad	Asstt. Professor	VLSI Design	4.5	NIL	NIL
Monika	M. Tech. NSIT Delhi	Asstt. Professor	Meta-Materials, Antenna	4	NIL	4
Raaziyah Shamim	M. Tech. AMU	Asstt. Professor	Communication Systems	3.5	NIL	NIL
Vinay Anand Tikkiwal	M.S. NTU Singapore	Asstt. Professor	Microelectronics	7	NIL	NIL
Priyanka Kwatra	M. Tech. IIT Delhi	Asstt. Professor	Wireless Sensor Network	2.5	NIL	NIL
Vishal Narain Saxena	M. Tech. IIT Roorkee	Asstt. Professor	Microwave Engineering	3.5	NIL	2
Shraddha Saxena	M. Tech. IIT Roorkee	Asstt. Professor	VLSI	5.5	NIL	3
Ruby Beniwal	M. Tech. IIT Roorkee	Asstt. Professor	Control System	5	NIL	NIL
Abhishek Khanna	M.E. BITS Pilani	Asstt. Professor	Communication Systems	2	NIL	NIL
Gaurav Verma	M. Tech. IIT Kh.	Asstt. Professor	Embedded Systems	10	NIL	4
Ankur Bhardwaj	M. Tech. NSIT Delhi	Asstt. Professor	VLSI and Embedded Systems	1.5	NIL	NIL
Abhishek Kashyap	M. Tech. IIT Delhi	Asstt. Professor	Communication Systems	3.5	NIL	NIL
Sumegha Yadav	M. Tech. NSIT Delhi	Asstt. Professor	Signal Processing	1.5	NIL	NIL
Anand Kumar	M. Tech. IITDM Jabalpur	Asstt. Professor	Microwaves and Antenna	1.5	NIL	NIL
Shivaji Tyagi	M. Tech. IIIT Noida	Asstt. Professor	Microelectronics, CMOS-MEMS	2.5	NIL	NIL
Sidhartha Sankar Rout	M. Tech. IIIT Delhi	Asstt. Professor	VLSI Design & Embedded Systems	3	NIL	NIL

Rajesh Singh Parmar	M. Tech. IIT Bombay	Asstt. Professor	Communication Systems	4	NIL	NIL
Jyoti Vyas	M. Tech. MNIT Allahabad	Asstt. Professor	Communication systems	3.5	NIL	NIL
Deeksha Chandola	M. Tech. IIIT Noida	Asstt. Professor	Microelectronics & Embedded Technology	1	NIL	NIL
Ritesh Sharma	M. Tech. IIT Bombay	Asstt. Professor	Control System	1	NIL	NIL
Baljit Kaur	M. Tech. NIT Kurukshetra	Asstt. Professor	VLSI Design	1	NIL	NIL

**12. List of senior Visiting Fellows, Adjunct faculty, Emeritus Professors:**

A B Bhattacharyya, Emeritus Professor

**13. Percentage of classes taken by temporary faculty programme - wise information:**

NIL

**14. Programme - wise Student Teacher Ratio**

UG: 22:1, PG: 12:1

**15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual: Technical Staff: Technicians for Lab**

	Sanctioned	Filled	Actual
Technical	15	15	15
Administrative	Centrally managed; shared by all departments		

**16. Research thrust areas as recognized by major funding agencies**

Following three thrust areas have been recognised:

- (i) Emerging Communication Technologies,
- (ii) Signal Processing, and
- (iii) Digital Systems and VLSI.

**(i) Emerging Communication Technologies:**

- There are four major components of a wireless communication



system: transmitter, receiver, communication channel and antenna. Work is going on in the following areas. One of the key technologies to meet the requirements of future 5G communication systems are expected to be met by Orthogonal Frequency Division Multiplexing (OFDM) and Multiple-Input–Multiple-Output (MIMO) systems.

- Improved algorithms for transmitters and receivers proposed to be used in 4G and 5G systems have been developed. Main thrust of the above work has been improving Transmitter and Receiver designs so that less power is required to be transmitted. This will reduce RFI to other users and thus also improve compatibility with other systems, and reduce biological hazard.
  - Improved antenna designs for air-borne applications and antennas based on metamaterials are given so that they can give required performance even with lesser received signal strength. Improved channel models are given. This also helps in design of optimum signal processing and modulation techniques at the transmitter. Theoretical work has also been done to improve efficiency and bandwidth of Travelling Wave Tube (TWT) and Gyro-TWTs used in satellite communication and electronic warfare. Microwave Integrated Circuit (MIC) design using Substrate Integrated Waveguide (SIW) technology is carried out. This technique provides low loss signal transmission. Emphasis is also put on smart antenna technology.
  - Wireless Sensor network design for different topologies and their optimization using numerical techniques is also carried out. Integration of WSN and UWB technology for remote sensing is also going on.
- (ii) **Signal Processing:**
- Signal processing is a highly dynamic and all pervading field. Work is in progress in the areas: Brain-computer interface, Digital image processing, speech processing and Video signal processing. In the Brain-computer interface developed for disabled, a signal from EEG is analysed and used to provide an alternative channel for disabled for communicating with the external world.
  - Speech processing algorithms for 4G and next generation mobile communication and voice over internet protocol (VOIP) services.

- Fast algorithms for real time signal and low order Digital IIR Filters with linear phase characteristics which will improve the quality of video communication.
- Work is also going on for designing new digital recursive filters with magnitude characteristics closed to ideal ones and linear phase response. The linear phase response makes them useful in various signal processing applications such as control, radar, sonar, communication, and medical.

**(iii) Digital Systems and VLSI:**

- In the area of Digital Systems, our approach has been more development oriented using commercial software. We have software suites like Mentor Graphics IC station, Cadence, Xilinx ISE 10.1, ATLAS, and Coventor. Our students get hands-on training on the above.
- The VLSI activities in the department are primarily in the area of designing standard digital blocks and analog blocks in deep submicron technology node. The standard digital cells designing activities are FPGA based real time system design, HDL implementation of DSP algorithms, Digital System Verification using System Verilog and analog blocks. This is primarily focused towards developing design methodology for standard cells of band gap reference, operational trans-conductance amplifier, temperature sensor. Various Biquad circuits are being made by using various active elements (e.g., OTA, DDCC, DVCC and CCCCTA).
- The department also have microelectronics devices activities in the area of characterization and modelling of conventional and unconventional MOSFET structure, organic thin film transistor. The bulk MOS in 22nm technology and below it throw considerable challenge to modelling community to include all short channel effect and still qualify as compact model. The VLSI group is augmented with standard VLSI tools of Full custom IC design Synopsis tools and Mentor Graphics HEP1.
- The research activities in the VLSI Group focus on Nano-scale Device Modelling: SRAM design, Standard cell library characterization for CMOS based combinational circuits, and novel devices based on multilayer thin film structures.

- Some of the work being undertaken includes: Study of influence of the dielectric host on the dielectric functions of Si nano-particles and charge trapping, finding out the suitability of silicon carbide in solar cell applications. The other activity is study of Fin-FET structure with the devices scaled to 18nm range. Nano-wire Fin-FET structures offer a promising future to MOSFETs. These can be scaled down to smaller dimensions without much increase in short channel effects.

### 17. Number of faculty with ongoing projects from

- National funding agencies: **Ongoing: NIL, Completed: 03**
- International funding agencies: None
- Total grants received: 17.37 Lacs

**Completed Projects: Total Grants: 17.37 Lacs**

S. No.	Granting Agency	Project Title	Time	Grant Amount (Rs in Lac)	PI
1	AICTE	RPS Project- Development of IP Core for Real Time Audio and Video Surveillance System	2009-12	5	R. C. Jain
2	ISRO	Development of algorithms for Narrow Band Interference reduction in IRNSS received signal	2011-12	5.77	R. C. Jain
3	Mentor Graphics, India.	A Low-Voltage CMOS Test Chip for Thermal Sensor and RF Application on AMS 0.35 $\mu$ m technology node using Mentor Graphics PDK	2012-14	6.6	A.B. Bhattacharyya

### 18. Inter-institutional collaborative projects and associated grants received.

The department has so far not received any grant for collaborative research. However, a good number of faculty members of other institutes as well as some industry professionals have worked with different faculty members of department for supervising doctoral research. This collaboration has resulted in many Ph. D. theses at IIIT and other universities, as given below:

<b>S. No.</b>	<b>JIIT Faculty</b>	<b>Collaborating Faculty</b>	<b>Subject Area</b>	<b>Outcome (Research Pub.)</b>
1.	R C Jain	Dr Omar Farooq, AMU, Aligarh	Digital Image Processing	NIL
2.	Vikram Karwal	Prof. J. P. Gupta, Lingaya's University, Faridabad	Communication Engineering	NIL
3.	H. O. Gupta	Dr. Kaushik Saha, Samsung R&D, Noida	VLSI System	NIL
4.	Manish Kumar	Dr. P. R. Sharma, YMCA Univ. of Sc. & Tech, Faridabad	Analog Signal Processing	NIL
5.	Anil Rose	Dr. Arun Khosla, Dr. B. R. Ambedkar NIT, Jalandhar	Soft Computing	NIL
6.	S.V. Singh	Ms. Gunjan Gupta, JUIT, Wagnaghat	Analog Signal Processing	NIL
		Mr. R.S. Tomar, Uttarakhand Tech. Univ.	Analog Signal Processing	01
7.	Shweta Srivastava	Ms. Sonali Kumari, AIT, New Delhi	Communication Engineering	NIL
		Mr. Arnab Chakraborty, KIT, Ghaziabad	Communication Engineering	NIL
		Ms. Sheelu Kumari, CIT, Ranchi	Communication Engineering	NIL
		Ms. Shatabdi Chakraborty, BIT, Mesra	Communication Engineering	NIL
		Dr. Megha Dadel, BIT, Patna	Communication Engineering	1
		Mr. Wriddhi Bhowmik BIT, Mesra	Communication Engineering	1

Details of publications are given at Annexure-I/ECE.

**19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; Total grants received. – 10.00 lakh**

S.No.	Granting Agency	Duration	Scheme	Grants received	PI
1.	AICTE	2009-12	MODROBS	10 Lac	R C Jain

**20. Research facility /centre with**

- **State Recognition:** None
- **National Recognition:** MEMS Design Centre, IIIT MEMS Design Centre (supported by NPMASS Program, Govt. of India).

The centre for MEMS design was set-up in the year 2009 as a part of Institute's response to launch MEMS activity supported under National Program on Microelectronics and Smart Systems (NPMASS), Govt. of India. A core course, Microelectronics and MEMS Technology has been incorporated in the M.Tech (Microelectronics Systems and Embedded Technology) programme.

Research work carried out:

1. Design, Characterization and Modeling of On-Chip Inductors on Silicon Substrate - A test chip with inductor structures is prototyped using industry standard CAD design environment at AMS, Austria and characterization for the same is going on presently at CARE, IITD.
2. SAW Oscillator for Temperature/Gas Sensor
3. Design of Cantilever Beam based Resonators for low-frequency filtering applications.

- **International Recognition:** None

**21. Special research laboratories sponsored by / created by industry or corporate bodies: Industry/ corporate sponsored:  
NIL**

**22. Publications:**

1.	<b>Total Number of Publications: Peer Reviewed</b>	<b>129</b>
	International Journals	127

	National Journals	2
<b>2.</b>	Monographs	1
<b>3.</b>	Chapter in Books	1
<b>4.</b>	Edited Books	0
<b>5.</b>	Books	4
<b>6.</b>	Books with ISBN with details of publishers	4
<b>7.</b>	Number listed in International Databases	293
<b>8.</b>	<b>Citation Index (Google)</b>	
	Range	1-38
	Average	4.3
<b>9.</b>	<b>Citation Index (Scopus)</b>	
	Range	1-35
	Average	4.016
<b>10.</b>	<b>SNIP</b>	76.495
<b>11.</b>	<b>SJR</b>	38.772
<b>12.</b>	<b>Impact Factor (Scopus)</b>	
	Range	0 –5.298
	Average	1.019
<b>13.</b>	<b>H-index (Scopus) average</b>	27.06

Publication details are attached as **Annexure-II/ ECE**

**23. Details of patents and income generated: NIL**

**24. Areas of consultancy and income generated**

H. O. Gupta, “Design of 5000KVA 11/.69 KV Transformers (Completed on Jan. 2015)”Area of Consultancy: Transformers and Electromagnetic Devices.

Income generated: Rs. 35,000/-

**25. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad**

The following faculty visited and delivered lecture in various University/Institute as given below:

<p><b>A. B. Bhattacharyya</b></p> <ul style="list-style-type: none"> <li>• "Microsystem Design on Silicon", Jan 28, 2014, Devi Ahilya University, Indore</li> <li>• "MOSFET Modeling for VLSI Design", Jan 29, 2014, Devi Ahilya University, Indore.</li> <li>• "Acoustic Wave Sensors", May 13, 2013, Jadavpur University, Kolkata.</li> <li>• COMPACT MODEL: BACKGROUND MATERIAL", December 03, 2012, Delhi University, Delhi.</li> <li>• "Revolutionary Ideas in Microelectronics and their Social Impact", October 12, 2012, Delhi University, Delhi.</li> <li>• "MOSFET and Interconnect Inductor Modeling for VLSI Design", October 16, 2012, Jadavpur University, Kolkata.</li> <li>• "Micro and Nano Electronics Charitmanas – Where small is not so small-", April 27, 2012, under INSPIRE PROGRAM Initiative, Meerut.</li> </ul>
<p><b>Gaurav Verma:</b></p> <ul style="list-style-type: none"> <li>• "Low Power Techniques on Embedded System Design", May 5, 2014, Shivalik College of Engineering, Dehradun.</li> </ul>
<p><b>Tanuj Chauhan:</b></p> <ul style="list-style-type: none"> <li>• MEMS Technology, June 3, 2014, Cadence Design Systems, NOIDA.</li> </ul>

- 26. Faculty serving in**
- a) National committees
  - b) International committees
  - c) Editorial Boards
  - d) any other (please specify)

**(a) National Committees**

S. No.	Name of Faculty	Details
1	A B Bhattacharyya	<ul style="list-style-type: none"> <li>▪ Member - MOS-AK International Compact Model Group</li> <li>▪ Chairman BOG, NIT Durgapur</li> </ul>

3	R C Jain	<ul style="list-style-type: none"> <li>▪ Member, Program Committee, International Conference on VLSI System and Applications (VLSI-SATA - 2015), at Amrita University, Bangalore</li> <li>▪ Member, Program Committee, ICIIS -14, Dec, 2014, IIIT, Gwalior.</li> </ul>
4	Richa Gupta	<ul style="list-style-type: none"> <li>▪ Secretary, Board of Trustees of FIM (Forum of Interdisciplinary Mathematics). Meerut, U.P.</li> </ul>

**(b) International Committees**

Name of Faculty	Details
A.B Bhattacharyya	<ul style="list-style-type: none"> <li>• International Advisor - Taoyaka Program for Graduate Studies, Hiroshima University, Japan (March 2014-ongoing)</li> </ul>

**(c) Editorial Committees**

Name of Faculty	Details
Jitendra Mohan	Journal of Advanced Electrical and Computer Engineering

**27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).**

To recharge the faculty, Department organizes conferences, workshops, seminars, expert talks, refresher courses, faculty development programs, etc., at IIIT. In addition, faculty members also participate in these activities outside IIIT.

**The academic activities organized at the Institute are listed below:**

**(i) Visitors/ Guest Speakers: 9**

1. Sumantra Dutta Roy, IIT, Delhi, Nov 5, 2014- Empirical Mode Decomposition based Techniques.
2. Sh. R. K. Singh, Consultant (Former Engineer-in-Chief, Doordarshan), New Delhi, April 18, 2014 - Recent Trends in broadcasting in India.
3. N. N. Sharma, Coordinator- Nanomaterials and National MEMS Design Centre, BITS, Pilani, Feb. 22, 2014 - MEMS Design: A paradigm shift in design thought process.
4. R K Shevgaonkar, IIT Delhi, Dec 12, 2013- Photonic Crystals.
5. Surendra Prasad (Ex-Director, IIT Delhi), Dec 12, 2013- Broadband Access Network Technologies.
6. Jaromir Pistora, Technical University of Ostrava, Czech Republic,



- Dec 13, 2013- Nonlinear Optical Devices.
7. Banmali Singh Rawat, Univ. of Nevada, Reno, USA, Dec 14, 2013 - Recycling the Light.
  8. Sneh Anand, IIT, Delhi, Dec. 14, 2013- Intelligent Biomedical Systems.
  9. Sunil Kumar, San Diego State University, San Diego, Aug. 3, 2013- Video Compression Techniques and Standards.

**(ii) Workshops/ Conferences/ FDP:**

1. IEEE International Conference on Signal Processing and Communication (ICSC-2015), March 16-18, 2015.
2. IEEE International Symposium on Signal processing and Information Technology, Dec 15 – 17, 2014.
3. Two weeks ISTE Workshop on Control Systems, Dec. 2 -12, 2014.
4. Two days workshop on Low Voltage and Low Power VLSI Design, Aug. 22 - 23, 2014.
5. Two weeks ISTE Workshop on “Signals and Systems”, Jan. 2-12, 2014.
6. IEEE International Conference on Signal Processing and Communication (ICSC-2013), Dec. 12-14, 2013.
7. Workshop on “COMSOL Multiphysics for MEMS Modeling”, Nov. 15, 2013.
8. Workshop on “Semiconductor Device Modeling using TCAD Tools”, Oct. 4, 2013.
9. A 5-days workshop on “Design for Testability”, K Chakraborty, FIEEE, Duke Univ., USA, July 23-27, 2013.
10. A 5-days IUCEE workshop on “Embedded Systems”, by Vijaynarayanan, FIEEE, Penn State Univ., USA, July 1-5, 2013.
11. CMOS Technology and Spice Model: MOS-AK India, Tutorial, March 18, 2012.
12. A 2-daysworkshop on “Device Modeling for Microsystems”, March 16-17, 2012.
13. A 1-day workshop on “Wavelets & its Applications”, April 20, 2011.
14. A 1-day workshop on “Microwave Tubes”, Nov 27, 2010.
15. FDP on Signal Processing & Communications, 21<sup>st</sup> -26<sup>th</sup> July, 2014.

**28. Student projects**

Percentage of students who have done in-house projects including inter-departmental projects

100%

Percentage of students doing projects in collaboration with other universities

/ industry / institute  
0%

**29. Awards / recognitions received at the national and international level by Faculty:**

S. No.	Name of Faculty	Detail of Research Award
1	Hari Om Gupta	<ol style="list-style-type: none"> <li>1. Commendation Certificate from University of Roorkee, “Novel Techniques for electronic circuit analysis” Year: 1980</li> <li>2. Certificate Merit, Institution of Engineers (India) “An algorithm for solving nonlinear electronic circuit equations: Year: 1985 With: Dr. J.D. Sharma)</li> <li>3. Silver Medal and Cash Prize of Rs.500/- Khosla Annual Research Prize-1989 “New One-Cycle static blocking scheme for inrush in differential relay” Year: 1989 With: (Dr. B.T. Desai &amp; Prof. M.K. Vasantha)</li> <li>4. Best Research Paper Award by “Hari Ohm Ashram Preit Shri Bhaikaka Inter University Smark Trust” Sardar Patel University. “New One-Cycle static blocking scheme for inrush in differential relay” in the Year: 1991 With:(Dr. B.T. Desai &amp; Prof. M.K. Vasantha)</li> <li>5. CBIP Best Research Award “A Novel approach to computation of energy of non-linear loads” Year: 1992-93 With: (Dr. (Ms.) Indra Gupta, Mr. S.K. Joshi and others)</li> <li>6. Certificate of Merit from the Institution of Engineers (India) “Investigation of Power System Voltage Security Analysis Under Critical Loading Conditions” Year:1993-94 With:(Dr. V. Bhanot and Prof. J.D. Sharma)</li> <li>7. Certificate of Merit from the Institution of Engineers (India) “Adaptive Coordination of Directional Over Current Relays of Electrical Power Systems Using Network Decomposition Approach” Year :1994-95 With: (Dr. N.A. Laway)</li> <li>8. Khosla Award Cash Prize of Rs. 1500/- and a Medal, IIT, Roorkee. “New Reduction Technique for Distribution Feeders” Year: 2001-2002 With: (Dr. (Ms.) Indra Gupta and Prof. M.K. Vasantha)</li> <li>9. Union Ministry of Energy- Deptt. of Power Prize- from the Institution of Engineers (India) “A New Evolutionary</li> </ol>

		<p>Programming Based Approach for Optimal Selection of Wheeling Options” Year: 2003-2004 With: (Dr. N.P. Padhy and Dr. Y. R. Sood)</p> <p>10. Best paper award in National Conference on Control and Instrumentation, held at Department of Electrical Engineering, NIT, Kurukshetra , Dec.29-30,2007 on research paper “Biased Reduced Order Models using Dominant Pole Retention and Genetic Algorithm” With: (Mrs Nidhi Singh and Rajendra Prasad)</p> <p>11. Mathur Vaishya Ratna (Highest Community award on social work) 2012.</p>
2	A.B. Bhattacharyya	<p>1. Hari Om Vikram Sarabhai Award (1980)</p> <p>2. Bhasin Award (1984)</p> <p>3. Khosla National Award (1986)</p> <p>4. S. N. Mitra INAE Award (2005)</p> <p>5. Indian Semiconductor Association (ISA) Techno Visionary Award (2009)</p> <p>6. Fellow (The Founder Member) - Indian National Academy of Engineering(INAE)</p>
3	R. C. Jain	<p>1. Canadian Commonwealth Scholarship and Fellowship 1983.</p> <p>2. CDIL Award of the Institution of Electronics and Telecommunication Engineers (IETE), India in the year 1994 for the best paper in Industrial Applications category.</p> <p>3. K S Krishnan Memorial Award of the IETE, India in the year 1999 for a paper published in the IETE Journal of Research.</p> <p>4. IETE-Students’ Journal Award, 2006 for a paper published in IETE Journal of Education.</p> <p>5. Foreign IT Professor, GIST, South Korea under the Govt. of South Korea Scheme “Brain Korea- 21”:</p> <p>a. July 2002 to June, 2004, and</p> <p>b. July 2006 to June, 2007</p>

**Doctoral / post doctoral fellows: NIL**

**Students:**

**1. Delhi Technological University (DTU): INNOVA 2011**

<b>Name Of Event &amp; Date</b>	<b>Position/ Prize</b>	<b>Team Members- Branch/Year</b>

Life on the edge (22-02-2011)	1 <sup>st</sup> Prize	Prateek Agnihotri, Laxmikant Ratnawat -2 <sup>nd</sup> yr ECE, Swadeep Chaturvedi-1 <sup>st</sup> yr ECE, Avnessh Singh-1 <sup>st</sup> yr CSE
Robo Rush	Certificate	Abhishek Chauhan - 2 <sup>nd</sup> yr ECE
Aqua Rush	Certificate (4 <sup>th</sup> )	Abhishek Chauhan-2 <sup>nd</sup> yr ECE
Robo combat	3 <sup>rd</sup> Prize	Akash Shukla, Rituraj Singh, Rahul Sinha, Akash Chaudhry-2 <sup>nd</sup> yr ECE
Robo Rush	Certificate	Akash Shukla, Rituraj Singh, Rahul Sinha, Akash Chaudhry-2 <sup>nd</sup> yr ECE
Robo Rush/ Robo combat	Certificate	Ravi Jain- 1 <sup>st</sup> yr ECE
Boat Rush	1 <sup>st</sup> Prize	Ritu Raj Singh, Akash Shukla, Rahul Sinha-2 <sup>nd</sup> yr ECE

## 2. IIT Kharagpur-Techfest-2011

Name Of Event	Position/ Prize	Team Members
RAFT	Finalists (Certificate)	Shivam Mittal-2 <sup>nd</sup> yr ECE Rishabh Shukla, Prerit Jain, Arpit Gupta-2 <sup>nd</sup> yr CSE
RAFT	Certificate	Ravi Jain, Sarthak Bhatnagar, Rachit Jain--1 <sup>st</sup> yr ECE

## 3. Gnix- 2011-Galgotia University

Name Of Event	Position/ Prize	Team Members
Line-X	Certificate	Rituraj Singh-2 <sup>nd</sup> yr Akash Shukla, Rahul Sinha, Akash Chaudhary-2 <sup>nd</sup> yr

## 4. Amity Youth Fest 2012, Feb 09-12, 2012

Name Of Event	Position/ Prize	Team Members
Robo war	1 <sup>st</sup> Prize	Rituraj Singh, Akash Shukla, Rahul Sinha, Mayank Juneja-3 <sup>rd</sup> yr ECE

Soccer Mania	1 <sup>st</sup> Prize	Rituraj Singh, Akash Shukla, Rahul Sinha, Mayank Juneja-3 <sup>rd</sup> yr ECE
F-1	1 <sup>st</sup> Prize	Rituraj Singh, Akash Shukla, Rahul Sinha-3 <sup>rd</sup> yr ECE
Roborace	2 <sup>nd</sup> Prize	Rituraj Singh, Akash Shukla, Rahul Sinha-3 <sup>rd</sup> yr ECE

### 5. IIT Kharagpur-Techfest-2012

Name Of Event	Position/ Prize	Team Members
Inferno	Finalists	Ravi Jain, Abhinav Gupta, Piyush Agarwal-2 <sup>nd</sup> yr ECE, Rishi Golyan-2 <sup>nd</sup> yr CSE
Inferno	Finalists (Certificate)	Shivam Sharma, Amulya -1 <sup>st</sup> yr ECE Rajan Middha-1 <sup>st</sup> yr CSE
Stasis	Finalists (Certificate)	Abhinav Gupta, Piyush Agarwal, Rishi Golyan -2 <sup>nd</sup> yr CSE, Ravi Jain-2 <sup>nd</sup> yr ECE

### 6. DTU Techfest 2012

Name Of Event	Position/ Prize	Team Members
Stasis	1 <sup>st</sup> Prize	Ravi Jain-2 <sup>nd</sup> yr ECE
		Abhinav Gupta-2 <sup>nd</sup> yr CSE
Robo Soccer	2 <sup>nd</sup> Prize	Ravi Jain, Anshumaan Singh-1 <sup>st</sup> yr ECE
Robo Race	Finalists (Certificate)	Ravi Jain, Anshumaan Singh-1 <sup>st</sup> yr ECE
Robo War	Finalists (Certificate)	Ravi Jain, Anshumaan Singh-1 <sup>st</sup> yr ECE

### List of awards and achievements in events other than Robotics for students

S.No.	Name of	Detail of the Conference /	Nature of the
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	Students	Technical Event / Technical competition	award
1	Manoj Makhija, Kapil Goyal	Switching Application using Hand Gesture Recognition” in ICRAIE, Rajkot.	Published a paper
2	Kapil Verma	Inter College Robotics events organized at Amity Youth festival, 2013, Delhi	1st position
3	Kapil Verma	Inter College HTML reverse engg competition organized at GDG Bharti Vidyapeeth	2nd position
4	Anubhav Gupta	Inter College Robotics events organized at Amity Youth festival, 2013.	2nd position
5	Abhinav Gupta	Inter college Robotics organized at DTU, Delhi	1st position
6	Abhinav Gupta	For developing website for International SFIA conference organized by AKS Services UK Ltd in 2013	Selected
7	Harshit Jain	To develop medical adherence applications in 2013.	Research assistantship from (University of Notre dame, USA)

**30. Seminars/ Conferences/Workshops organized and the source of funding (national/ international) with details of outstanding participants, if any.**

S.No.	Name of Seminars/ Conferences/Workshops	Source of funding	Outstanding participants
1	<b>IEEE International Conference on Signal Processing and Communication (ICSC-2015), March 16-18, 2015.</b> <b>Funding Agencies:</b> IIIT, Noida. <b>Outstanding Participants:</b> <b>Prof. U. B. Desai</b> , IIT Hyderabad, <b>Prof. V. K. Jain</b> , IIT Delhi, <b>Prof. Banmali S. Rawat</b> , University of Nevada, USA, <b>Dr. Kiyotoshi Yasumoto</b> , Kyushu University, Japan, <b>Prof. Jaromir Pistora</b> , VSB-Technical University of Ostrava, <b>Prof. Vinod Kumar</b> , IIT Roorkee.		

2	<p><b>IEEE International Symposium on Signal Processing and Information Technology (ISSPIT-2014), Dec. 15-17, 2014.</b>  <b>Funding Agencies:</b> IIIT, Noida and IEEE, USA  <b>Organized jointly with University of Florida, USA</b>  <b>Outstanding participants:</b>  <b>Prof. Sartaj Sahni</b>, University of Florida, USA, <b>Prof. Mohamed H. Ahmed</b>, Memorial U of Newfoundland, Canada, <b>Prof. Reda Ammar</b>, University of Connecticut, USA, <b>Prof. Adel Elmaghraby</b>, University of Louisville, USA, <b>Prof. Sanguthevar Rajasekaran</b>, Univ. of Connecticut, USA.</p>
3	<p><b>Ten days workshop on Control Systems, Dec. 2-12, 2014.</b>  <b>Funding Agencies:</b> NMEICT (National Mission on Education through ICT) funded by MHRD, GOI and organized in conjunction with IIT, Kharagpur.  <b>Outstanding participants:</b>  <b>Siddhartha Mukhopadhyay</b>, Department of Electrical Engineering, IIT Kharagpur, <b>Tapan Kumar Ghoshal</b>, Department of Electrical Engineering, Jadavpur University, Kolkata</p>
4	<p><b>Two days workshop on “Low Voltage and Low Power VLSI Design”, Aug. 22 - 23, 2014</b>  <b>Funding Agencies:</b> IIIT, Noida.  <b>Outstanding Participants:</b>  <b>A. B. Bhattacharya</b>, IIIT Noida, <b>G. S. Visweswaran</b> (Professor, Department of Electrical Engineering, IIT Delhi), <b>Kaushik Saha</b> (Director, Systems R&amp;D, Samsung India), <b>Shouribrata Chatterjee</b> (Associate Prof., Department of Electrical Engineering, IIT Delhi)</p>
5	<p><b>Two week ISTE Workshop on “Signals and Systems”, Jan. 2-12, 2014.</b>  <b>Funding Agencies:</b> IIT, Kharagpur under MHRD programme, NMEICT held at ECE Deptt., IIIT, Noida  <b>Outstanding Participants:</b>  <b>Vikram M. Gadre</b>, IIT Bombay, <b>Somnath Sengupta</b>, IIT, Kharagpur</p>
6	<p><b>IEEE International Conference on Signal Processing and Communication (ICSC-2013), Dec. 12-14, 2013.</b>  <b>Funding Agencies:</b> IIIT, Noida.  <b>Outstanding Participants:</b>  <b>R K Shevgaonkar</b>, IIT Delhi, <b>Surendra Prasad</b>, Ex-Director, IIT Delhi, <b>Kiseon Kim</b>, GIST, South Korea, <b>Jaromir Pistora</b>, Tech. Univ. of Ostrava, Czech Republic, <b>Banmali S. Rawat</b>, Univ. of Reno, USA</p>
7	<p><b>Workshop on “COMSOL Multiphysics for MEMS modeling”, Nov. 15, 2013.</b></p>

	<p><b>Funding Agency:</b> JIIT, Noida  <b>Outstanding participants:</b>  <b>Hemant Kumar and Technical Team, Comsol, India</b></p>
8	<p><b>Workshop on “Semiconductor Device Modeling using TCAD Tools”, Oct. 4, 2013.</b>  <b>Funding Agency:</b> JIIT, Noida  <b>Outstanding participants:</b>  <b>Amit Saini, and Technical Team, Cadence Design System, Noida</b></p>
9	<p><b>Workshop on “Design for Testability”, July 23-27, 2013.</b>  <b>Funding Agency:</b> JIIT, Noida  <b>Outstanding Participants:</b>  <b>Krishnendu Chakrabarty, Professor, Duke University, USA</b></p>
10	<p><b>Workshop on “Embedded Systems”, July 1-5, 2013.</b>  <b>Funding Agency:</b> JIIT, Noida  <b>Outstanding Participants:</b>  <b>Vijaykrishnan Narayanan, Professor, Pennsylvania State University, USA</b></p>
11	<p><b>International workshop MOS-AK/GSA India 2012 on “Device Modeling for Microsystems”, March 16-18, 2012.</b>  <b>Funding Agencies:</b> JIIT, co-organized by Indian National Academy of Engineering (INAE), supported by DIT, GOI and CSIR.  <b>Outstanding Participants:</b>  <b>Mitiko Miura, Mattauch Hiroshima University, Japan, Narain D. Arora, Silterra, Malaysia, Yogesh Chauhan, UC Berkeley, Xing Zhou, NTU, Singapore, Ane Juge STMicroelectronics, France, Ehrenfried Seebacher, AMS Austria, Vaidyanathan Subramanian, IBM, India, Samar Saha, SuVolta, USA, Waldek Grabinski, MOS-AK/GSA, EU, Mike Brinson, London Metropolitan University, London, Thomas Gneting, ADMOS, Germany, V Ramagopal Rao, IIT Mumbai, A B Bhattacharyya, JIIT, Noida, Shantanu Mahapatra, IISc, Anitava Dasgupta, IIT, Chennai, M Jagdesh Kumar, IIT, Delhi, Navakanta Bhat, IISc., Soumya Pandit, IPRE, Kolkata</b></p>
12	<p><b>Workshop on “Wavelets &amp; its Applications”, April 20, 2011.</b>  <b>Funding Agencies:</b> JIIT  <b>Organized jointly with Mathematics Department JIIT, Noida</b>  <b>Outstanding Participants:</b>  <b>S. D. Joshi, IIT Delhi, Mani Mehra, IIT Delhi, Pradeep Sarkar, IIT Kanpur, Umar Farooq, AMU, Aligarh, Bani Singh, JIIT Noida</b></p>
13	<p><b>Workshop on ‘Microwave Tubes’ Nov. 27, 2010</b>  <b>Funding Agencies:</b> JIIT  <b>Outstanding Participants:</b>  <b>B. N. Basu, BHU Varanasi, Lalit Kumar, MTRDC Bangalore, R. S.</b></p>



**31. Code of ethics for research followed by the departments**

Department follows the code of ethics defined by the Institute. The ethics lays strong emphasis that all research work/theses must be original and work by others is duly acknowledged. To enhance quality of research anti-plagiarism software is used. Research scholars and students before submitting their Ph. D. theses, dissertations, Project reports and research papers for award/publications check manuscripts for plagiarism.

**32. Student profile programme-wise:**

Name of the Programme (refer to question no. 4)	Applications received*	Selected		Pass Percentage	
		Male	Female	Male	Female
<b>B. Tech. (ECE)</b>					
2007-11	22629	146	27	143 (97.95)	27 (100)
2008-12	32517	122	51	117 (95.90)	50 (98.04)
2009-13	31710	215	58	209 (97.21)	58 (100)
2010-14	26650	314	79	289 (92.04)	79 (100)
<b>DUALM-ECE</b>					
2006-11	19372	18	8	18 (100)	8 (100)
2007-12	22229	7	0	5 (71.43)	0 (NA)
2008-13	32017	19	24	18 (94.74)	23 (95.83)
2009-14	31210	22	6	19 (86.36)	6 (100)
<b>Dual Degree B.Tech- M. Tech. (ECE)</b>					
2006-11	19872	NA	NA	NA	
2007-12	22629	NA	NA	NA	
2008-13	32517	NA	NA	NA	
2009-14	31710	NA	NA	NA	
<b>M. Tech. (ECE)</b>					
2009-11	445	6	8	5 (83.33)	8 (100)
2010-12	1310	19	9	18 (94.74)	9 (100)
2011-13	1943	7	13	6 (85.71)	13 (100)
2012-14	1600	7	10	7 (100)	10 (100)
<b>M. Tech. (MET)</b>					
2009-11	445	11	2	10 (91.91)	1 (50)
2010-12	1310	12	2	12 (100)	2 (100)
2011-13	1943	10	2	10 (100)	2 (100)

2012-14	1600	14	6	12	6 (100)
<b>Ph. D.</b>					
<b>Upto 2014</b>	<b>432</b>	<b>45</b>	<b>20</b>	<b>Passed:</b> <b>Continuing:</b> <b>Discontinued:</b>	9(5M, 4F) 35 (22M, 13F) 21 (18M, 3F)

\*Applications for the UG programs are received without any choice of program. The choice of program is exercised by the candidate during counselling. Hence individual program based applications is not possible to be indicated.

#The application for PG programs are received under two categories (i) GATE & (ii) PGET. Each candidate is allowed to exercise multiple choices of programs where he/she is eligible. Therefore individual program based applications is not possible to be indicated.

### 33. Diversity of students Data

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
<b>B.Tech. (ECE)</b>				
2011	NIL	2.63	97.13	0.24
2012	NIL	4.61	94.93	0.46
2013	NIL	5.34	94.66	NIL
2014	NIL	6.78	93.22	NIL
<b>DUALM-ECE</b>				
2011	NA	NA	NA	NA
2012	NA	NA	NA	NA
2013	NA	NA	NA	NA
2014	NA	NA	NA	NA
<b>Dual Degree B.Tech- M. Tech. (ECE)</b>				
2011	NA	NA	NA	NA
2012	NIL	3.85	96.15	NIL
2013	NIL	4.35	95.65	NIL
2014	NIL	NIL	100	NIL
<b>M. Tech. (ECE)</b>				
2009-11	7.69	53.85	38.46	NIL

2010-12	NIL	35.71	64.29	NIL
2011-13	NIL	50.00	50.00	NIL
2012-14	NIL	52.94	47.06	NIL
2013-15	3.45	51.72	44.83	NIL
2014-16	NIL	42.86	57.14	NIL
<b>M. Tech. (MET)</b>				
2009-11	NIL	46.15	53.85	NIL
2010-12	NIL	71.43	28.57	NIL
2011-13	NIL	66.67	33.33	NIL
2012-14	NIL	60.00	40.00	NIL
2013-15	NIL	75.00	25.00	NIL
2014-16	NIL	53.57	46.43	NIL
<b>Ph. D. (ECE)</b>				
2011	NIL	NIL	100	NIL
2012	10.00	20.00	60.00	10.00
2013	16.67	33.33	33.33	16.67
2014	16.67	16.67	66.66	NIL

**34. How many students have cleared Civil Services and Defence Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.**

**GRE: 90+ students**  
**GATE: 120+ students**  
**CAT/MAT: 80+ students**

**35. Student progression**

The Department does not have a systematic data on the progression of students after graduating like proceeding for higher studies or joining the companies after placements, etc. However, the details of alumni available indicate following trends:

<b>Student progression</b>	<b>Percentage against enrolled</b>
UG to PG	15-20 %
PG to M.Phil.	NA
PG to Ph. D.	~20%
Ph. D. to Post-Doctoral	NIL
Employed	
• Campus selection	~85%

• Other than campus recruitment	~10%
Entrepreneurs	0.5%

**36. Diversity of staff**

Percentage of faculty who are graduates	PG	Ph. D.
of the same university	8	23
from other universities within the State	16	14
from universities from other States	71	54
universities outside the country	5	9

For Ph. D., percentage is calculated out of total Ph. D. degree holders and **Percentage of PG is calculated out of total strength of the Department.**

**37. Number of faculty who were awarded M.Phil., Ph. D., D.Sc. and D.Litt. during the assessment period**

Total no. = 17

The following faculty have acquired Ph. D. Degree within assessment period:

Samir Dev Gupta, Manish Kumar, Richa Gupta, Ashish Goel, Jasmine Saini, Shamim Akhter, Abhinav Gupta, Vineet Khendelwal, Vijay Khare, Rajesh Kumar Dubey, Jitendra Mohan, Sajai Vir Singh, Vipin Balyan, Megha Agrawal, Bhartendu Chaturvedi, Alok Joshi, and Madhu Jain.

**38. Present details of departmental infrastructural facilities with regard to**

a) **Library:** Department uses the Central Learning Resource (Central Library)

b) **Internet facilities for staff and students:**

- i. All the faculty members are provided with desktop computer and internet connections. All faculty have access to Institute webkiosk and webmail.
- ii. Students are provided with internet connections with Wi-Fi access. They are also provided access to the webkiosk with personal login
- iii. Students can access internet from anywhere within the campus as the entire Institutional campus area is Wi-Fi enabled.

iv. Class rooms, lecture theatres, and labs are also equipped with internet facilities for teaching and demonstration.

c) **Total number of class room:** 49 Lecture Theatres/ Class Rooms and 42 Tutorial Rooms of the Institute are shared with other departments

d) **Class rooms with ICT facility:** 40 Lecutre Theatres/ Class Rooms.

e) **Student's Laboratories**

Laboratory	Location	L A N	P C	Power backup	Capacity	Display Board	White Board
<b>Sector-62</b>							
Basic Electronics Lab -1	ABB-I	N	N	Y	32	Y	Y
Basic Electronics Lab -2	ABB-I	N	N	Y	32	Y	Y
Electronic Devices Lab	ABB-I	N	N	Y	32	Y	Y
Electrical Machines Lab	ABB-I	N	N	Y	32	Y	Y
Signal Processing Lab	ABB-I	Y	Y	Y	32	Y	Y
Communication Systems Lab	ABB-I	N	N	Y	32	Y	Y
Advance Communication Systems Lab	ABB-I	Y	Y	Y	32	Y	Y
VLSI / VHDL Lab	ABB-I	Y	Y	Y	32	Y	Y
B Tech Project Lab – 1	ABB-2	Y	Y	Y	40	Y	Y
Embedded Systems Lab	Under Development						
<b>Sector-128</b>							
Basic Electronics Lab	Block A	N	N	Y	30	Y	Y
Communication Systems Lab	Block B	N	N	Y	30	Y	Y
VLSI Lab	Block B	Y	Y	Y	37	Y	Y
DSP Lab	Block B	Y	Y	Y	30	Y	Y
Electromagnetics Lab	Block B	Y	Y	Y	30	Y	Y
Analog & Digital Electronics Lab	Block A	N	N	Y	30	Y	Y
Creativity and Innovation Lab	Block B	N	N	Y	20	Y	Y
Electrical Machines and Instrument Lab.	Block A	N	N	Y	30	Y	Y

**f) Research Laboratories**

Laboratory	Location	L A N	P C	Power backup	Capacity	Display Board	White Board
MEMS Lab	ABB-2	N	N	Y	13	Y	Y
B Tech Project Lab – 2	Under Development						
M Tech Project Lab	Under Development						

**39. List of doctoral, post-doctoral students and Research Associates**

**a) From the host institution/university**

Awarded: 7

Pursuing: 20

S. No	SCHOLAR	SUPERVISOR	STATUS
1	Samir Dev Gupta	M. C. Srivastava	Completed
2	Manish Kumar	M. C. Srivastava	Completed
3	Ashish Goel	Prerana Gupta	Completed
4	Richa Gupta	N. Kalyanasundaram, B. D. Sharma	Completed
5	Jasmine Saini	N. Kalyanasundaram	Completed
6	Shamim Akhter	Vikram Karwal, R.C. Jain	Completed
7	Pankaj Kumar Yadav	Vikram Karwal, J.P.Gupta	Ongoing
8	Smriti Bhatnagar	R.C. Jain	Ongoing
9	Bhawna Gupta	R.C. Jain, Omar Farooq	Ongoing
10	Reema Budhiraja	R. C. Jain, Manish Kumar	Ongoing
11	Juhi Gupta	Vikram Karwal, Vivek Dwivedi	Ongoing
12	Neetu Singh	R.C. Jain, Abhinav Gupta	Ongoing
13	Rahul Kaushik	R.C. Jain, Vineet Khandelwal	Ongoing
14	Tanuj Chauhan	Vikram Karwal	Ongoing
15	Vinay A. Tikkiwal	Hari Om Gupta, S. V. Singh	Ongoing
16	Ankur Bhardwaj	Manish Kumar	Ongoing
17	Shruti Kalra	A. B. Bhattacharyya	Ongoing
18	Kirminder Singh	A. B. Bhattacharyya	Ongoing
19	Manu Prakash	Vikram Karwal	Ongoing
20	Manish Agrawal	Vijay Khare	Ongoing

21	Raazia Shamim	R. C. Jain, Shweta Srivastava	Ongoing
22	Gaurav Verma	Manish Kumar, Vijay Khare	Ongoing
23	Anand Kumar	Hariom Gupta , Jitendra Mohan	Ongoing
24	Abhishek Kashyap	Megha Agarwal, Hari Om Gupta	Ongoing
25	Shivaji Tyagi	R. C. Jain	Ongoing

**b) From other Institutions/Universities**

S. NO	SCHOLAR	SUPERVISOR	STATUS
1	Amita Agnihotri	N. Kalyanasundaram	Completed
2	Tarun Kumar	R.C. Jain	Ongoing
3	Amit Garg	A. K. Singhal	Ongoing
4	Naveen Jaglan	Samir Dev Gupta	Ongoing
5	Prasanna Kumar Singh	Samir Dev Gupta	Ongoing
6	Chanadra Shankar Porwal	S. V. Singh	Ongoing
7	Aashima Garg	Ashish Goel	Ongoing
8	Manoj Kumar Garg	S. D. Gupta	Ongoing
9	Tanvi Agrawal	Vipin Balyan	Ongoing
10	Suman Bharti	Richa Gupta	Ongoing
11	Abhishek Jain	Richa Gupta	Ongoing
12	Atul Kumar	Bhartendu Chaturvedi	Ongoing
13	Shilpi Shukla	Rajesh Dubey	Ongoing
14	Saruti Gupta	Ashish Goel	Ongoing

**40. Number of post graduate students getting financial assistance from the university**

Year	M.Tech	Ph. D.
2011-12	10	0
2012-13	10	3
2013-14	13	2
2014-15	43	3

**41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.**

The emerging trends in industry, research, government policies,

recommendations of the professional bodies, and JIIT management's directives motivate and guide the department to design new programs. International and nationally renowned academicians from many top rated institutes and industry professionals including our alumni are consulted while conceptualising and designing new programs or revising the curricula of existing degree programs. All the faculty members are requested to give their suggestions and finally the meeting of the BOS including external experts is held for reviewing the curriculum.

**42. Does the department obtain feedback from**

**i. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?**

Yes. Feedback from faculty is obtained during departmental meetings.

**ii. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?**

Yes. At the end of every semester, students' feedback is collected for teaching faculty. The average weighted calculated score is communicated to concerned faculty for remedial measures.

**iii. Alumni and employers on the programmes offered and how does the department utilize the feedback?**

Yes. Feedback from alumni is collected through email and the same is documented at departmental level. Important points from feedback are discussed intra-departmentally.

Online feedback collection mechanism has been operationalized from Academic Session 2014-15 through Institute Quality Assurance Cell (IQAC).

**43. List the distinguished alumni of the department (maximum 10)**

<b>S.No</b>	<b>Name, Year of Graduation from JIIT, Achievements and current affiliation</b>
1	Nishant Mittal, 2009 Director, Sybly Industries Ltd.
2	Anurag Gupta, 2011 Director, Nova Biological Systems Pvt. Ltd.
3	Jaspreet Singh Makkar, 2013 Founder, Meissa Technologies Pvt. Ltd.
4	Siddhant Gupta, 2013



	Director, ABC Technology Ltd.
5	Chetan Chaturvedi, 2006 Vice President Sales, 6D Telecom Solutions Pvt. Ltd.
6	Mayank Agarwal, 2014 Founder, ANDROBO
7	Karan Kumar, 2009 Senior Business Specialist, Cigna Health Care

**44. Give details of student enrichment programmes (special lectures/ workshops / seminar) involving external experts.**

1. IEEE International Symposium on Signal Processing and Information Technology (ISSPIT-2014), Dec. 15-17, 2014.
2. ISTE Workshop on “Control Systems” by Siddhartha Mukhopadhyay, IIT Kharagpur, Tapan Kumar Ghoshal, Jadavpur University, Kolkata on Dec. 2-12, 2014.
3. Workshop on "Low Voltage and Low Power VLSI Design" by G.S. Visweswaran, IIT Delhi, Kaushik Saha, Samsung India, Shouribrata Chatterjee, IIT Delhi on Aug. 22-23, 2014.
4. Workshop on “Signals and Systems” by Vikram M.Gadre, IIT Bombay, Somnath Sengupta, IIT, Kharagpur on Jan. 2-12, 2014.
5. IEEE International Conference on Signal Processing and Communication (ICSC-2013) by R K Shevgaonkar, IIT Delhi, Surendra Prasad, Ex-Director, IIT Delhi, Kiseon Kim, SIST, South Korea, Jaromir Pistora, Tech. Univ. of Ostrava, Banmali Singh Rawat, Univ. of Reno, USA on Dec. 12-14, 2013.
6. Workshop on “COMSOL Multiphysics for MEMS modeling” by Hemant Kumar and Technical Team, Comsol India on Nov. 15, 2013.
7. Workshop on “Semiconductor Device Modeling using TCAD Tools” by Amit Saini, Cadence Design System, Technical Team, Cadence Design System on Oct. 4, 2013.
8. A 5-day workshop on “Design for Testability” by Krishnendu Chakrabarty, Duke University, USA on July 23-27, 2013.
9. International workshop MOS-AK/GSA India 2012 on “Device Modeling for Microsystems” by Mitiko Miura, Mattausch Hiroshima University, Japan, Narain D. Arora, Silterra, Malaysia, Yogesh Chauhan, UC Berkeley, Xing Zhou, NTU, Singapore, Ane Juge STMicroelectronics, France, Ehrenfried Seebacher, AMS Austria, Vaidyanathan Subramanian, IBM, India, Samar Saha, SuVolta, USA, Waldek Grabinski, MOS-AK/GSA, EU, Mike Brinson, London Metropolitan University, London, Thomas Gneting, ADMOS,

Germany, V Ramagopal Rao, IIT Mumbai, A B Bhattacharyya, IIIT, Shantanu Mahapatra, IISc, Anitava Dasgupta, IIT, Chennai, M Jagdish Kumar, IIT, Delhi, Navakanta Bhat, IISc., Soumya Pandit, IPRE, Kolkata on March 16-18, 2012.

10. Workshop on “Wavelets & Its Applications” in Signal Processing by S. D. Joshi, IIT Delhi, Mani Mehra, IIT Delhi, Pradeep Sarkar, IIT Kanpur, Omar Farooq, AMU Aligarh on April 20, 2011.
11. Workshop on “Microwave Tubes” by Prof. B.N. Basu, BHU Varanasi, Lalit Kumar, MTRDC Bangalore, R.S. Raju, CEERI Pilani on Nov. 27 2010.

**45. List the teaching methods adopted by the faculty for different programmes.**

1. Regular chalk/Marker and board
2. Exercises in tutorial classes.
3. Use of audio visual aids
4. Project based learning (Seminars, Minor and Major Projects)
5. Case study / peer-reviewed publication based learning
6. Technical Papers from IEEE, IET, Springer etc. Journals.

**46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?**

The department monitors the learning outcomes through student’s progressions (placement/ entrepreneurship/higher education). Institute Quality Assurance Cell (IQAC) is responsible for the day to day administration of quality assurance at IIIT.

Academic Council, Board of studies and Institute IQAC meet regularly to evaluate and provide course correction whenever required. This improves the quality in academics as well as in research processes. The feed backs are collected from faculty and course syllabi developed subsequently taking into consideration recent developments in the subject areas. The feedback of the outgoing and ex-students and their expectations from the program/course are reviewed regularly in department, faculty meetings. This aids in continuously developing the department’s objectives.

**47. Highlight the participation of students and faculty in extension activities.**

Faculty and students of the department are actively involved in various

extension activities organized by JIIT. Details are given in Section 3.6 of Self Study Report of the Institute.

**48. Give details of “beyond syllabus scholarly activities” of the department.**

Beyond syllabus scholarly activities

- (i) Expert Lectures
- (ii) Seminars, Workshops and Conferences
- (iii) Techno-cultural fests inter- and intra-university participation

**49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.**

Yes, the Department of ECE was NBA accredited for 5 years w.e.f. 22.01.2008

**50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.**

Ph. D. Scholars, students’ projects under the guidance of supervisors are involved in generation of new knowledge and contributions through publications as below:

S.No.	Paper Type	Total
1	International Journals	108
2	National Journals	2
3	International Conferences	120
4	National Conferences	7
5	Book Publication	1
6	Chapter Publication	0
<b>Total</b>		<b>238</b>

Some of the major contributions of the department are as under:

Dr. Manish Kumar: Designing of improved on-chip tunable bi-quad filter.

Dr. Rajesh K. Dubey: Weight dependent frames in multiple time-scale speech quality assessment.

Dr. Shamim Akhter: Development of update algorithms for DCT

computation.

Dr. Vipin Balyan: Assignment schemes for OVVSF codes.

Dr. Jasmine Saini: Improved design for a TWT

Dr Richa Gupta: Improved RVLCs

Dr Ashsish Goel: Improvement in 4G cellular network technology

**51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.**

**Strengths**

- i. Well qualified and experienced faculty
- ii. Good infrastructure (Audio visual facility in all classrooms, good laboratory facility, library equipped with reference books and research journals)
- iii. Flexibility in updating curriculum
- iv. Strategic NCR location enabling collaborations with Institutions.

**Weakness**

- i. Ability to attract very good employers in core areas of the ECE students
- ii. High end Research Facilities
- iii. Extension activity

**Opportunities**

- i. Present national focus on research, development and manufacturing
- ii. Multidisciplinary collaborative research with other departments of the Institute
- iii. Institute location in National Capital Region (NCR).

**Challenges**

- i. Quality High-end Research work
- ii. Quality of M.Tech/ Ph. D. students
- iii. Sponsored projects from Govt. and other institutions

**52. Future plans of the department.**

- i. To secure national recognition in the area of Communication Engineering.
- ii. Getting research projects from national and international agencies.
- iii. To publish high quality research papers with journals having high metrics.
- iv. To start M. Tech course in emerging area.

**Publication published through collaborations**

1. Tomar R.S., **Singh S.V.**, Chauhan D.S., “Cascadable low voltage operated current-mode universal biquad filter,” WSEAS Transaction on Signal Processing, vol. 10, pp. 345-353, 2014. [**H index 9**].

**1. Publications in International Journals**

**2015**

**Indexed in SCOPUS**

1. **Gupta, J., Karwal, V., and Dwivedi, V. K.**, "Joint Overlay-Underlay Optimal Power Allocation in Cognitive radio", Wireless Personal Communication, Springer, Vol. 81, No. 4, March 2015. [**H index 29 Impact factor: 0.458**]
2. Jaglan, N. and **Gupta, S. D.**, “Design and Analysis of Performance Enhanced Microstrip Patch Antenna with EBG Substrate” International Journal of Microwave and Optical Technology (IJMOT), Volume 10, Number 2, pp 79-88, March 2015. [**H index 3** ]
3. Shankar, C., Singh, **S. V.**, “A new trans-admittance-mode biquad filter using MO-VDTA,” WSEAS Transaction on Circuits and Systems, vol. 14, pp. 8-18, 2015. EISSN: 2224-266X. [**H Index 10**]
4. **Chaturvedi, B.**, and Maheshwari, S., "Single Active Element Based Cascadable Band-Pass Filters for Low-Q Applications." Journal of Circuits, Systems and Computers, Volume 24, Issue 05, June 2015. ISSN: 0218-1266. [**H Index 19 Impact factor: 0.24**]

**Others**

5. **Chandola, D.**, and Garg, G., “Pull-in Voltage Analysis of Fixed Free Cantilever Beam”, International Journal of Electrical Electronics & Computer Science Engineering Volume 1, Issue 1 (February 2014), ISSN : 2348 2273.
6. Gupta, G., **Singh, S. V.**, and Bhooshan S. V., "VDTA Based Electronically Tunable Voltage Mode and Trans-Admittance Biquad Filter." Circuits and Systems, Vol.6 No.3, March 2015. DOI: 10.4236/cs.2015.63010.

2014

**Indexed in SCOPUS**

7. **Kumar, A.**, Kumar, D., **Mohan, J.**, **Gupta, H. O.**, “Investigation of grid metamaterial and EBG structures and its application to patch antenna” International Journal of Microwave and Wireless Technologies, First View Articles, pp 1-8 doi: 10.1017/S1759078714000944, Published online by Cambridge University Press, 30 Jul 2014. [**H index 8 Impact factor: 0.327**].
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9. Saini, D. S., and **Balyan, V.**, “Top Down Code Search to Locate An Optimum Code and Reduction in Code Blocking for CDMA Networks,” Wireless Personal Communication, Springer, vol. 75, no. 1, pp. 465-482, 2014. DOI 10.1007/s11277-013-1372-9. [**H index 29 Impact factor: 0.458**]
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11. Mehta, A., **Kumar, S.**, and Kumar, R., “A Novel Architecture and PVT Analysis of 4-Bit Manchester Carry Chain Block,” International Journal of Applied Engineering Research, ISSN 0973-4562 Volume 9, Number 20, pp. 6581-6590, 2014. [**H index 3 Impact factor: 7.827**]
12. Kumar, T., **Kalyanasundaram, N.**, Lande, B. K., “Analysis of the generalized case of scattering from a ferromagnetic microwire grid”, Progress In Electromagnetics Research M, vol. 35, pp. 1-10, 2014. [**H index 12**]
13. **Dwivedi, V. K.**, Singh, G., “Moment Generating Function Based Performance Analysis of Maximal-Ratio Combining Diversity Receivers in the Generalized-K Fading Channels”, Wireless Personal Communications, pp. 1-17, 2014. [**H index 29 Impact factor: 0.458**]
14. **Kalyanasundaram, N.**, Agnihotri, A., “Large-signal field analysis of a linear beam travelling wave amplifier for a sheath-helix model of the slow-wave structure supported by dielectric rods. Part 1: Theory”, Progress In Electromagnetics Research B, vol. 57, pp. 87-104, 2014. [**H index 21 Impact factor: 4.735**]
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16. **Mohan, J.**, Maheshwari, S., “Additional high-input low-output impedance voltage-mode all-pass sections” Journal of Circuits, Systems and Computers, vol.23, 2014. DOI: 10.1142/S0218126614500777. [**H index 19 Impact factor: 0.33**]
17. Tomar, R. S., **Singh, S. V.**, Chauhan D. S., “Cascadable low voltage operated current-mode universal biquad filter,” WSEAS Transaction on Signal Processing, vol. 10, pp. 345-353, 2014. [**H index 9**]

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18. Mishra, P. K., Sachdeva, V., and **Gupta, S. D.**, “Fork shaped antenna for Bluetooth application” 2014 International Conference on Medical Imaging, m-Health and Emerging Communication Systems (MedCom), pp. 338-341, Nov. 2014.
19. Mishra, H. O. S., and **Bhatnagar, S.**, “Survey on Different Image Fusion Techniques,” International Journal of Scientific and engineering Research (IJSER ) (ISSN 2229-5518), vol. 5, no. 2, February 2014.
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25. Yadav, V. K., Padhy, N. P., and **Gupta, H. O.**, "The Evaluation of the Efficacy of an ongoing Reform Initiative of an Indian Electric Utility," Energy Sources, Part B: Economics, Planning, and Policy," pp. 291-300, Oct. 2013. [**H index 15**]
26. **Goel, A.**, Gupta, P., and Agrawal, M., "SER Analysis of PTS Based Techniques for PAPR Reduction in OFDM Systems," Digital Signal Processing, Elsevier, Vol. 23, No.1, pp. 302-313, Jan. 2013. [**H Index 37 Impact factor: 1.495**]
27. **Dubey, R. K.**, and Kumar, A., "Non-intrusive speech quality assessment using several combinations of auditory features," International Journal of Speech Technology, Springer, vol.16, issue 1, pp.89-101, 2013 [**H Index 14**]
28. **Joshi, A.**, and Saini, D. S., "Peak-to-Average Power Ratio Reduction of OFDM signals Using Improved PTS Scheme with Low Computational Complexity", in WSEAS Trans. on Communication, 2013 [**H index 11 Impact factor: 0.924**]
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  49. **Mohan, J., Chaturvedi, B.,** Maheshwari, S., "Novel Current-Mode All-Pass Filter with Minimum Component Count", *International Journal of Image, Graphics and Signal Processing (IJIGSP)*, vol.5, no.12, pp.32-37, 2013.DOI: 10.5815/ijigsp.2013.12.05
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Vivek Dwivedi	Kumar, P., Dwivedi, V. K., Singh, G., and Bhooshan, S., “Input Impedance of Gap-coupled Circular Microstrip with Shorting Post”, in Progress in Electromagnetics Research Symposium (PIERS 2009), China. pp. 1634-1638, 23-27 March 2009.	3
Vivek Dwivedi	Sharma, A., Dwivedi, V. K., and Singh, G, “THz rectangular microstrip patch antenna on multilayered substrate for advanced wireless communication systems”, Progress In Electromagnetic Research Symposium (PIERS 2009), Beijing, CHINA, pp. 627-631 March 2009.	6
Vineet Khandelwal	Gupta, A., Mangal, S., Nagori, P., Jain, A., and Khandelwal, V., “Video matting by automatic scribbling using quadra directional filling of segmented frames”, in 2nd IEEE International Conference on Computer Science and Information Technology, ICCSIT 2009, art. no. 5234624, pp. 336-340, 2009.	6
Vineet Khandelwal	Agnihotri, S., Loomba, H., Gupta, A., and Khandelwal, V., “Automated segmentation of gallstones in ultrasound images”, in 2nd IEEE International Conference on Computer Science and Information Technology, ICCSIT 2009 , art. no. 5234996, pp. 56-59, 2009.	3
Vineet Khandelwal	Khandelwal, V., Gupta, A., Kashyap, M., Gandhi, H., and Dhawan, A., “Natural image matting using HSI framework”, in 2nd IEEE International Conference on Computer Science and Information Technology, ICCSIT 2009, art. no. 5234833, pp. 141-144, 2009	3
Vivek Dwivedi	Dwivedi, V. K., and Singh, G. “Improved BER Analysis of OFDM Communication System on Correlated Nakagami Fading Channel,” in International Conference on Recent Advances in Microwave Theory and Applications, India, pp.536-539, Nov. 2008.	7
Vineet Khandelwal	Jain, A., Agarwal, M., Gupta, A., and Khandelwal, V., “A Novel Approach to Video Matting using Automated Scribbling by Motion Analysis”, in IEEE Conference on Virtual Environments, Human-Computer Interfaces and	8



	Measurement Systems (VECIMS 2008), Istanbul, Turkey, pp. 25-30, July 14-16, 2008.	
Vivek Dwivedi	Dwivedi, V. K., and Singh, G., "An efficient BER analysis of OFDM systems with ICI conjugate cancellation method", in Progress In Electromagnetic Research Symposium, Cambridge USA., pp. 166-171, July 2008.	20
Vivek Dwivedi	Sharma, A., Dwivedi, V. K., and Singh, G., "THz Rectangular Patch Microstrip Antenna Design Using Photonic Crystal as Substrate", in Progress In Electromagnetics Research Symposium (PIERS 2008), Cambridge USA, pp. 161-166, July 2008.	20
Vineet Khandelwal	Gupta, A., Khandelwal, V., Srivastava, M. C., and Gupta, A., "Image Processing Methods for the restoration of Digitized Paintings", Thamasat Int. Journal of Science & Technology, ISSN: 0859-4074, vol. 13, No.3, pp. 66-72, July 2008.	18
Neetu Singh	Yadav, K.; Singh, N.; Srivastava, M.C., "Analysis of Adaptive Pilot Symbol Assisted Modulation with Optimized Pilot Symbol Spacing for Rayleigh Fading Channel", International Conference on Signal Processing, Communications and Networking, 2008. ICSCN '08. 4-6 Jan. 2008, Page(s): 405 – 410	2
Samir Dev Gupta	S D Gupta, A Garg, A P Saran, " Improvement in Accuracy for Design of Mutidielectric Layer Microstrip Patch Antenna" International Journal of Microwave and Optical Technology (IJMOT) 3(5), 498-504, 2008.	3
Vineet Khandelwal	M Agarwal, S Gahlaut, V Khandelwal, M C Srivastava, "Exemplar based method to remove cracks in digitized paintings," Proc. of the Second International Conference on Information Processing, pp. 227-233, 2008.	1
Pushpendra Singh	P Singh, S D Joshi, R K Patney, K Saha, "Some studies on nonpolynomial interpolation and error analysis," Applied Mathematics and Computation, 244, pp. 809-821.	4
Vineet Khandelwal	Gupta, A., Srivastava, M. C., Khandelwal, V., and Gupta, A., "A Novel Approach to Fetal ECG Extraction and Enhancement Using Blind Source Separation (BSS-ICA) And Adaptive Fetal ECG Enhancer (AFE)", in Sixth IEEE International Conference on Information, Communications and Signal Processing, NTU Singapore, pp. 1-4, Dec. 2007.	6
Neetu Singh	Yadav, K.; Singh, N.; Maskara, S.L.," Analysis of pilot symbol assisted modulation using modified long range	1

	prediction algorithm for rayleigh fading channel”, International Conference in Central Asia on Internet, 2007. ICI 2007, 3rd IEEE/IFIP, 26-28 Sept. 2007 Page(s): 1 – 4.	
Shamim Akhter	Akhter, S., “VHDL implementation of fast NxN multiplier based on Vedic mathematic”, in 18th European Conference on Circuit Theory and Design, Sevilla, Spain, pp. 472-475, 26-30 August , 2007, .	35
Abhinav Gupta	Gupta, A., Srivastava, M. C., Pandey, S. D., and Bhandari, V., “Modified runlength coding for improved JPEG performance,” in IEEE conference ICICT at Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh, pp. 263-267, 2007.	7
	<b>Total Google Scholar Citations</b>	363

**Conferences, Workshops, Seminars attended by faculty outside JIIT**

**A. B. Bhattacharyya**

1. "Tutorial: Low-Power Digital CMOS Design", (Faculty Development Program on Low Power VLSI Design), February 20-22, 2014, ABES Engineering College, Ghaziabad.

**R. C. Jain**

1. 16th International Conference on Network-Based Information Systems (NBiS), South Korea, Sept. 4-6, 2013
2. Nineteenth National Conference on Communication (NCC)-2013 at IIT New Delhi, Feb. 18-19, 2013.
3. Workshop on "Embedded Guidance, Navigation and Control in Aerospace at Aerospace Department, IISc, Bangalore, 13-15 February, 2012
4. "University day" organized by ST Microelectronics and Synopsys, Noida. Chip Designing and EDA software, 16<sup>th</sup> November, 2010.

**Jitendra Mohan**

1. IEEE International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT-2013), Aligarh, India, November 2013.
2. International Conference on Advances in Electronics, Electrical and Computer Science Engineering - EEC 2012, Dehardun, India, July 2012.
3. IEEE International Conference on Signal Processing, Computing and Control (ISPCC), Solan, India, March 2012.
4. IEEE International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT), Aligarh, India December 2011.

**Vipin Balyan**

1. IEEE International Conference on Signal Processing and Integrated Network (SPIN-2014), Amity University, Noida-India (20-21 Feb. 2014).
2. IEEE International Conference on Software Telecommunication and Computer Networks, SoftCom 2011, Sep 15-17, 2011, Croatia.

**Sajai Vir Singh**

1. IEEE International Conference on Signal Processing and Integrated Network (SPIN-2014), Amity University, Noida-India (20-21 Feb. 2014).
2. IEEE International Conference on Multimedia, Signal Processing and communication Technologies (IMPACT-2013) on 23-25 Nov. 2013 at Aligarh (U.P.)
3. IEEE International Conference on Multimedia, Signal Processing and communication Technologies (IMPACT-2012) on 17-19 Dec., 2011 at Aligarh (U.P.)

**Alok Joshi**

1. Attended and presented paper in International Conference (ARTCOM 2011), Bangalore.

**Bhartendu Chaturvedi**

1. IEEE International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT-2013), Aligarh, India, November 2013.

**Satyendra Kumar**

1. IEEE SSCS Delhi Chapter "Distinguished Lecture Colloquia" on 19 Dec. 2014, STMicroelectronics Greater Noida, India.
2. Synopsys University Symposium 2014 on "Custom IC Design & Device Modelling", on 7th March 2014, Synopsys and EIGEN Technologies Pvt. Ltd., New Delhi

**Vinay Tikkiwal**

1. IEEE SSCS Delhi Chapter "Distinguished Lecture Colloquia" on 19 Dec. 2014, STMicroelectronics Greater Noida, India.
2. Synopsys University Symposium 2014 on "Custom IC Design & Device Modelling", on 7th March 2014, Synopsys and EIGEN Technologies Pvt. Ltd., New Delhi.

**Raaziyah Shamim**

1. 9th International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness, GBU, Greater Noida (11-12 Jan. 2013).

**Shruti Kalra**

1. Workshop on “Enhancing the outreach of Electronic System Design through e-learning” held at CDAC Noida On 20th Nov 2014.
2. Distinguished Lecture Colloquia on Analog/Digital Circuits at STMicroelectronics, Greater NOIDA, 23-24 July, 2012.
3. One day workshop on “COMSOL Multiphysics simulations” organized by COMSOL, Delhi on 28th April, 2011.
4. “University day” organized by STMicroelectronics and Synopsys, Noida in which Chip Designing and EDA software was discussed held on 16<sup>th</sup> November, 2010.

**Ashish Goel**

1. Nineteenth National Conference on Communication (NCC)-2013 at IIT New Delhi, Feb. 18-19, 2013.
2. Ninth IEEE International Conference on Wireless and Optical Communications Networks (WOCN)-2012 at IIT Indore, Sept. 20-22, 2012.

**Richa Gupta**

1. IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE 2014), 9-11 May 2014, Jaipur.
2. Twenty First International Conference of Forum for Interdisciplinary Mathematics, Statistics and Computational Techniques, IMSCT 2012- FIM XXI, Chandigarh, Dec. 15-17, 2012.

**Manish Kumar**

1. IEEE SSCS Delhi Chapter seminar at STMicroelectronics, Greater NOIDA on June 21, 2013.

**Abhishek Srivastava**

1. Workshop “TECHWEEK 2011”, University Day Agenda, at ST Microelectronics, 11<sup>th</sup> March 2011.

2. “University day” organized by STMicroelectronics and Synopsys, Noida in which Chip Designing and EDA software was discussed held on 16<sup>th</sup> November, 2010.

### **Kirmender Singh**

1. Workshop “TECHWEEK 2011”, University Day Agenda, at ST Microelectronics, 11<sup>th</sup> March 2011.
2. “University day” organized by STMicroelectronics and Synopsys, Noida in which Chip Designing and EDA software was discussed held on 16<sup>th</sup> November, 2010

### **Bhawna Gupta**

1. Workshop on Medical Imaging: Techniques & Clinical Applications organized by Centre for Biomedical Engineering Indian Institute of Technology Delhi, 3rd & 4th April, 2015.
2. “Confluence-2011”, International Conference on Information Technology, New Delhi, from 27th Jan.-28th Jan., 2011.
3. “INDIA TELECOM-2010”, International Conference on Telecom, New Delhi, 9th Dec.-11th Dec., 2010.

### **Smriti Bhatnagar**

1. Workshop on Medical Imaging: Techniques & Clinical Applications organized by Centre for Biomedical Engineering Indian Institute of Technology Delhi, 3rd & 4th April, 2015.
2. “Confluence-2011”, International Conference on Information Technology, New Delhi, from 27th Jan.-28th Jan., 2011.
3. “INDIA TELECOM-2010”, International Conference on Telecom, New Delhi, 9th Dec.-11th Dec., 2010

### **Vikram Karwal**

1. Attended SystemC training at Cadence Design Systems, September 2014.
2. Workshop on “Advanced DSP Design Techniques” at IIT Kharagpur, 11-15 July, 2011.
3. Workshop on "VLSI Chip Design, Verification and Registration Issues" at CDAC NOIDA, 20th June, 2011.

4. Workshop on “Fundamentals of Automatic Speech Recognition” at CDAC Noida, 7th -8th March, 2011.
5. Workshop on “Altium Seminar Series - Modern FPGA and PCB design processes” at New Delhi, 9th Feb., 2011.
6. Session Chair and TPC member in “International Conference on Signal Processing and Integrated Networks (SPIN 2014)” technically co-sponsored by IEEE, Feb 2014.

#### **Shamim Akhter**

1. Workshop on "VLSI Chip Design, Verification and Registration Issues" at CDAC NOIDA, 20<sup>th</sup> June, 2011.
2. Workshop on “Fundamentals of Automatic Speech Recognition” at CDAC Noida, 7<sup>th</sup>-8<sup>th</sup> March, 2011.
3. Workshop “TECHWEEK 2011”, University Day Agenda, at ST Microelectronics, 11<sup>th</sup> March 2011.
4. Workshop on “Altium Seminar Series - Modern FPGA and PCB design processes” at New Delhi, 9<sup>th</sup> Feb., 2011.

#### **Gaurav Verma**

1. Faculty Development Program on “Low-Power VLSI Design" at ABES Engineering College, Ghaziabad, February 20-22, 2014

#### **Rajesh Kumar Dubey**

1. Attended 6 days International Conference, Acoustics 2013 New Delhi, organized by the Acoustical Society of India (ASI) and the French Acoustical Society (SFA) under the aegis of the CSIR-National Physical Laboratory, New Delhi during 10<sup>th</sup>-15<sup>th</sup> Nov. 2013.
2. Workshop on “Fundamentals of Automatic Speech Recognition” at CDAC Noida, 7th -8th March, 2011.

#### **Pankaj Kumar Yadav**

1. Short Term Course on “Next Generation Networks” at IIT Delhi, 9th-10th Jan, 2010.

**Rahul Kaushik**

1. Five Day ICT based Faculty Development Programme on Optical Fiber Communication from 22nd to 26th September, 2014 at ABES Engineering College, organized by NITTTR, CHANDIGARH under NMICT, MHRD, Govt. of India.
2. Short Term Course on “Next Generation Networks” at IIT Delhi, 9th-10th Jan, 2010.

**Juhi Gupta**

1. Short Term Course on “Next Generation Networks” at IIT Delhi, 9th-10th Jan, 2010.

**Sandeep Joshi**

1. Short Term Course on “Next Generation Networks” at IIT Delhi, 9th-10th Jan, 2010.

**Saurabh Chaturvedi**

1. Saurabh Chaturvedi attended and presented papers in “International Conference on Signal Processing and Integrated Networks (SPIN-2014)”, Amity University, NOIDA, India during Feb. 20-21, 2014.

**Shradha Saxena**

1. Workshop on, “Recent Trends in Semiconductor Devices and Technology” at Deen Dayal Dayal Upadhyaya College, Karampura, New Delhi, 13-14 Sept, 2014.

**Shivaji Tyagi**

1. IEEE CAS Workshop on, “Advanced Topics in VLSI Circuit Design” at IIT, Roorkee, 18-19<sup>th</sup> Oct, 2014.
2. Synopsys University Symposium on “SoC Architecture Design & Embedded Software Development with Virtual Prototyping”, 30<sup>th</sup> Apr, 2015
3. IEEE EDS Workshop on, “GaN Devices Fabrication, Device Modeling and Power Amplifiers” at IIT, Roorkee, 10<sup>th</sup> June, 2015.