Pranalika Dhi

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)

BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Accredited by NAAC and Accredited by NBA: UG Programmes-CSE, ECE, EEE & ME

Approved by AICTE, New Delhi and Affiliated to JNTUH

Pranalika Dhi

..... Channel of Vast knowledge

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July, 2021

About the Electronics and Communication Engineering Department

The Electronics & Communications Engineering Department was established in the year 2001 as one of the prime branches in the Bharat Institute of Engineering & Technology. It is currently running undergraduate i.e., B.Tech., and Post graduate Courses in (a) Embedded Systems, (b) VLSI Technologies and (c) Wireless Mobile Communications. The course was accredited by National Board of Accreditation (NBA) in 2007 for a duration of 3 years and second time accreditation in 2019 for a duration of 3 years from the Academic Year 2019-2020 to 2021-2022. The ECE branch has a well-qualified, experienced and dedicated faculty. A few of the Senior Professors have received best performance awards from Hon'ble Prime Minister of India for their outstanding service done to the organization. Some Senior Professors have been directors of DRDO Labs, Vice Chancellors and Chancellors of reputed Universities.

Shri Col B. Venkat
Director, Faculty Development Cell,
AICTE
Ministry of Education, Govt. of India

I am glad to know that, The Electronics and Communications department of Bharat Institute ofEngineering and Technology is publishing an annual Magazine “Pranalika Dhi…. Channel of vast knowledge”.

It is time for all of us to get acquainted with the advancements and to provide solutions for theunresolved challenges. This Magazine will provide an opportunity for all the composers and readers to deliberate and discuss the latest developments in this field.

I congratulate and compliment all the ECE faculty members for this and congratulate all the participants and wish the organizers for the grand success.

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Shri Dipan Sahu
Assistant Director , Institution Innovation Council
AICTE
Ministry of Education, Govt. of India

It is a great honor for me to write for Department of Electronics & Communication Engineering, Bharat Institute of Engineering and Technology for their great endeavors for publishing the annual Magazine "Pranalika Dhi…. Channel of vast knowledge".

Magazine is that features and talks about the enterprise solutions that can play a key part in redefining the goals of organizations. The leading sources are sharing innovative and unique articles developed by faculties and students of the Department. One can say that the projection is much needed in the technology arena which has become enriched with technological advancements.

I extend my warm greetings to all the participants and Editors of the Magazine and convey my best wishes to the faculties and students for the success of Magazine.

Shri Vipin Kumar
Assistant Director, NEAT Cell
AICTE
Ministry of Education, Govt. of India

The theme of the “Pranalika Dhi…. Channel of vast knowledge” is extremely relevant and benefit to the fraternity of Academicians, Industrialists and Technical Students. The recent advances in Electronics & Communication Engineering have changed in many ways. This has certainly increased the efficiency and effectiveness of using the knowledge for development of the society.

I appreciate the efforts of the ECE department for publishing the annual Magazine and pray for it to be enriching, fruitful and memorable. I wish the Electronics and Communications department of Bharat Institute ofEngineering and Technology, a grand success for Magazine.

Prof. G. Kumaraswamy Rao
Director

Bharat Institute of Engineering and Technology
Hyderabad, Telangana

TheMagazine brings researchers, academics, and industry professionals together at one platform in a hot research area to share their technical expertise, research findings leading to future scope of world's technological developments. This important publication is to bring the world together in harmony through Communications and Networking Technology research, application, education, and incubation of new ideas.

For "Pranalika Dhi…. Channel of vast knowledge", I congratulate all the members and students of Electronics & Communication Engineeringdepartments for their efforts and initiative and wish them the very best for success throughout their life. I congratulate all the concerned with gratitude and wish the Magazine agrand success.

Prof. Althaf Hussain
Director, Academic and Planning

Bharat Institute of Engineering and Technology
Hyderabad, Telangana

It gives me immense pleasure to know that Electronics & Communication Engineering department of Bharat Institute of Engineering and Technology is coming up with a Magazine “Pranalika Dhi…. Channel of vast knowledge” for the academic year 2020-21. The magazine is the collection of innate talent and presentation skills of students on general issues other than their core subjects.

I congratulate the faculties and students foe working together for the purpose. I also congratulate all the contributors and editors of the magazine for their hard work in preparing a quality product. I wish quality of the articles will improve year by year and wish the department all the best in their future endeavors.

Dr. J. P. Singh

Principal, IIC President

Bharat Institute of Engineering and Technology

Hyderabad, Telangana

It gives me immense pleasure to write a message for “Pranalika Dhi…. Channel of vast knowledge”. Electronics and Communications department of Bharat Institute ofEngineering and Technology has borne the mantle of excellence, committed to ensure the students their own space to learn, grow and broaden their horizon of knowledge by indulging into diverse spheres of learning. In our endeavor to raise the standards of discourse, we continue to remain aware in order to meet with the changing needs of our academia and industry.

I am sure that this Magazine will provide an affable environment for the students, researchers and faculties to freely exchange their views and ideas with others. I convey my warm greetings and felicitations to the publishing committee and the participants and extend my best wishes for the success of the Magazine.

Prof. Arun Kumar

College R & D In charge

It is essential to spread the awareness about the latest developments and achievements of engineering and technologies, especially among students and the younger generations tomotivate and excite them to gear up for the future of Indian Engineering and Technological applications. The Department of Electronics and Communications Engineering of Bharat Institute ofEngineering and Technology is committed to add value to intellectual, moral, social and technological capabilities of a student.

I congratulate the ECE faculty for publishing "Pranalika Dhi…. Channel of vast knowledge" regarding the vital issues that are pertinent to Electronics & Communication Engineering. My best wishes for thegrand success of the Magazine.

Dr. Sanjay Kumar Suman

College Admin Incharge, CoE

Dept. Academic Incharge,

Bharat Institute of Engineering and Technology
Hyderabad, Telangana

"The way we manage when we have nothing and the way we manage when we have everything" is an art and science both, which comes from knowledge and experience. Books, magazine,newsletters, articles etc are the prime source of knowledge. "Initiator is leader and leader isreader". We know the value of hands that holds this magazine. The gem like flame and thirst for vast knowledge through information from various channels are the seeds for the evolution of "Pranalika Dhi…. Channel of vast knowledge"

I am extremely delighted to state that our department: "The department of Electronics and Communication Engineering" is launching the department magazine of annual edition which comprises glory of department, lot of innovative ideas in the form of articles, information on technological advancements, views of our stake holders and many more to feed our brain. I congratulate and acknowledge the editorial team to bring out this wonderful magazine. Best Wishes.

Dr. Rajeev Shrivastava
Dept. Admin In charge,
Associate Professor, ECE

Bharat Institute of Engineering and Technology
Hyderabad, Telangana

I am delighted in acknowledging the Magazine "Pranalika Dhi…. Channel of vast knowledge" published by the Department of Electronics and Communication Engineering. This Magazine is an effort in the direction to give an exposure to the academicians on the recent development in our field. This Magazine also provides a platform to the students to exhibit their inherent talents both as participants and readers.

I place on records with appreciation the hard work, involvement and effort taken by the team of faculty and students. I wish them for their endeavors to spread knowledge and congratulate all the concerned with gratitude and wish the grand success.

Dr Papiya Dutta
Chief Editor, Associate Professor, ECE
IIC Vice President,

Bharat Institute of Engineering and Technology
Hyderabad, Telangana

Future education is mainly technology oriented. Department of Electronics and Communication Engineering of Bharat Institute of Engineering and Technologyis committed to build and sustain itself as an institution where quality is the hallmark in each andevery activity. Besides acquiring technical skill, our students are molded to be a competent citizen of our society and nation.

I wish the composers and readers of "Pranalika Dhi…. Channel of vast knowledge" to find the articles and information inspiring and enjoyable and also enable them to network with their peers to assess and take forward these technical areas further.I congratulate the authors for publishing such a knowledgeable content and my best wishes for the grand success of the Magazine.

Co- Editor's Page

"The purpose of a writer is to keep civilization from destroying itself."

Dr. Shahnaz K. V.

"The most valuable of all talents is that of never using two words when one will do."

Dr. Kamayani Shrivastava

"You should write because you love the shape of stories and sentences and the creation of different words on a page."

Dr. Abhishek Kumar

“Writing comes from reading, and reading is the finest teacher of how to write.”

Dr. Anirban Kanungoe

“Everything important is showed up in the magazines first. It's the proving ground for new writers and new ideas.”

Mr. Kailash Sinha

Vision and Mission of The Department

Vision

- The vision of the Department of Electronics and Communication Engineering is to effectively serve the educational needs of local and rural students within the core area of electronics and communication engineering and develop high quality engineers and responsible citizens..

Mission

- The mission of the Department of Electronics and Communication Engineering is to work closely with industry, research organizations to provide high quality education in both theoretical and practical applications of electronics and communication engineering..

Program Educational Objectives (PEO's)

- **PEO1:** Graduates will be able to synthesize mathematics, science, engineering fundamentals, laboratory and work-based experiences to formulate and solve engineering problems in Electronics and Communication engineering domains and shall have proficiency in Computer-based engineering and the use of computational tools.
- **PEO2:** Graduates will succeed in entry-level engineering positions within the core Electronics and Communication Engineering, computational or manufacturing firms in regional, national, or international industries and with government agencies.
- **PEO3:** Graduates will succeed in the pursuit of advanced degrees in Engineering or other fields where a solid foundation in mathematics, basic science, and engineering fundamentals is required..
- **PEO4:** Graduates will be prepared to communicate and work effectively on team based engineering projects and will practice the ethics of their profession consistent with a sense of social responsibility.
- **PEO5:** Graduates will be prepared to undertake Research and Development works in the areas of Electronics and Communication fields.

Program Specific Outcomes (PSOs)

- ***PSO1: Professional Skills:*** An ability to understand the basic concepts in Electronics & Communication Engineering and to apply them to various areas, like Electronics, Communications, Signal processing, VLSI, Embedded systems etc., in the design and implementation of complex systems.
- ***PSO2: Problem-Solving Skills:*** An ability to solve complex Electronics and communication Engineering problems, using latest hardware and software tools, along with analytical skills to arrive cost effective and appropriate solutions.
- ***PSO3: Successful Career and Entrepreneurship:*** An understanding of social-awareness & environmental-wisdom along with ethical responsibility to have a successful career and to sustain passion and zeal for real-world applications using optimal resources as an Entrepreneur.

Program Outcomes (POs)

- **PO1:Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **PO2:Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **PO3:Design/Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **PO4:Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **PO5:Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **PO6:The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- **PO7:Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **PO8:Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **PO9:Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **PO10:Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **PO11:Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **PO12:Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Outcomes (POs)

- **PO1:** An ability to independently carry out research /investigation and development work to solve practical problems.
- **PO2:** Students should be able to write and present a substantial technical report/ document.
- **PO3:** Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
- **PO4: Engineering Knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems related to Electronics & Communication and Engineering.
- **PO5: Modern Tool Usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **PO6: Life-Long Learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Contents

About BIET

Bharat Institutions sprawling 120 acres campus with a built-up area of 6, 00,000 sq. ft at Mangalpally, Ibrahimpatnam. Bharat Institutions campus is a beautiful and serene atmosphere ideally suited for technical education. The infrastructure and facilities available on campus are amongst the very best. It is a wholly self-contained campus comprising of everything that students on campus would ever require. In order to take care of aesthetic dimensions of the campus, considerable efforts have been made in the recent past to beautify the campus. Greenery in terms of the grass, permanent green plants, trees and flowers have been laid down all over the campus. Horticulture maintenance and development has been meticulously monitored to keep up with the changing weather.

Department of Electronics & Communication Engineering

About the Department

Vision:

The vision of the Department of Electronics and Communication Engineering is to effectively serve the educational needs of local and rural student within the core area of electronics and communication engineering and develop high quality engineers and responsible citizens.

Mission:

The mission of the Department of Electronics and Communication Engineering is to work closely with industry, research organizations to provide high quality education in both theoretical and practical applications of electronics and communication engineering.

Faculty:

- Highly qualified and experienced Faculties
- Total Number of faculty: 69
- Doctoral degree: 18
- M.Tech Degree: 51
- Teaching M.Tech: 06

Laboratories:

Engineering education is incomplete without laboratory practice. The overall goal of engineering education is to prepare students to practice engineering and in particular to deal with the nature of problems faced by society. The laboratory practice has been an important part of professional and engineering undergraduate education; a laboratory is an ideal place for active learning. Students learn in a real-world environment, function as team members.

All the department labs are listed below:

1. Analog Communication Lab
2. Digital Communication Lab
3. Microwave and Digital Communication Lab
4. IC & PDC Lab

5. Digital Signal Processing Lab
6. Microprocessors & Microcontrollers Lab
7. Digital IC Applications Lab
8. Basic Simulation / ECA - Lab
9. Linear IC Application Lab
10. Analog Electronics Lab
11. Electronics Devices and Circuits /ECA
12. Basic Electrical and Electronics Engineering Lab
13. Analog and Digital Electronics Lab
14. Digital System Design Lab
15. VLSI &ECAD Lab
16. Analog and Digital CMOS Lab
17. M.Tech: Embedded System Lab
18. M.Tech: Wireless Communications and Networks Lab
19. 19 .M.Tech: VLSI Design & Verification Lab
20. Digital Design and Verification Lab

COURSE DELIVERY METHODS

- ICT Supported Learning
- Expert Lectures
- Skill Development Programs
- Experimental Learning
- Chalk And Talk
- Seminars, Workshops & Guest Lectures
- Project-Based Learning
- Multimedia supported class rooms
- Preparation for Competitive exams such as GATE, IELTS, CET and Job Interview.

Students:

- Total Number of placement in the year 2019-20: **21 (12.3%** placements)
- Number of students enrolled in the Higher education: **32**
- Graduated Students: **136 out of 172 (79%)**

Faculty Innovations:

- ICT Supported Learning
- Soft Skills Workshops
- Classroom discussions
- Short presentations
- Group projects

- Mind Map
- Role play
- Z TO A APPROACH
- Brown Bag Approach

ECE Collaborations:

- Industry Interaction
    - Key speakers from companies like ICON Telecommunications, ACCEN technologies, L&T, SGGSIT, DERL, GIATECH, BEL, ANURAG Pragathi Micro Instruments have addressed our students through various seminars and guest lectures. This is a continuous practice to enrich the knowledge base of students.
- Sponsored Projects for students
- Guest lecturers
    - Several guest lecturers and workshops are conducted for the students and faculty where organizations such as DRDL, ECIL, HCL, CMS, Sierra Atlantic, BHEL and Wipro which enriches all with their technical knowledge.
- Signed MOU with SK DEEPTECH in Association with SK Computers Singapore on 23rd June 2021 at 2PM
- Signed MOU with TPCRA/IBA powered by Dragon Chain USA on 21st June 2021 at 2PM

SAP EDUCATION PARTNER and BIET along with SAP India:

- **SAP ERP Dongle Site Course Licenses:**
    - SAP ABAP (ABAP)
    - SAP Materials Management (MM)
    - SAP Financial Accounting (FI)
    - SAP Sales and Distribution (SD)
- **SAP ERP Dongle Site Licenses:**
    - SAP ERP Dongle Site License: 240 users
    - SAP Learning Hub License: 10 users
    - Question mark Perception (QMP) License: 120 users

Scope of Electronics & Communication Engineering

Electronics and Communications Engineering is at the heart of any product or services that is being used in the modern world. In ECE department, students will learn both about the software and the underlying hardware used in the smart devices that are being used nowadays. Students of ECE have openings in a range of Hardware and Software companies like Texas Instruments, Siemens, Xilinx, MediaTek which manufacture advanced circuits used in Robots and other smart Devices. Students of ECE will also get a chance to enter cutting edge Communication Technology companies like Qualcomm, Broadcom, Samsung Electronics, Cisco etc. Getting a chance to join innovations in Communications technology companies is only possible for students of ECE only.

Specialization	Target Company	Specialization	Target Company
VLSI Circuit Design	XILINX	Radar, IOT	HAL
VLSI Circuit Design	cadence	Radar, Wireless Communications	DRDO
VLSI Circuit Design	Mentor Graphics	Power Electronics	POWER ELECTRONICS
Communications	Qualcomm	Optical Communications	tellabs
Networking	TEJAS NETWORKS	General Electronics	BHARAT ELECTRONICS
Networking	CISCO	Telecommunications	Jio
IOT	SIEMENS	Quantum Electronics	2D Semiconductors
IOT	Bosch IoT Suite	Missile Manufacturing	Raytheon

Faculties of the Department:

			
Prof. G. Kumaraswamy Rao **Director BIET** **Former DRDO Scientist** **Exp. 55 years** **Research Specialization: Wireless Communication & Radar System**	**Prof. Sanjay Kumar Suman** **Exp. 25 years** **Research Specialization: Wireless Communication & Information Theory**	**Dr. Amit Agrawal** **Exp. 23 Years** **Research Specialization: Communication, Robotics & IOT**	**Dr. Papiya Dutta** **Exp. 17 Years** **Research Specialization: Wireless Communication, Cognitive Radio, IOT**
			
Dr RAJEEV SHRIVASTAVA **Exp:- 16 Years** **Research Specialization: Human Intelligence and AI**	**Dr. Ritesh Kumar Kushwaha** **Exp:- 09 Years** **Research Specialization: RF and Antenna Design**	**Dr Kamayani Shrivastav** **Exp:- 11 Years** **Research Specialization: Digital Signal processing Wireless Communications**	**Dr. Anirban Kanungoe** **Exp. 1 Years** **Research Specialization: Optical Networks**
			
Dr. Anil Kumar Sahu **Exp. :- 13 years** **Research Specialization: VLSI Design and Verification**	**Dr. Neeraj Kumar Misra** **Exp. :- 11 Year** **Research Specialization: Low Power VLSI, Quantum Computing**	**Dr. SHAHNAZ K V PhD** **Exp. :- 18 Year** **Research Specialization: MIMO Wireless Communication OFDM**	**Dr. Abhisek kumar** **Exp.:- 11 Year** **Research Specialization: Wireless Communication Cognitive Radio, D2D system**

			
Dr. Prateek Asthana **Exp. :- 01 Year** **Research Specialization:** **Micro Electro-Mechanical SystemsMicro Electro-Mechanical Systems**	**Mr. Prashanth Bachanna** **Exp:- 09 years** **Research Specialization:** **Reconfigurable VLSI circuits** **M. Tech, PhD pursuing**	**Mrs. Krishnaveni** **Exp:- 14 years** **Research Specialization:** **MSEE Embedded systems**	**Mr. Kailash Sinha** **M.Tech** **Exp. :- 10 years** **Research Specialization:** **Mobile Communication**
			
Mr. I.RAI KUMAR **PhD pursuing** **Exp-21 Years** **Research Specialization:** **VLSI-SD Opto-VLSI**	**Mr. M. KHALEEL ULLAH KHAN** **Exp:- 18 Years** **Research Specialization:** **Wireless Communications Wireless Sensor Networks**	**Mrs. Chennaboina Kranthi Rekha Ph.D Pursuing** **Exp:- 21 Years** **Research Specialization:** **Systems and Signal Processing**	**Mr. Prashant Krishnaji Kulkarni** **Ph.D Pursuing** **Exp:- 22 Years** **Research Specialization:** **Wireless sensor network and Optimization**

Faculty List

Name	Designation	Qualification
G. Kumaraswamy Rao	Professor	M.Tech
Dr. Sanjay Kumar Suman	Professor	Ph.D.
Dr Rajeev Shrivastava	Associate Professor	Ph.D.
Dr Papiya Dutta	Associate Professor	Ph.D.
Dr Anil Kumar Sahu	Associate Professor	Ph.D.
Dr Amit Agrawal	Associate Professor	Ph.D.
Dr. Neeraj Kumar Misra	Associate Professor	Ph.D.
Dr. Shahnaz K V	Associate Professor	Ph.D.
Dr. Abhishek Kumar	Assistant Professor	Ph.D.
Dr.Anirban Kanungoe	Assistant Professor	Ph.D.
Dr. Ritesh Kumar Kushwaha	Assistant Professor	Ph.D.
Dr Prateek Asthana	Assistant Professor	Ph.D.
Dr Kamayani Shrivastav	Assistant Professor	Ph.D.
R.Sathish Kumar	Assistant Professor	M.Tech
M B R Srinivas	Assistant Professor	M Tech
CH/ Kranthi Rekha	Assistant Professor	M. Tech (Pursuing Ph.D.)
Chandika Mohan Babu	Assistant Professor	M.Tech
I.Ravi Kumar	Assistant Professor	M.Tech
Mr.Prashant K Kulkarn	Assistant Professor	M. Tech (Pursuing Ph.D.)
D.Sankara Reddy	Assistant Professor	M. Tech (Pursuing Ph.D.)
T.V.Suresh Kumar	Assistant Professor	M.Tech
G Joy Sangeeth Raj	Assistant Professor	M.Tech
G.Surendar Reddy	Assistant Professor	M.Tech
N.Pitcheswararao	Assistant Professor	M.E
B.Krishnaveni	Assistant Professor	MS (Pursuing Ph.D.)
Prashant B	Assistant Professor	M. Tech (Pursuing Ph.D.)
M.Khaleel Ullah Khan	Assistant Professor	M.Tech
Neeta Ingale	Assistant Professor	M.Tech
Kailash Sinha	Assistant Professor	M. Tech (Pursuing Ph.D.)
K.Gouthami	Assistant Professor	M Tech
O.Saritha	Assistant Professor	M.Tech
Mekala Prashanth	Assistant Professor	M.Tech
Nimmanagoti Sathish	Assistant Professor	M Tech
Sandhya Daraboina	Assistant Professor	M Tech
N Soumya	Assistant Professor	M Tech
Kontham Gouthami	Assistant Professor	M Tech
Merugu Sreelatha	Assistant Professor	M Tech
Alwala Rajashekar	Assistant Professor	M Tech
G.Shiva Kumar	Assistant Professor	M Tech
Gundla Vinod Kumar	Assistant Professor	M Tech
Kesari Ananda Samhitha	Assistant Professor	M Tech

Lab Facilities in The Department

Highlights of the Major Assets:

Sr. no	Name of the Software	No. of Licenses	Validity
1.	Matlab Software i. Simulink ii. Communication toolbox iii. Control System Toolbox iv. DSP System Toolbox v. Image Processing Toolbox vi. Signal Processing Toolbox	40 30 10 10 10 10 10	Perpetual (Server based)
2.	Mentor Graphics Frontend & Backend (HEP1 & HEP2)	50	3 Year, 2 Months (Server based)
3	Cadance Standard Bundle Analog & Digital FE &BE	50	3 Year (Server based)
4	OrCAD Simulation Suite i. OrCAD Capture ii. OrCAD PSPICE Analysis	60	Perpetual
6	FPGA BOARD FPGA SPARTANXC3S524 in TQG144 Package, Flash Memory 16Mb SPI Flash Memory (M25P16) FPGA configuration Via JTAG and USB	20	Hardware
7	Logic Analyzer and Patter Generator Channel 32 BW 200MHz, Max sample rate 200Msa/s, Memory Size 256Kbps for	1	Hardware
8	Dell Poweredge T30 Server with Dell original hard disk and RAM, Intel®Xeon ®processor E3-1225 v5 3.3 GHz CPU, Intel® HD Graphics P4600, 2*8GB Memory (Max 64 GB) 1TB* 7.2K rpm SATA Hard drive- Non HD plug, DVD rw (total 4 hdd bays), 1gigabit lan, onboard SATA controller	3	Hardware
9	Xilinx Vivado Software	40	Perpetual

10	DSP C6713 evaluation kits	5	Hardware
11	Code Composer Studio (CCS)	15	Perpetual
12	Arduino IDE	10	Hardware
13	Cortex-M3 Control board set with build in IDE	5	Hardware
14	NGSPICE	10	Perpetual
15	Raspbery Pi	10	Hardware
16	Sensor Mode	3	Hardware
17	**Digital Storage Oscilloscope (DSO)-100MHz**, 2 channel, BW:100MHz, Real time sampling:1G Sa/s, Memory Depth:2 Mbps, Display:7 inch, Make: Scientific, Model No: SMO1002 (Unit-01)	01	Hardware
18	**Virtex-6 Development Board**	05	Hardware

Lab wise Equipment Details:

S.No.	Name of the Laboratory (As per JNTUH Curriculum 2020-2021)	Lab Room Number & Location	Name of the Important equipment
1	B.S. LAB & ADC Software	NA-106 (Ground Floor)	OPTIPLEX 3060 Mini systems (30), MATLAB 9.5 (20).
2	MW LAB & ADC LAB	NA-109 (Ground Floor)	CRO(0-20M Hz) dual channel (10 unit), Function Genarator (0-2MHz) (5 Unit), Spectrum Analyzer,3 MHz(1 unit), Regulated Power Supply(0-30v) (2 unit), Amplitude Mod/Demod Kit (5 unit), Frequency Mod/Demod Kit (6 unit), DSB-SC Mod/Demod Kit (3 unit), SSB SC Mod/Demod Kit (1 unit), PAM/PPM/PCM/PWM/DM Mod/Demod Kit (2 unit each), Frequency Div. MUX/DEMUX kit (2 unit),

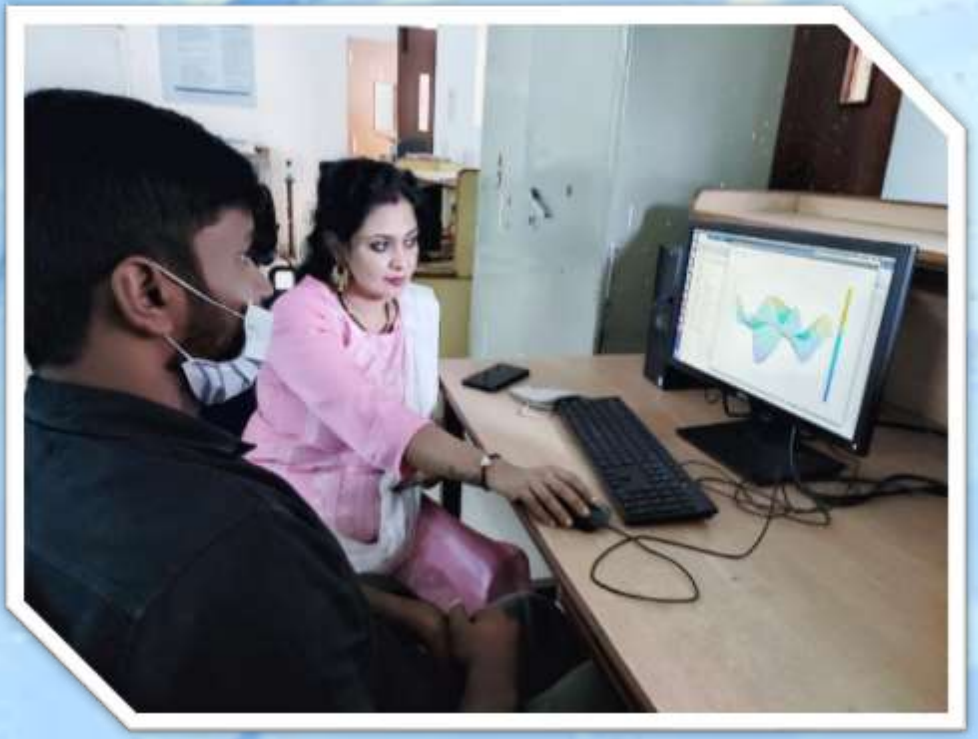
			PSK/BPSK/DPSK/QPSK generation and Detection kit (2 units each).
3	DSD Lab & ICA Lab	NA-214 (First Floor)	Logic Gates Trainer Kits (02), 7404(10), 7408(10), 7432(10), 7486(10), RPS (Aquila)(16), RPS (Physitech)(12), Bread Board Trainer Kits(13), Bread Boards(15), Logic Gates Trainer Kits(02), IC 7400(10), IC 7402(10), CRO(15), Function Generators(16), Adder/Subtractor Kits(02), IC 7483(05), IC 7486(10), Flip Flop Trainer Kits(03), IC 74157(10), Comparator Trainer Kit (01), IC 7485(05), IC 7474(05),
4	Project Lab	NA-205 (First Floor)	Computer (14), 8051 microcontroller development kit (05), ARM Board (05), Dell Server (1).
5	VLSI LAB & ECA Software Lab	NA-306 (Second Floor)	Computers with OS latest specifications(30 units), CAD simulation tool for VHDL (15 units), CMOS designing using tools like Cadence/ synopsis (30 units), FPGA kits (15 units), Pattern/Bit Generator and analyzer (32 channel) (1 unit).
6	EDC/ ADE/DE Lab & ECA-Hardware	NA-311 (Second Floor)	Cathode Ray Oscilloscopes & Probes, Dual Regulated Power Supplies, Function Generators, Trainer Kits Millimeters, Ammeters, Voltmeters, Decade Resistance Boxes,

			Decade Capacitances Boxes, Decade Inductance Boxes, Bread Boards.
7	R & D LAB	NA-305 (Second Floor)	PCs- 13 Software Installed : MATLAB 2017, NA Multisim 14.1
8	LICA LAB	O-203 (Second Floor)	Regulated Power Supply-10, Function Generator-8, Cathode Ray Oscilloscope-10, Digital Multimeters-5, Generic IC Trainer Kits-2, IC 741,555,565,723-40 each, IC 7805,7809,7912-30 each.
9	MPMC Lab	O-302 (Second Floor)	Microprocessor(8086) kits-15, Micro controller (8051) kits-15, LCD Interfacing Kits-2, Matrix keyboard interfacing kits -2, DMA Controller kit-1, ADC Interfacing kits-2, DAC Interfacing kits-2, 8255 study cards-2, 8251 USART-2, Stepper Motor control Interface -2, Computers -15.
10	DSP II & DCN Lab	O-402 (Second Floor	DSP Trainer Kit (1), 30 Computer Systems, Matlab version 9.5 (20).

Pictorial tour of the Department Labs:

A pictorial view of R&D Lab having 50 workstations for exclusive R&D purposes. All computers in all laboratories of ECE department are equipped with 8th Generation Core i3 processors with minimum 8 GB RAM.

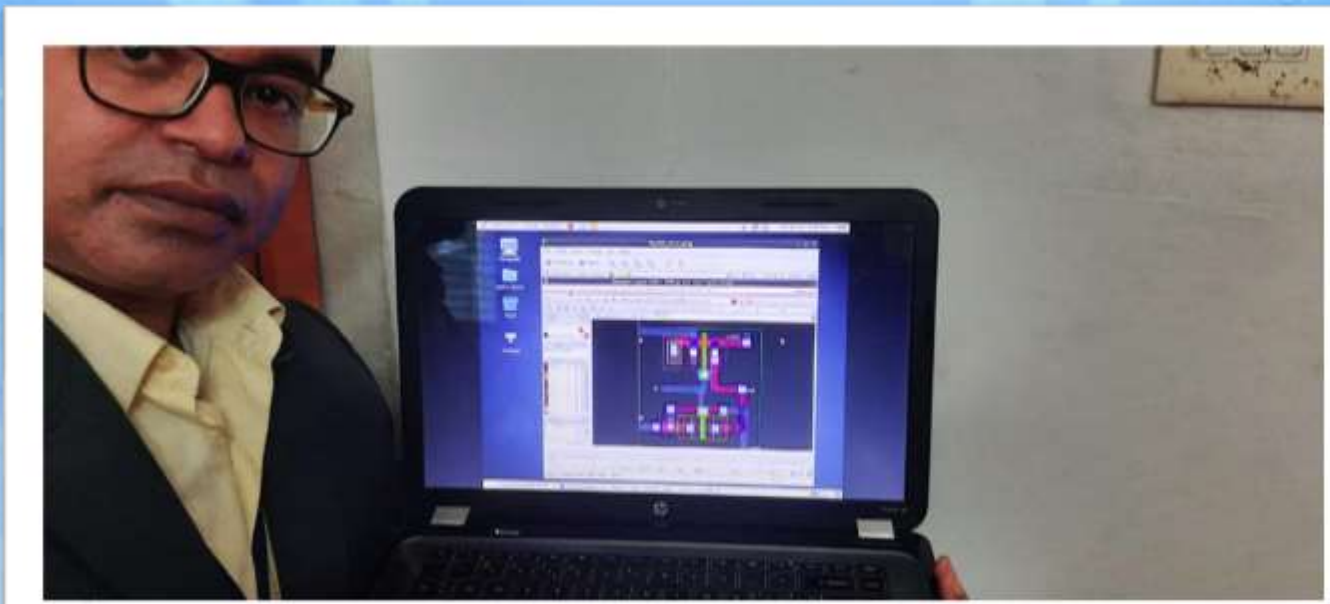
Mr. Mohan Babu teaching students via online lectures. All faculties of BIET are equipped with the latest digital tools (like Laptop, Digital Writing Pad, Bluetooth headsets) necessary for effective online classes.



Dr. Papiya Dutta explaining the waveforms for Wireless Communications on MATLAB. The ECE department of Bharat Engineering College are equipped with 150 licenses of the latest version of MATLAB software. It is used for B. Tech and M. Tech Lab practicals and also for research by faculty and students.

Dr. Anil Kumar Sahu demonstrating Spectrum sensing to student in Microwave Engineering Laboratory. The Microwave Engineering Laboratory of ECE department of BIET is equipped with latest gadgets like Rhode and Schwarz Spectrum Analyzer, Rigol Digital Functional Generator , Digital Oscilloscope which are used by Students and faculty for practical and research.

Dr. Neeraj Mishra explaining VLSI circuit Design on Metor Graphics software. The VLSI Lab of ECE department has 50 licenses of Mentor Graphics software needed for VLSI design.



Dr. Anil Sahu demonstrating VLSI circuit layout design in Cadence Software. The VLSI Lab is having 60 Cadence Software licences.

Institution's Innovation Council (IIC) ECE Department

Ministry of Human Resource Development (MHRD), Govt. of India has inaugurated "MHRD's Innovation Cell (MIC)" on 30th Aug 2018. To systematically foster the culture of innovation amongst all Higher Educational Institutions (HEIs), MIC asked to establish "Institutions Innovation Council" at HEIs to encourage, inspire and nurture young students to work for new ideas.

At Bharat Institute of Engineering and Technology (BIET) ECE Deptt promotes and supports technology based entrepreneurship spirit among the graduated and graduating students of BIET.

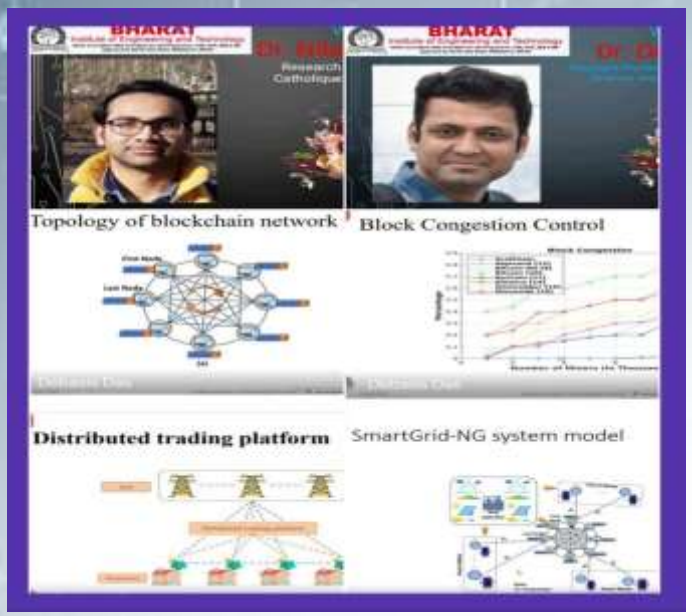
IIC ECE BIET wishes to facilitate the creation of ideas and inventions that benefit society. It has adopted this Incubation Policy to provide guidance and management structure to facilitate the development of entrepreneurship.

Incubation Center is present under IIC, BIET and is supported by BIET that funds, mentors and nurtures ideas, startups and entrepreneurs. Virtual incubates can operate from anywhere in India.

Major Focus of IIC:

- **To create a vibrant local Innovation ecosystem.**
- **Start-up/entrepreneurship supporting Mechanism in HEIs**
- **Prepare institute for Atal Ranking of Institutions on Innovation Achievements Framework (ARIIA).**
- **Establish Function Ecosystem for Scouting Ideas and Pre-incubation of Ideas.**

A pictorial glimpse of IIC ECE Activity


BHARAT
Topology of blockchain network
Block Congestion Control
Distributed trading platform
SmartGrid-NG system model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CERTIFICATE OF APPRECIATION
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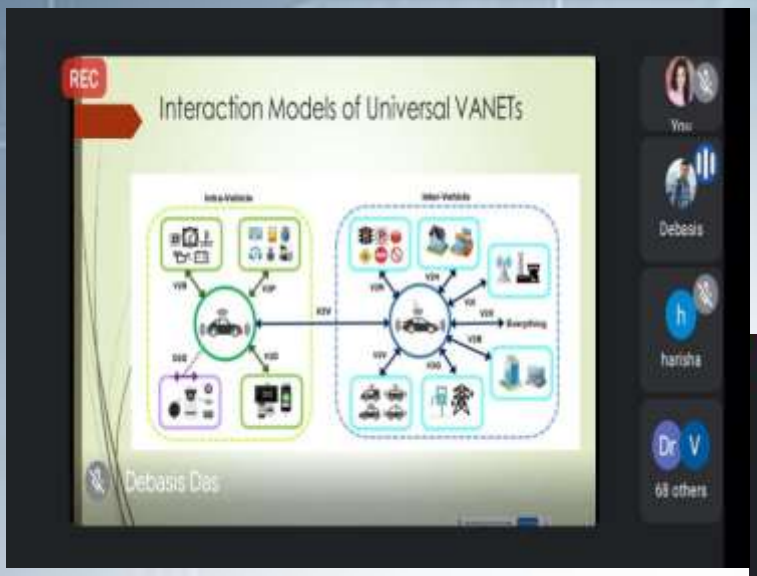
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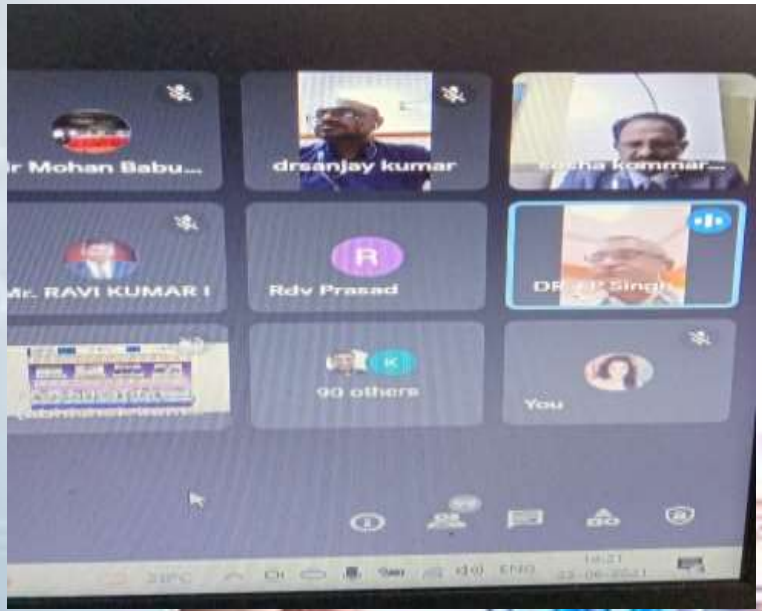
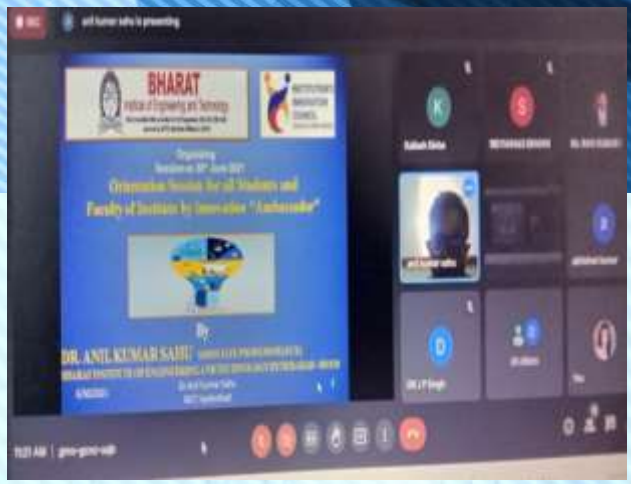

drsanjay kumar
Rdv Prasad
90 others
You


Global
Artificial Intelligence
Market
OPPORTUNITIES AND FORECASTS, 2016-2025

A Glimpse of Technical Event in ECE Department (2020-2021)

- **An Interactive Session with Successful Start-up Founder Ms.Rachana Tripathi ,CEO of HUWEL Life Sciences Pvt.Ltd on 3rd July 2021**

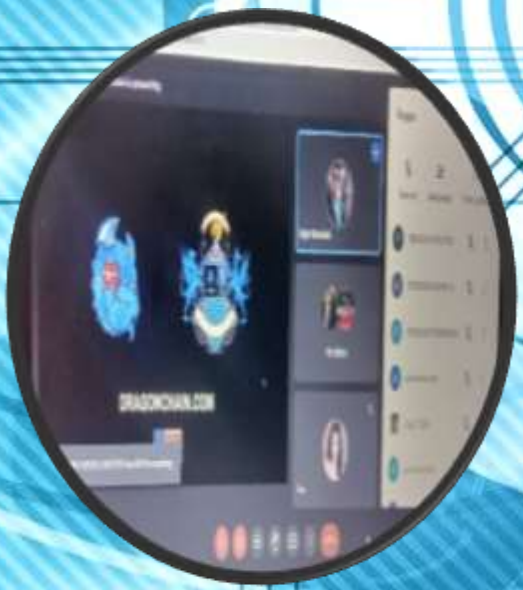
- **National Workshop on Prototype/Process Design and Development on June 30 2021** **Resource Person-Dr. Gaurav Verma (Founder and Director) Marvino Tech, New Delhi**



❖ National Seminar on Incubation and Start Ups on 19th June 2021

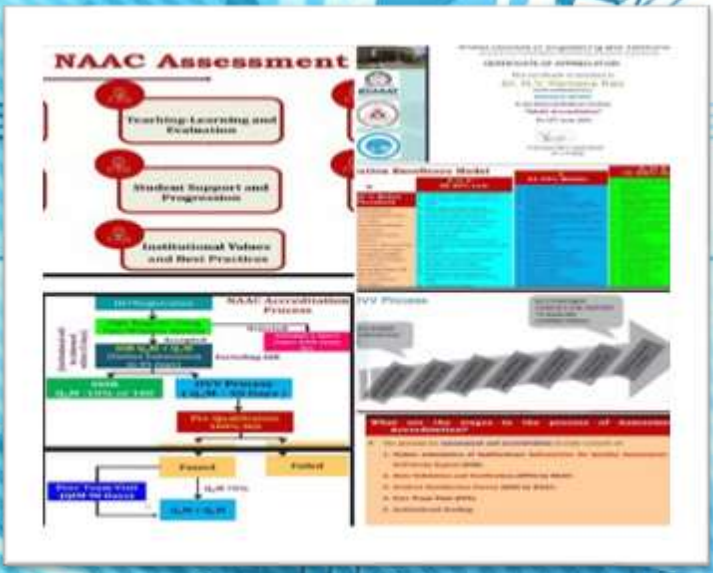
❖ **National Workshop on Virtual visit to innovation & Incubation centre on 15th June 2021**

MOU with SK DEEPTECH in Association with SK Computers Singapore on 23rd June 2021 at 2PM



❖ **MOU with TPCRA/IBA powered by Dragon Chain USA on 21st June 2021 at 2PM**

❖ **National Webinar on NAAC Accreditation on 12th June 2021**



❖ **One day online National Level Webinar on New Education Policy 2020: Way Ahead and Research Funding on 10th June 2021**

❖ **Workshop on MINDFULLNESS on 05-06-2021 from 11:30 AM to 1PM in association with ISTE and IIC**

❖ **Two Day National Workshop on 'Emerging Trends in Technology with Focus on Artificial Intelligence and Machine Learning and Nano-Electronics' during 28th –29th May, 2021**

❖ **One day online workshop On Blockchain Technology on 27th May in collaboration with TPCRA, IBA and Dragon chain(USA)**

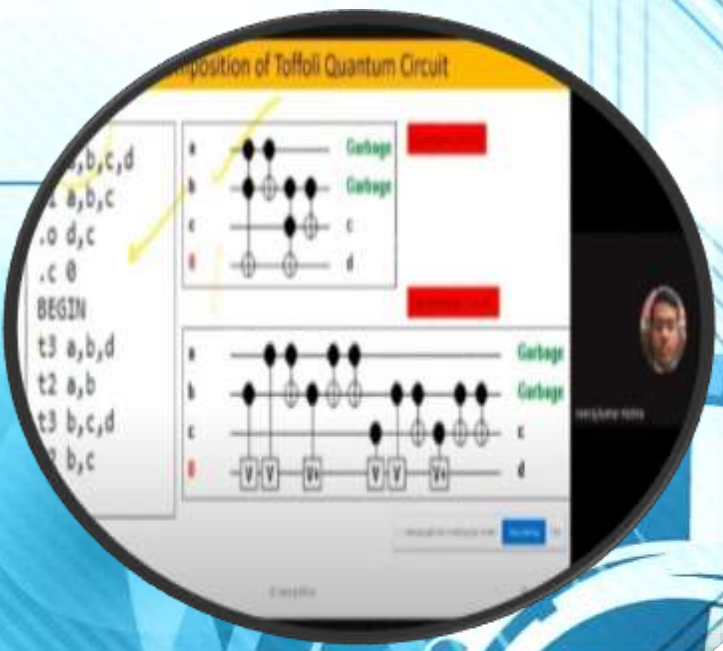
❖ **One Day National Workshop on 'VLSI Design using Mentor Graphics' on 26th May, 2021**

❖ **One day online workshop on Understanding Digital Transformation on 22nd May 2021 in collaboration with SK Computers, Singapore and SK Deeptech India**

- **One day online Workshop on "AI Application Development using IBM Cloud" on 20th May 2021 in association with IBM India Private Limited**

- **National FDP on Research Project Grant and Patent Filing organised by Electronic and Communication Department on 19th and 20th October 2020.**

❖ **Three Day National Webinar on 'New Paradigm of Industry Research Trends in VLSI and Data Science' from 31st July-2nd August 2020**



❖ **Three Day International Webinar on 'Research Applications in Artificial Intelligence, Data Science and Emerging Technologies' From 17-07-2020 to 19-07-2020.**

❖ **Webinar Week on New Role of Microwaves in Defence From 20-07-2020 to 25-07-2020.**

- **Webinar on Artificial intelligence with collaboration of PANTECH on 27.6.2020.**
- **National Level E-Quiz on Microprocessor and Microcontroller on 20/06/2020**
- **National Level E-Quiz on POST COVID:"IOT tech is not a Luxury but Necessity" on 13/06/2020**
- **Webinar Series on Technological Solution of Covid and Post Covid Challenges in Society From 08-06-2020 to 12-06-2020.**

- **Online National Level Quiz on NBA & NAAC on 7th June 2020**

❖ Department of ECE Completed Social Activity. Sanitization Kits Distribution to migrant workers on 05/06/2020

Department of ECE Completed Social Activity. Sanitization Kits Distribution to migrant workers in shramik trains Under the guidance our senior director Prof. G Kumarswamy Rao Sir on 5th June 2020 at Secunderabad Railway Station Hyderabad

❖ IBM hackathon team ranked in top 15

Out of 26000 teams registered and submitted the project for the Hackathon conducted by IBM in association with NAASCOM one of the team name: "COVID19 –Touct me not a Security device "of ECE department under the guidance of Dr.Anil Kumar Sahu qualified in top 15 teams for the final which was held in April-May 2020

- **National conference in "Recent Advances and Challenges in Electronics and Hardware Design" during 28-29 February 2020.**

ICICE-2020

ECE Department conducted 3 days International Conference on Information and Communication Engineering from 11th Feb- 13 th Feb 2021 Honorable Chief Guest Dr JR Joshi ,Director Kusha Project, DRDL, Hon. Guest of Honor Col. B.Venkat,Director AICTE , Special Guest Dr Sundarajan, Former Prof NTU , Mr Mrityunjay Vishwakarma , IBM India were the renowned guests of this Conference.


BHARAT
INFORMATION & COMMUNICATION ENGINEERING


PROCEEDINGS OF INTERNATIONAL CONFERENCE ON
INFORMATION & COMMUNICATION ENGINEERING
ICICE-2021
February 11-13, 2021
BHARAT
INSTITUTIONS
BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY
IBM
IFERP


BHARAT

Research & Development in ECE Department:

Details	Numbers
Publication	42
Patents	22
MoU	09
Conference	35
Book Chapter	09
Books	07
Funded Project Completed	Rs. 45,00000

Research Funded Projects (Sanctioned):

S.No.	Project Name	PI	Year	Amount
1	Grant for organising Conference	Dr. VikashMaheshwari	2018-2019	500000
2	Modrob(Mordernization and Removal of obsolescence Scheme)	Dr. Naveen Rathee	2018-2019	1202400
3	Research Project UBA	Dr. K.S. Balamurgan	2018-2019	150000
	UBA (Unnath Bharat Abhiyaan)	Dr. K.S. Balamurgan	2018-2019	50000
5	Faculty Development Program on RF and Microwave Antenna Design	Dr. E. Venkata Reddy	2017-2018	691000
6	Pradhan MantriYuva Scheme (National Scheme on Enterpreneuship Development)	Dr. E. Venkata Reddy	2016-2017	920000
7	Passive Surveillance System	Prof.G. Kumarasamy	2014-2015	984274

Funded Projects applied (2020-2021):

Topic	Agency	Status
Acoustic sensor array based Drone detection	AICTE	Applied
Design of Two way communication link for missile communication	DRDO	Applied
Center for Incubation and Entrepreneurship	DST	Applied
Novel Design Approach to synthesis and Physical Implementation of Reversible Median Filter with Improved Quantum Cost For Biomedical Image processing Applications	SERB	Applied
Smart Waste Management System using IOTand Cloud Interface Mobile Application	DST	Applied
Modernization and Establishment of Nanotechnology Lab	AICTE	Applied
ISTE Refresh Course on Padegogical Techniques	AICTE	Applied
SPICE	AICTE	Applied

Research Publications:

Patent Publication: 10

S.No.	Name of Faculty	Patent Number	Publication Date	Title	
1	Chandika Mohan Babu	US17195992	Patent Filled on 11/02/2021	Car Driver Alcohol Level And Sleeping Status Detection And Notification System. (Using Machine Learning Programming and IoT- Based Technology).	
2	Chandika Mohan Babu, Prashant Bachanna	AUS 2020101940	Granted on 16/09/2020	IoT Based Micropayment Protocol for Wearable Devices with Biometric Verification	
3	Chandika Mohan Babu	IND 202041030751	21/8/2020	IAI- Recognition Human Activity Intelligent Recognition of Human Activity AI-Based Programming	
4	Chandika Mohan Babu	IND 202041028903	31/7/2020	ICD -Devices: Intelligent Clustering Digital Devices Control, Monitor Using Internet Of Things	

5	Dr. Neeraj Misra	AUS 2020103849	Granted on 27/01/2021	QCIU- Education Environment System: Quantum Computing Integrated Development Education Environment Using IoT-Based System	
		AUS 2020102068	Granted on 30/09/2020	LSM- Quantum Computing: large databases store into a very small memory using quantum computing and ai-based programming	
6	Dr Amit Agrawal, Dr. Papiya Dutta	202041033789	Granted on 07/09/2020	Credit Card Fraud Prevention: Intelligent Process to Credit Card Fraud Prevention Using Machine Learning	
7	Dr Papiya Dutta	202011006914	18/2/2020	Fitness Prediction using Machine Learning	
8	Dr Papiya Dutta	202041028903	31/7/20	Intelligent Clustering Digital Devices Control Monitor using Internet of Things	
9	Dr Rajeev Shrivastava	202021051576	01/01/2021	Vehicle Bus Data Acquisition And Fault Analysis System Using Can And Monitoring Using Internet Of Things And Machine Learning Based Algorithm	
10	Dr Rajeev Shrivastava	202141008884	12/03/2021	Artificial Intelligence And Big Data Analytics Based Insurance Service Fraud Detection System	

Conference Publication: 55

S.No.	Name of the author/s	Title of paper
1	Dr. Anil Kumar Sahu	Power Computation and Performance Analysis of Viterbi-Decoder Using FPGA
		Design of Ultra-efficient Ripple Carry Adders in Quantum-dot Cellular Automata
		Study of Memory Cell Architectures in QCA Technology
		Review on Matching of Data Using Low-Complexity Low Latency Architecture With Improved Efficiency Allowed BWA And Error-Correcting Codes Technique.
		HAND GESTURE BASED HOME AUTOMATION FOR VISUALLY CHALLENGES
		Study of Quantum Technology in Low Energy Dissipation Circuits and Its Evaluation
		Exploring the designing of digital circuits using 3D nano-magnetic logic architectures
2	Dr. Abhishek Kumar	Outage Analysis of D2D-based Ultra-Reliable Low Latency Communication System under Nakagami-m Fading Channel
		Study on Machine Learning Based Spectrum Sensing Techniques for Cognitive Radio Networks
		A study report on IoT Technologies for Smart Home Solutions
3	Dr. Amit Agrawal	Text- Independent Speaker Identification Using Gaussian Super vector SVM-A Review
		Acoustic Echo Cancellation Algorithmfor Channel Estimation with Tolerable Doubletalk for MIMO OFDM System

		Arduino Based LED Chaser
		7th Sense Multipur[pose Robot for Military
4	Dr. Neeraj Mishra	Design of Ultra-efficient Ripple Carry Adders in Quantum-dot Cellular Automata
		Study of Memory Cell Architectures in QCA Technology
		Review on Matching of Data Using Low-Complexity Low Latency Architecture With Improved Efficiency Allowed BWA And Error-Correcting Codes Technique.
		HAND GESTURE BASED HOME AUTOMATION FOR VISUALLY CHALLENGES
		Study of Quantum Technology in Low Energy Dissipation Circuits and Its Evaluation
		Design and Implementation of Security Device for Patient Health Monitoring Systems
		Reversible Gate Mapping into QCA Explicit Cells Packed With Single Layer
		Design and Performance analysis of MIMO Patch Antenna Using CST Microwave Studio
		Quantum Computing Era during Pandemic Situation of COVID-19
		Application of Taguchi arrays using DOE for optimising processing and understanding Sputtered coated ZnO TFTs
		Modern Approach of Speech Processing Architecture Using Vedic Sutra for Portable Communication Relevance
5	Dr. Dinesh Kumar	New Application for Indium Gallium Zinc Oxide thin film transistors
		Study of Quantum Technology in Low Energy Dissipation Circuits and Its Evaluation
		Silent Sound Technology
		Application of Taguchi arrays using DOE for optimising processing and understanding Sputtered coated ZnO TFTs
		Design and Implementation of Security Device for Patient Health Monitoring Systems
		DEEP LEARNING APPROACH TO ANALYSE, DETECT AND CLASSIFY CORONAVIRUS (COVID-19) PATIENT
		AN OPTIMIZATION ALGORITHM FOR CONNECTIVITY AND COVERAGE IMPROVEMENT FOR MOBILE SENSOR NETWORK
6	Mr. Prashant Kulkarni	AN OPTIMIZATION ALGORITHM FOR CONNECTIVITY AND COVERAGE IMPROVEMENT FOR MOBILE SENSOR NETWORK
		New Application for Indium Gallium Zinc Oxide thin film transistors
		IMPROVED COVERAGE AND CONNECTIVITY CONTROL ALGORITHM FOR MOBILE SENSOR NETWORKS
7	M Khaleel Ullah Khan	Wireless charging of energy using magnetic coupling method to replisnish energy of wireless sensor nodes in wsn
8	Dr. Shahnaz K V	Comparison and Analysis of Sub-optimal performance of OFDM/SDMA uplink System that use Conventional Multiuser Detection Techniques
		Hidden Cell phone Detector
9	Mr. Chandika Mohan Babu	Cars Talk to Phone: A DSRC based Vehicle-Pedestrain Safety System
10	Prashant Bachanna	Smart Memory Management (SaMM) For Embedded Systems without MMU
11	Dr, Anirban Kanungoe	The architecture of a ring based TDM PON using blockchain based bandwidth resource allocation

		Arduino based smart traffic control system
		Study on one way successful data communication probability of Energy Harvesting Cognitive Radio Network with Spatially Random Primary Users along with Spectrum Sensing
		Throughput Enhancement in Cognitive Radio implementing Novel Collission Avoidance Algorithm
12	Dr Papiya Dutta	Throughput Enhancement in Cognitive Radio implementing Novel Collission Avoidance Algorithm
		Design of Ultra-efficient Ripple Carry Adders in Quantum-dot Cellular Automata
		Efficient Fault Detection of Power Transformer deploying Machine Learning Algorithm using DGA Techniques
		Comparison and Analysis of Sub-optimal performance of OFDM/SDMA uplink System that use Conventional Multiuser Detection Techniques
		Selection of Cable System for underwater Application
		IoT enabled smart hospital Management for Covid Patients
13	Dr Rajeev Shrivastava	Design and Implementation of Women Security System using Internet of Things and Advanced RISC machine
		Utility-Oriented Federation of Cloud Computing Environments Through Different Application Services
		Real-time Implementation for the Speech Steganography using Short-Time Fourier Transform for Secured Mobile Communication
		various OLAP Technologies and their impact on Dicision Making
		Design of Monitoring Smart Roads with Warning Messages to Diversions according to climate conditions as well as unexpected events like Accidents or Traffic Jams

Publication Journals: 30

S.No.	Name of the author/s	Title of paper	Name of journal
1	Mahendra Kumar B, Rambabu Arjunarao Vatti, Dr.K.A.Ansal, Akula Chandra Sekhar	PERFORMANCE OF THREE DIMENSIONAL IMAGE PROCESSING METHOD BASED ON DATA LAYERING NORMALIZATION USING TENSORFLOW	JOURNAL OF CRITICAL REVIEWS
2	Rambabu Arjunarao Vatti, K.Vinoth, Yerram Sneha	EDGE INTELLIGENCE FOR PREDICTING AND DETECTING CARDIAC PATHOLOGIES BY ANALYZING STRESS AND ANXIETY	JOURNAL OF CRITICAL REVIEWS
3	Dr. Anil Kumar Sahu	Clustering Based Customer Segmentation Using Automatic Billing System for Smart Shopping.	Solid State Technology
4	Dr. Anil Kumar Sahu	IOT Enabled Entry in COVID Situation for Corporate Environments	Lecture Notes on Data Engineering and

			Communications Technologies
5	Dr. Anil Kumar Sahu	Comparative Analysis of Conventional PID Tuning Techniques for Single Link Robotic Arm	Solid State Technology
6	L. Bhagyalakshmi, S. Kumar Suman, S. Mohanalakshmi and S. Singh	IMPROVING SPECTRAL EFFICIENCY AND COVERAGE CAPACITY OF 5G NETWORKS: A REVIEW	Adv. Math. Sci. J.
7	TV Suresh	A Secure Routing Protocol for MANET using Neighbor Node Discovery and Multi Detection Routing Protocol	SSRG International Journal of Engineering Trends and Technology
8	Prashant Kulkarni	A REVIEVE ON COVERAGE AND CONNECTIVITY APPROACHES IN MOBILE SENSOR NETWORKS.	Solid State Technology
9	TV Suresh	A Cluster based Routing Protocol for MANET using Mahalanobis Distance based Clustering and Gravitational Search Algorithm	International Journal of Advanced Trends in Computer Science and Engineering
10	K.S. Balamurugan	Agriculture Resources for Plant-Leaf Disease Using Deep Learning Techniques	International Journal of Advanced Science and Technology
11	K.S. Balamurugan	Performance and Estimation Error Analysis for L-TAS/SC Receiver over KG Fading Channels.	International Journal of Advanced Science and Technology
12	TV Suresh	A Novel Proficient Secure Routing Strategy In Mobile Ad Hoc Frame Using Heuristic-Based Load Balancing Protocol	Solid State Technology
13	Nirupma Pathak, Santosh Kumar, Neeraj Kumar Misra & Bandan Kumar Bhoi	A Modular Approach for Testable Conservative Reversible Multiplexer Circuit for Nano-Electronic Confine Application	International Nanoletter Springer
14	Bandan Kumar Bhoi, Neeraj Kumar Misra & Manoranjan Pradhan	Synthesis and simulation study of non-restoring cell architecture layout in perpendicular nano-magnetic logic	Journal of Computational Electronics, Springer
15	Anil Kumar Sahu, Vivek Kumar Chandra, G R Sinha, Neeraj Kumar Misra	An Efficient CTDSM Based On GM-C Quantizer and Improved Dynamic Element Matching	IET Circuits Devices & Systems
16	S. Bagyalakshmia, A. Sivakamib, K.S. Balamurugan	A Zno nanorods based enzymatic glucose biosensor by immobilization of glucose oxidase on a chitosan film	Obesity Medicine, Elsevier
17	L Bhagyalakshmi, SK Suman, T Sujeethadevi	Joint Routing and Resource Allocation for Cluster Based Isolated Nodes in Cognitive Radio Wireless Sensor Networks	Wireless Personal Communications, Springer
18	Mahendra Kumar B, Rambabu Arjunarao Vatti, Dr.K.A.Ansal, Akula Chandra Sekhar	PERFORMANCE OF THREE DIMENSIONAL IMAGE PROCESSING METHOD BASED ON DATA LAYERING NORMALIZATION USING TENSORFLOW	JOURNAL OF CRITICAL REVIEWS

19	Rambabu Arjunarao Vatti, K.Vinoth, Yerram Sneha	EDGE INTELLIGENCE FOR PREDICTING AND DETECTING CARDIAC PATHOLOGIES BY ANALYZING STRESS AND ANXIETY	JOURNAL OF CRITICAL REVIEWS
20	Rambabu Vatti; Nagarjuna Vatti ; Prasanna Lakshmi Vatti	Throughput Improvement of Wireless Personal Area Networks using Route Optimized Multi hop Algorithm	2019 International Conference on Smart Systems and Inventive Technology (ICSSIT)
21	L. Bhagyalakshmi, S. Kumar Suman, S. Mohanalakshmi and S. Singh	IMPROVING SPECTRAL EFFICIENCY AND COVERAGE CAPACITY OF 5G NETWORKS: A REVIEW	Adv. Math. Sci. J.
22	K.S. Balamurugan	Agriculture Resources for Plant-Leaf Disease Using Deep Learning Techniques	International Journal of Advanced Science and Technology
23	K.S. Balamurugan	Performance and Estimation Error Analysis for L-TAS/SC Receiver over KG Fading Channels.	International Journal of Advanced Science and Technology
24	Anil Kumar Sahu, Vivek Kumar Chandra, G R Sinha, Neeraj Kumar Misra	An Efficient CTDSM Based On GM-C Quantizer and Improved Dynamic Element Matching	IET Circuits Devices & Systems
25	Dr. Anil Kumar Sahu	Electrocardiogram estimation using Lagrange interpolation	Electronics Letters.
26	Dr. Neeraj Mishra	Designing digital circuits using 3D nanomagnetic logic architectures	Journal of computational electronics, springer
27	Mr. T.V.Suresh kumar	Designing an Efficient Forecasting Routing Protocol to Secure the Mobile Ad Hoc Network Communication	Bulletin Monumental
28	Dr. Amit Agrawal	Convolution Neural Network Method For FECG Extraction Using 1-D	Solid State Technology
		Adaptive Hybrid Approach for Energy Harvesting in Radio Frequency on Target Coverage in IOT	The International journal of analytical and experimental modal analysis
29	Dr. Neeraj Mishra	FORCED STACK SLEEP TRANSISTOR (FORTRAN): A NEW LEAKAGE CURRENT REDUCTION APPROACH IN CMOS BASED CIRCUIT DESIGNING	Facta Universitatis, Series: Electronics and Energetics
30	Dr Papiya Dutta	Blind Model Based Fusion Of Multiband Images Using Image Enhancment and a Novel Fusion Alorithm	Journal of Xi'an University of Architecture & Technology

Book Chapters : 5

SL No	Author	Chapter Name	Name of book	Publishers
1	Dr Rajeev Shrivastava	Architecture for Healthcare Process improvement Using IoE	Internet of Everything Biomedical Applications	Apple Academic Publisher and Taylor & Francis (2021)
2	Dr Rajeev Shrivastava	Data Acquisition, Monitoring And Controlling In Patients Health Care System Using Internet Of Everything	Internet of Everything Biomedical Applications	Apple Academic Publisher and Taylor & Francis(2021)
3	Dr. Anil Kumar Sahu	IoT Enabled Entry in COVID Situation for Corporate Environments	Lecture Notes on Data Engineering and Communication Technologies	Springer (2021)
4	Dr. Anil Kumar Sahu	Design and Performance analysis of MIMO Patch Antenna Using CST Microwave Studio	Smart Systems: Innovations in Computing - Proceedings of SSIC 2021	Springer (2021)
5	Dr Prateek Asthana	Variation of Sensitivity of a MEMS Capacitive Accelerometer Based Microphone with suspension system topology	Hearing Loss- From Multidisciplinary Teamwork to Public Health	IntechOpen (2021

Books Published : 5

SL No	Author	Title of the Book	Publisher	Year of publishing
1	Dr. Ritesh Kumar Kushwaha	Analysis of Circular Wave Guide and Cavity Resonator with MATLAB	LAMBERT Academic Publishing	2021
2	Dr. Anil Kumar Sahu	A Low Power Discrete Time Band-Pass Sigma Delta Modulation ADC	LAMBERT Academic Publishing	2021
3	Dr. Prateek Asthana	Performance Analysis of Different CMOS Based DRAM Cell Structures	LAMBERT Academic Publishing	2021
4	Dr. Anil Kumar Sahu, Dr. Prateek Asthana	VCO Enabled Quntizer in Continueous Time Sigma Delta ADC	LAMBERT Academic Publishing	2021
5	Dr. Abhishek Kumar	An Statistical Spectrum Sensing Technique for Coming Wireless Era	LAMBERT Academic Publishing	2021

Faculty Corner:

Faculty Achievements:

Dr. Rajeev Shrivastava			
Sr.	**Name ofAward**	**Awarding Agency**	**Year**
1	**Best Paper in the Conference Award** **Paper Title:** Eye Fundus Images Segmentation by using Edge Detection, Image Enhancement and Density Clustering in Diabetic Retinopathy **Conference Name:** 9TH WORLD CONFERENCE ON APPLIED SCIENCES, ENGINEERING AND MANAGEMENT WCSEM 2020 17-19 DEC 2020	The American Business School of Paris,12 Rue Alexander Parodi, 75010 Paris, France.	**Dec-2020**
Dr. Neeraj Kumar Misra			
Sr.	**Name ofAward/ Fellowship**	**Awarding Agency**	**Year**
3	Award International Scientist Awards on Engineering, Science	VDGOOD	**2021**
4	Fellowship Holders for attending, registration and presenting the international conference-VDAT2019 paper at Indian Institute of Technology Indore, India	IIT Indore	**2019**
Dr. Papiya Dutta			
Sr.	**Name ofAward/ Fellowship**	**Awarding Agency**	**Year**
1	Awarded for Exceptional Contribution as Jury Member in HYSEA "Designathon" Telangana State Level Hackathon in 2020.	JNTUH	**2020**
2	Awarded for Contribution to Student Development by International Education Awards 2020.	Kites Craft Foundation	**2020**
3	Appreciation Certificate for SPOC in IBM NASSCOM Hackathon	IBM NASSCOM	**2020**
Dr. Anil Kumar Sahu			
Sr.	**Name ofAward**	**Awarding Agency**	**Year**
1	IBM Hackathon Global challenge call for code	IBM	**2020**
Dr. Abhishek Kumar			
Sr.	**Name of Award**	**Awarding Agency**	**Year**
1	Young Scientist Award , 2020	IEEE URSI GASS, Rome Italy	**2020**
Dr. Anirban Kanungoe			
	Name of Award	**Awarding Agency**	**Year**
1	**Best Paper Award, 2014**	**IEEE ANTS, New Delhi, India**	**2014**

VDGOOD™
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International Scientist Awards
on
Engineering, Science and Medicine
07 & 08-Aug-2021 | Pondicherry, India

Outstanding Scientist Award
Presented to
Dr. Neeraj Kumar Misra
Associate Professor,
Department of Electronics and Communication Engineering,
Bharat Institute of Engineering and Technology (BIET),
Hyderabad, India.

Dinesh
...on Director
...ofessional Association, India

Reg. No. 2020E1CS080

Elite

CERTIFICATE OF COMPLETION

THIS CERTIFICATE IS AWARDED TO

CHANDIKA MOHAN BABU

TOPPER
1%

for successfully completing online non-credit course authorized and approved by Bharat Institute of Engineering and Technology (BIET).

INTRODUCTION TO R PROGRAMMING

with a consolidated score of 100%

Online Assignments: 25/25 & Final Online Exam: 75/75

Total number of candidates certified in this course: 108

Prof. R. Madana Mohana
Course Instructor

Jul-Sep 2020
(8 week course)

Prof. B. Prasada Rao
Director of Training & Industry Interface

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CERTIFICATE OF ACHIEVEMENT

This is to certify that

Dr NEERAJ KUMAR MISRA

ASSOCIATE PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING,
BHARAT INSTITUTE OF ENGINEERING AND TECHNOLOGY (BIET),
HYDERABAD, INDIA.

Has been Awarded

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Mr. M Dinesh
Associate Director

URSI

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The International Union of Radio Science
Union Radio-Scientifique Internationale

Certifies that, on the occasion of the
33rd General Assembly and Scientific Symposium,
organized as an online meeting, 29 August – 5 September 2020,
Abhishek Kumar
participated successfully in the
Young Scientist Award Programme

President
Makoto Aido
Prof. Makoto Aido

Secretary General
Prof. Peter Van Daele


Thank you
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IBM


Best Paper Award
(Long Paper)
Presented to
Anirban Kanungoe and Goutam Das (IIT Kharagpur, India)
for the paper titled
A novel OLT protection for hybrid WDM-TDM optical access networks
at the
IEEE Advanced Networks and Telecommunications Systems (ANTS) 2014
Centre for Development of Telematics (C-DOT)
New Delhi, India
December 14-17, 2014
IEEE
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CERTIFICATE OF ACCOMPLISHMENT
ANIL KUMAR SAHU
is the
Top 16 Selected Teams
of the Hackathon 'Crack the COVID-19 Crisis'
organized by NASSCOM in association with IBM.
Date of Issue
Amit Aggarwal


DESIGN-ATHON
HYSEA
CERTIFICATE
Dr Papiya Dutta


INTERNATIONAL EDUCATION
AWARDS
HONOURS
FOR
ORGANIZED BY
OUR PARTNERS
KITE
YUVA
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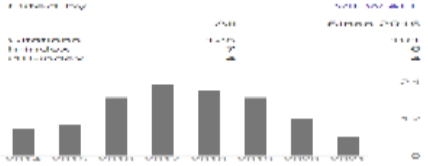
Articles

NANOSTRUCTURED MATERIALS, MICELLES, AND COLLOIDS FOR ULSI CIRCUITS

Dr. Anil Kumar Sahu

Associate professor,BIET Hyderabad
Verified email at biet.ac.in - Homepage
mixed signal design VISI Testing Low Power VLSI



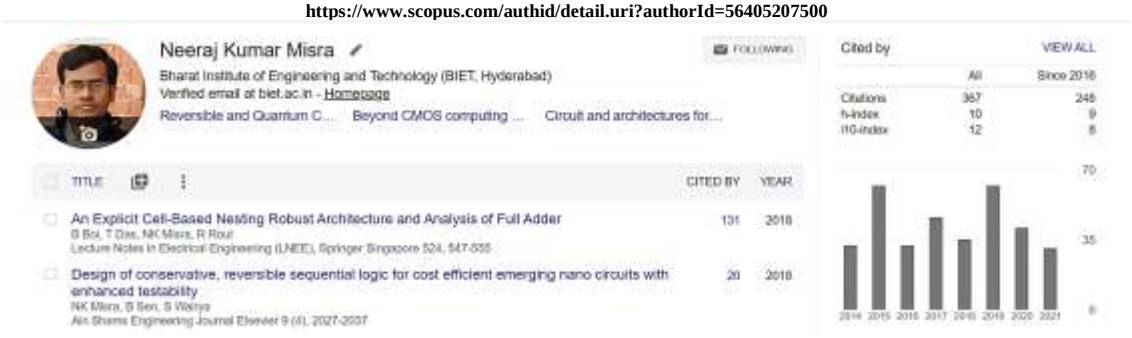
The next generation of ULSI devices will have higher aspect ratio features and thinner dielectric films and cleaning such structures will be a key issue in the future. In addition, new technologies must be environmentally friendly emphasizing reduced chemical use, recycling of water, and development of alternative replacement chemistries, e.g., increased use of dilute chemistries and more incorporation of ozone. Improved wafer drying techniques will emerge as the size of device features scale down. Gate oxide breakdown and different types of electrical damage caused by plasma processes have been important issues of ultra-large-scale integration (ULSI) technology. The degradation of oxide and interface parameters of Si-SiO_2 devices by plasma processing steps is one of the major yields and reliability concern facing the development of MOS technologies. During plasma processes two major effects play a key role in reliability degradation: charging due to plasma non-uniformity (i.e., variation of plasma potential and density along the wafer surface and plasma radiation damage. At present, two main types of plasma sources are used for advanced oxide etchers: high density plasmas and reactive ion etching (RIE). High density plasmas such as magnetron enhanced reactive ion etching (MERIE), electron cyclotron resonance plasma etching (ECR), inductively coupled plasma (ICP), have a number of advantages: higher density plasma can be generated at a lower pressure in comparison with capacitively coupled plasma; due to decreased sheath fields the mean ion and electron energies are lower, which should provide lower radiation damage; ionization ratios are higher, and ion energies are more controllable than they are when obtained by RIE. In MERIE reactor magnetic fields are added to capacitive discharge in order to reduce the sheath voltage and to increase plasma density. By using magnetic fields, the ion flux and ion bombardment energy at a certain power (dc bias) could be varied independently. The plasma generated in the presence of a magnetic field, however, is highly nonuniform. There is evidence that plasma nonuniformity across the wafer surface plays a major role in the damage created by *charging*. The associated high electric fields may easily induce an electrical stress in the gate oxide causing serious oxide degradation. The accumulation of charge on the gate electrode proceeds until the oxide tunneling current balances the difference in the mean local conduction currents from the plasma. As a result, the stored charges generate the dielectric breakdown of thin gate oxide. Electron injection induced hole trapping near the gate-oxide interface was suggested as a possible mechanism for oxide degradation. The relation between the nature of plasma-induced defects and the specific discharge parameters however is unclear. Although a considerable amount of work has already been done, it is far from enough due to the extreme complexity of the plasma processes. The increased use of plasma etching and deposition means that devices routinely are subjected to radiation intense environments during their fabrication, i.e., microstructures submitted to any of the plasma processes are more or less damaged according to the technology used. In a deep submicron domain, however, the requirements for a low level of damage is a key issue. Therefore, an understanding of plasma-induced defects and the suppression of the sources causing their creation is critical for the optimization of technologies for the production of advanced ULSI integrated circuits.

My Experience towards Emerging domain of Quantum Computing

Neeraj Kumar Misra

Department of Electronics and Communication Engineering
Bharat Institute of Engineering and Technology, Hyderabad, India

Mr Research URL: **https://vidwan.inflibnet.ac.in/profile/196862**
https://www.researchgate.net/profile/Neeraj_Kumar_Misra
https://www.scopus.com/authid/detail.uri?authorId=56405207500



Abstract: Quantum computing is the process of using quantum physics to conduct computations. Quantum computers may execute computations that are impossible in the classical world by using quantum physical phenomena such as entanglement and superposition. Quantum computers have a significant edge over conventional computers because of their characteristics. This work gives an overview of my experience towards emerging domain of Quantum Computing

1. Introduction

Large-scale computers will require a significant amount of effort in a variety of areas, including the development of more reliable quantum-devices, advance fault tolerance computer-architecture, and effective quantum-algorithms and error-correcting codes. Quantum computing, on the other hand, is already a reality in such companies like IBM, Google and Microsoft etc [1]. The advent of IBM's Q System One, the world's first commercial quantum computer, has shown that this field has matured to a level that was unimaginable only five years ago. Quantum circuits are constructed utilising reversible quantum gates that operate on "qubits" in quantum computing. Until entering a quantum gate for retracing information, entangled (sealed) qubits are used, and entangle is maintained when the qubits exit the quantum gate [2]. Quantum gates are reversible, allowing information to be retraced and restored.

2. Analysis

Pauli gates, Hadamard gates, Phase gate, Controlled NOT gate, Phase gate, Controlled Z gate, Deutsch gate, Swap gate, and other quantum gates are used in quantum logic circuit design that operate on one or more qubits.

3. Discussion

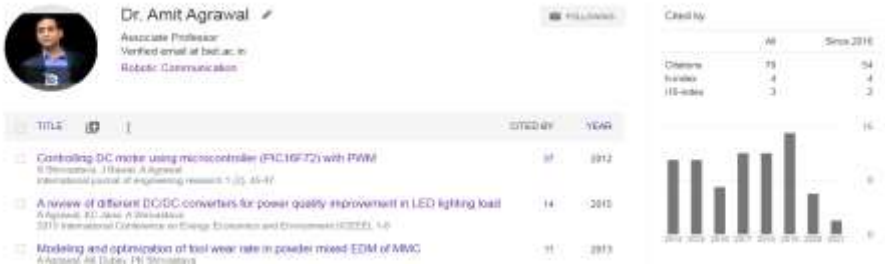
When compared to CMOS, quantum gates can perform complex information calculations safely without loss at high rates while using less power, but they have a greater margin for error, making quantum gate design more difficult. All the quantum logic circuit are reversible. In physical reversibility of a digital system may be described as follows: if computation can be performed in the backward direction without causing energy loss, the system design meets the physical reversibility requirements.

References

1 IBM Unveils World's First Integrated Quantum Computing System for Commercial Use - Jan 8, 2019." https://newsroom.ibm.com/2019-01-08-IBM-Unveils-Worlds- First-Integrated-Quantum-Computing-System-for-Commercial-Use.

2 IBM builds its most powerful universal quantum computing processors."https://phys.org/news/2017-05-ibm-powerful-universal-quantum-processors.html

Top Emerging IoT Trends to Watch Out for in 2021



Nowadays, the internet is making life extremely facile and brisk for everyone. It is not only making lives easier but also making the world a small place now. Thanks to the growing advancements, the internet is now deeply entrenched in our systems to enrich us. It is impossible for people to imagine their lives without the internet as each and every aspect of the world is now connected to make everything convenient, simple, and smart. Likewise, to keep the world even more connected, the advent of IoT (Internet of Things) has been a blessing.

As Edewede Oriwoh himself has rightly said, “The Internet of Things (IoT) is not a concept but a true technological network of all networks around the world.” IoT has the ability to connect with anything, be it smartphones, vehicles, people or even animals by providing them with unique identifiers (UIDs). The major part of this technology is its ability to transfer information over a network without any human or computer interaction.

IoT is increasing and evolving everyday with better ideas because of new advancements in technologies and concepts like smart homes, thermostats, sensors. Tracking and monitoring different objects is now required for security and comfort. Perhaps it is safe to say that hiring mobile app developers for custom tailoring of applications of such technologies will prove to be an extremely profitable deal for people in the near future. But let’s discuss the kind of trends taking a course in the world of the Internet of Things.

Top 7 IoT Trends To Watch In 2021

IoT is nothing less than a blessing for people and it’s not going to stop with its advancement anytime soon. So here’s our take on the top 7 emerging IoT trends that can shape the bright future.

1. Artificial Intelligence

Artificial Intelligence is the amalgamation of human intelligence and action in a machine that mimics and thinks exactly like humans. AI has the ability to think rationally and work in a manner that helps industries achieve a particular goal. Artificial Intelligence will dominate the future, and introducing this technology in business will clearly result in the enhancement of future prospects of a company and strategize a good plan of action when required.

According to Bill Gates himself, Artificial Intelligence is a technology that can work a treat when it comes to producing goods and services with less labor. Overwhelmingly, this is something that hasn’t troubled anyone in society over the last several hundred years. Combining Artificial Intelligence with IoT will make this smart feature even more interesting and enhance its abilities.

2. Blockchain

Blockchain is a boon for IoT and can prove to be extremely profitable for IoT industries as it is a magnificent option to track millions of connected devices and process coordination between devices. It is a technology that has proven its worth through cryptocurrencies, like Bitcoin, and can help IoT in tracking the history of devices. Hyundai Digital Asset Currency (HDAC) says that with a trustworthy blockchain system, hacking threats can be removed and protect users' privacy.

3. IoT In The Healthcare Industry

With the boom in IoT, healthcare industries can have major benefits. With wearable devices, consultants can very easily talk to patients and get doctors on your doorstep using some interactive mobile healthcare apps like HelpAround, Insight Optics and Medicine. Access to healthcare can be an easier and different process, even faster going forward. The field of healthcare that embraces IoT is highly encouraged.

4. Personalizing Retail

IoT is going to be present everywhere, so how can it leave behind the retail shops and enrich your shopping experience? The introduction of IoT in retail will make this chain even more efficient. For example, you are well aware of the route map from home to a supermarket but what if you have a route map of the store which helps you in getting your stuff smoothly and saves a lot of time? Advancement in retail with IoT will bring a new era of shopping which will make it a better experience for customers.

5. Predictive Maintenance To Be Boosted Up By IoT

IoT has not only made its benchmark in the technological world but also has entered our house to fix our personal problems with smart solutions. For example, the concept of smart homes (having sensors inside and outside of the house) is becoming prevalent. These sensors will warn house owners about system malfunctions, plumbing leaks, and electrical problems over their smartphones so owners can take quick actions to prevent any mishap.

With the support of IoT, the introduction of sensors in aircraft, warehouses, and cars will make everything functioning extremely smoothly and quickly.

6. Cloud Computing

Cloud computing delivers computer services like storage and intelligence to provide a smooth resource. It is cost-efficient and secure, providing several kinds of policies to protect your data from threats. Cloud computing provides scale elasticity which means it offers the right amount of IT services. Cloud computing is one of the most significant security developments which will be the future of IoT data protection.

Computers with internet connectivity can sometimes be dangerous and downloads of spyware can have your personal information at stake. With cloud computing, smartphones, vehicles and wearable devices can hold several malware records.

7. Staying Aware

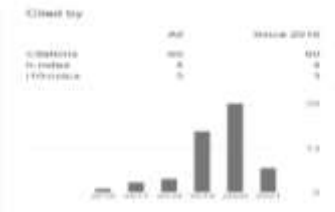
IoT tech leaders developed companies and enterprises are currently working to build out the true implementation of the IoT techniques. According to new IoT trends, more of today's industries and businesses will look at the IoT as a magic wand to attract consumers, grow brands, and improve User Experiences. Similarly, manufacturers will be asked to produce more IoT devices to make them more comprehensive. Take an account of Gartner, for instance. The tech giant thinks that in 2020, 95% of electronics will be powered by IoT.

Final Word

The Internet of Things is all set to amalgamate with other technologies to make lives easy and smart. Whether we talk about IoT’s role in the finance industry or its integration in healthcare services, advancements in this technology will further bring great achievements in the whole technological ecosystem around the world. As we saw in this article, the Internet of Things (IoT) will bring the world closer and make it prosperous in every sense.

Intelligent and 6G Wireless Networks

Abhishek Kumar
Assistant Professor, BIET, Hyderabad
Verified email at biet.ac.in
Analog signal processing Wireless communication sy



A cognitive radio (CR) is a radio that can be programmed and configured dynamically to use the best wireless channels in its vicinity to avoid user interference and congestion. Such a radio automatically detects available channels in wireless spectrum, then accordingly changes its transmission or reception parameters to allow more concurrent wireless communications in a given spectrum band at one location. This process is a form of dynamic spectrum management.

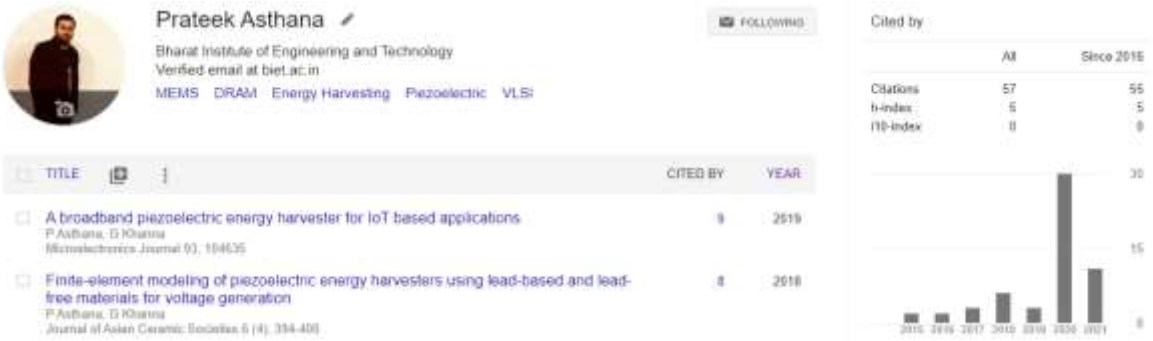
6G networks will be able to use higher frequencies than 5G networks and provide substantially higher capacity and much lower latency. One of the goals of the 6G Internet will be to support one micro-second latency communications, representing 1,000 times faster — or 1/1000th the latency — than one millisecond throughput. The 6G technology market is expected to facilitate large improvements in the areas of imaging, presence technology and location awareness. Working in conjunction with AI, the computational infrastructure of 6G will be able to autonomously determine the best location for computing to occur; this includes decisions about data storage, processing and sharing.

Advantages of 6G over 5G:

6G is expected to support 1 terabyte per second (Tbps) speeds. This level of capacity and latency will be unprecedented and will extend the performance of 5G applications along with expanding the scope of capabilities in support of increasingly new and innovative applications across the realms of wireless cognition, sensing and imaging. 6G's higher frequencies will enable much faster sampling rates in addition to providing significantly better throughput. The combination of sub-mmWave (e.g. wavelengths smaller than one millimeter) and the use of frequency selectivity to determine relative electromagnetic absorption rates is expected to lead to potentially significant advances in wireless sensing solutions.

Additionally, whereas the addition of mobile edge computing (MEC) is a point of consideration as an addition to 5G networks, MEC will be built into all 6G networks. Edge and core computing will become much more seamlessly integrated as part of a combined communications/computation infrastructure framework by the time 6G networks are deployed. This will provide many potential advantages as 6G technology becomes operational, including improved access to artificial intelligence (AI) capabilities.

Energy Harvesting: A Practical Reality for Wireless Sensing



There are some very exciting high growth projections for wireless sensing for the Automation industry. More sensors mean more process efficiency, lower operating costs, lower maintenance costs, higher reliability, and greater safety. Wireless sensing provides the opportunity to install masses of sensors with virtually no cost of installation by reducing the need for cables carrying the signals from the field to the control room. Wiring costs can easily be 80%, or more in a hazardous area, of the total cost of installing a new sensor. Who would not like to get the same job for one-fifth of the cost or five times as many sensors for the budget? And it is not just the cost of the installation; there are many cases where plant must be shutdown to facilitate installation adding another massive sum to the cost of new sensors. Most of us routinely use wireless (cell phones, Wi-Fi) for communication, and the potential for machine-to-machine wireless communication is even larger. Wireless transmission of sensor data is now well established as a reliable method of monitoring industrial plants. It is even being perceived by some users as more reliable and maintenance free than hard wiring. This whole new approach to Automation has been made possible by the convergence of new technologies:

- Low power electronics including microprocessors with sleep modes.
- RF transmission systems that use digitally encoded signals (e.g., digital television and Wi-Fi) with an order of magnitude less power required than older analogue systems.
- New energy harvesting techniques

So why is there so much interest in energy harvesting? Simply, you cannot get the full benefit of wireless unless the power source is also wireless. This means either a battery or some form of energy harvester. Until recently, the usual power source available to power a wireless sensor node or network (WSN) has been batteries. With their limited and non-deterministic life span, hazardous content, shipping and disposal requirements, batteries alone are not likely to provide a power source that will last the life cycle of the WSN application without maintenance intervention. The ideal solution is an energy harvester that is “fit and “forget” and will have a lifespan in excess of the WSN that it is powering.

Energy harvesting is the extraction of usable energy (usually converted into electrical energy) from otherwise wasted energy available in the environment. On the macro scale (Mega Watts - MW) this includes hydroelectricity, wave power, solar panels, and wind turbines. However, for wireless sensing, we are talking about harvesting immediately available energy such as vibration, heat, light, and RF energy to produce milliwatts - mW.

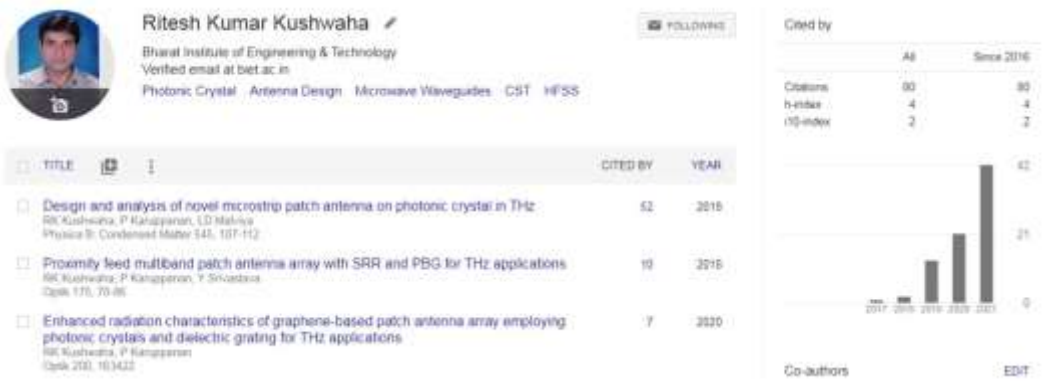
Temperature monitoring WSN powered by Micropelt's thermal harvester.

BE Bently Nevada vibration energy-harvester-powered wireless sensor node installed for machinery condition monitoring at Shell's Nyhamna Gas plant.

The future

The benefits of using wireless for automation monitoring and eventually control are so strong that practical solutions for suitable power sources will continue to develop. Energy harvesting has many different forms that have been fully demonstrated to be ideal solutions for indefinite long-term powering of WSNs without maintenance. Although the power requirements of some electronics will continue to fall, we are probably getting close to the limit of low power RF transmissions as well as the chemical energy density possible in primary battery cells. The energy available from various energy harvesting techniques in most applications already significantly exceeds the power requirements of existing WSNs. The recent rush to design in energy harvesting options for battery powered WSNs will not only lead to much wider use of energy harvesters but also ensure much wider use of low-cost wireless sensing with all the benefits of increased monitoring for plant safety and efficiency.

On-chip antenna: challenges and design considerations

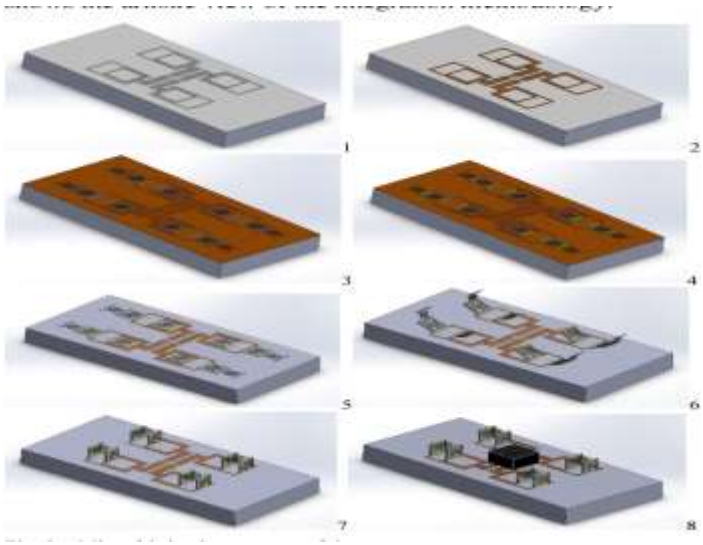


Antennas are essential part of every wireless communication system. The increasing trend of applications in the radio frequency (RF) and millimeter wave frequency spectrum has reduced the antenna sizes to only a few millimeters, which makes it practical for on-chip implementations. Integrated Circuit (IC) designers who have traditionally remained isolated from antenna design now need to understand its design process and trade-offs. This comprehensive resource addresses the challenges, benefits and trade-offs of on-chip antenna implementation.

It presents practical design and integration considerations of the IC and antenna combination and how both ends of the system can be utilized in a complimentary way. The book includes on-chip antenna layout considerations, layout for testability and various methods of their characterization. It also includes the state-of-the-art on-chip antennas in III-V and Silicon IC technologies and their usage in transmitter and receiver ICs. A look at the future trends and utilization of on-chip antennas for different applications concludes the book.

The ever-growing demand for low power, high performance, cost-effective, low-profile, and highly integrated wireless systems for emerging applications has triggered the need for the enormous innovations in wireless transceiver systems, components, architectures and technologies. This is especially valid for the antenna which is an integral component of the wireless transceiver systems and contributes significantly in determining their overall performance. Antenna-on-Chip (AoC) is an alternative antenna technology, which has drawn a substantial attention in recent days because of its various benefits over off-chip antenna technology. A few of these benefits include miniaturization, low power, low cost, and high integration of the wireless modules. Motivated by these valuable advantages and to unveil the true potential of the AoCs, this article presents, for the first time, a comprehensive survey of the suitability, advantages, and challenges of the AoCs for the emerging wireless applications such as 5th generation (5G) Wireless Systems, Internet-of-Things (IoT) Wireless Devices and Systems, Wireless Sensor Networks (WSNs), Wireless Interconnects, Wireless Energy Transfer, Radio Frequency (RF) Energy Harvesting, Biomedical Implants, Unmanned Aerial Vehicles (UAVs), Autonomous vehicles, Innovative characterization methods for Integrated Circuits (ICs) and Antennas, and Smart City. In addition, this article presents the current state-of-the-art of the AoC's applications by

classifying their applications in Millimeter-Wave (MM-Wave) band, Terahertz (THz) band, and low-frequency bands. The article also investigates and describes some useful methods for the mitigation of the challenges and issues posed by the emerging applications for the realization of the AoCs in a systematic manner. A concise description of the future directions of the AoCs with respect to each emerging application is also a part of this article. It is expected that this well-structured and organized survey will not only act as an excellent source of scholarship for the relevant research community, but also open up a world of novel research opportunities.



Microfabrication process of the antenna array.

Student Corner

Academic Topper:

Academic Year: 2019-2020					
S.No.	H.T.No.	Name	Gender	CGPA	Class
1	16E11A0458	Tekula Apoorva	F	8.19	First Class with Distinction
2	16E11A04A8	Erukude Sai Teja	M	8.19	First Class with Distinction
3	16E11A0497	Gurram Pavani	F	7.98	First Class with Distinction
4	16E11A0448	Chunduri Rama Devi	F	7.96	First Class with Distinction
5	16E11A0453	Venugu Amitha Reddy	F	7.95	First Class with Distinction
Present Year (2020-2021)					
III-I	Section-A				
	18E11A0404	B.Akshaya	7.86		
	18E11A0436	Thipparthi Varsha Reddy	7.86		
III-I	Section-C				
	18E11A0499	Kandlakunta Harshavardhan	8.05		
III-I	Section-D				
	18E11A04D9	ELESWARAPU TEJASWI	7.32		
II-I	Section-A				

	19E11A0435	J.LINGASWAMI	6.9		
II-I	Section-B				
	19E11A0463	M.Sravya Treasa	7.86		
II-I	Section-C				
	19E11A04A4	Padamatinti Bhavana	7.1		
II-I	Section-D				
	19E11A04F7	PATHIKONDA MANASA REDDY	6.76		

Student Acheivement


Today We historically shop
to remember Our National
Heroes & freedom fighters who suffers
to Give us a Republic Nation...
HAPPY
REPUBLIC
DAY
INDIA
Our flag does not fly because the wind moves it, it flies with the last breath of each soldier and police who died Protecting it....


AWARD CERTIFICATE
This certifies that
JABILI
has achieved FIRST position in mandala drawing
LA_ARTS.CONTEST
SHIN.ETRIM

Non-Technical Activities

Tech Fest 2021

Electronics and Communication Engineering department of BIET hosted the ELECOGNITA , on the 25th and 26th of June 2021. The ELECOGNITA 2021 received a myriad footfall of **500+** students from abroad and all over India including **14 different** states and **108** different colleges. In ELECOGNITA 2021 participants won **Rs 55,000/-** along with invigorating competitions including 11 technical and 12 non-technical events, to burgeon their technical and managerial skills. ELECOGNITA 2021 aims their endeavours on the path towards social welfare, not limit it to objective goals of academics and results, but also provide an extended platform to encourage the youth towards the betterment of society.

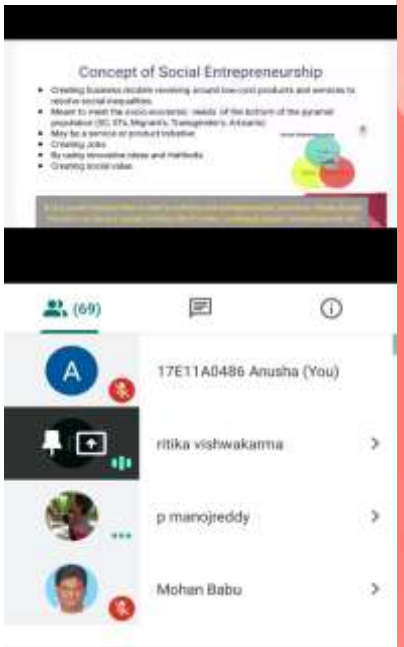
A pictorial glimpse of Tech fest Elecognita 2021

- **Electronics and Communication Engineering department of BIET also conducted the ELECOGNITA 2021 APPRECIATION EVENT on 30th June 2021 where Padma Shri Dr Tripuraneni Hanuman Chowdary addressed all the participants and appreciated the winners with certificates.**

National Service Scheme

The motto, i.e., the watchword of the NSS is "Not Me But You". This expresses the essence of democratic living and upholds the need for selfless service and appreciation of the other man's point of view and also to show consideration for fellow human beings. It underlines that the welfare of an individual is ultimately dependent on the welfare of the society as a whole. Electronics and Communication Engineering Department, BIET has been in the forefront of NSS activities and organized many of the events and as well attended online.

BIET NSS CELL Attended Online Events @ 2020-21



S. No.	Date	Event	Organized at
1	21/03/2021	Butter Milk and Fruits Distribution to Blind People and Road side People	at Uppal
2	20/03/2021	Food Service to formers at Rythu Swarajya Vedika	at Rythu Swarajya Vedika, Marri Krishna Hall, Tarna
3	03-12-2021	Walkathon on Completion of 75 Years Independence	at Golconda Fort
4	03-11-2021	Food Distribution at Temple service	At Hare Krishna Goledn Temple, Banjara Hills
5	03-08-2021	NSS Orientation and Women's Day Celebrations	at BIET Campus
6	18/02/2021	Programme of Rethinking Education-A Hourney through Inner Transformation.	Online Through JNTUH NSS CELL
7	11 & 12 Feb. 2021	Two days Programme on Plant Sapling, Ploughing of weeds around plants,	at BIET Campus
8	28/10/2020	Training of NSS Volunteers on JAN ANDOLAN FOR POSHAN ABHIYAN AT UNIVERSITY LEVEL	Online - through JNTUH NSS CELL
9	20/10/2020	Packing food and distribute the home needs in the flood affected areas of the jurisdiction of GHMC.	GHMC Areas
10	15/10/2020	Workshop on SESREC 2020	Online-Through MHRD
11	26/09/2020	Webinar on National Education Policy - 2020	Online- Through UBA, MGIT - Hyderabad
12	08-08-2020	Inauguration Program of Rashtriya Swachhta Kendra	Online through pm India webcast
13	15/07/2020	A Webinar on Impact of the Covid 19 on the Global Economy	Online (Through Lead India)
14	07-04-2020	Haritha Haram Programme	at Various District (Volunteers Districts)
15	23-06/2020	BIET NSS Cell - National Level Online Quiz On Covid 19	BIET NSS Cell Through Online
16	21/06/2020	International Yoga Day	Online (Through Heartfulness centre)

Photo Gallery of NSS Events 2020-2021

Unnat Bharat Abhiyan

The Electronics and Communication Engineering Department of BIET Empaneled in Unnat Bharat Abhiyan (UBA), Centre for Rural Development and Technology to build an understanding of the development agenda within institutes of Higher Education and an institutional capacity and training relevant to national needs, especially those of rural India. Under UBA Scheme we have adopted Ramdaspally, Chinthapallyguda, Yengalguda, Turkaguda and Errakunta Villages in Ranga Reddy District and organized many of the awareness programs.


UNNAT BHARATH ABHIYAN
భారతీయ గ్రామీణ అభివృద్ధి సేవ
Implemented by
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భారతీయ గ్రామీణ అభివృద్ధి సేవ
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BHARAT

During the session of 2020-21 Covid-19 bang the world with Pandemic which made the Electronics and Communication Engineering Department of BIET even more motivated for actively participating in various online UBA activities like:

1 **Online Workshop for Students on Social Entrepreneurship with Business plan in Action and Entrepreneurship with Business Plan in Action**

2. The Art of Living Session

SWACHHTA MISSION

Mahatma Gandhi dreamt of an India which was not only free but also clean and developed. Mahatma Gandhi secured freedom for Mother India. Now it is our duty to serve Mother India by keeping the country neat and clean. Here in Electronics and Communication Engineering Department of BIET Hyderabad we take this pledge that we will remain committed towards cleanliness and devote time for this. we will devote 100 hours per year that is two hours per week to voluntary work for cleanliness. We are confident that every step we take towards cleanliness in 2020-21 will help in making our country clean.


NATIONAL SERVICE SCHEME
FIT INDIA Plog Run
FIT INDIA
2nd oct, 2019
2019/10/2 08:39

Clubs

Clubs play a major role of college life! A club is a group of students organized with a similar interest for a social, literary, or other common purpose. Students have the opportunity and choose to join these groups for: pursuit of individual interests, career networking opportunities, leadership skills development and social networking. Electronics and Communication Engineering Department of BIET has very active student club wherein students are strongly encouraged to pursue club membership to help them enrich their college experience. The various student clubs at BIET that demonstrate the holistic development of the students and enhance the overall diversity.

Hackathon Club

The Hackathon Club is established in 2018 in BIET. The goal of a Hackathon club is to create functioning software or hardware by the end of the event. Hackathons tend to have a specific focus, which can include the programming language used, the operating system , an application, an API, or the subject and the demographic group of the programmers. There is no restriction on the type of software or hardware being created. The Club provides the students with a platform to solve some of the pressing problems we face in our daily lives, and thus inculcate a culture of product innovation and a mindset of problem-solving.

The Students from ECE II yr got selected in Finals of Hyderabad City Police Hackathon 2020.

Two Teams from CSE and ECE got selected in TOP 16 Finalist of IBM NAASCOM Hackathon in 2020

Dance Club

The club provides a platform to students to showcase their talent in dance and other fine arts. It encourages managerial capabilities through event management and stage organization.

Drama Club

Drama clubs by the students on inculcating the values of past & learning from the great old freedom fighters . The most effective moments in the drama are those that appeal to basic and commonplace emotions--love of woman, love of home, love of country, love of right, anger, jealousy, revenge, ambition, lust, and treachery. In BIET Drama club encourages the students to strive for a cleaner and healthier mind.

Mehendi Club

Mehendi reflects the rich Indian culture, bringing together the knowledge of medicinal herbs with many lovely sentiments and beliefs. The result is a ceremony filled with fun and joy. Vedic customs are centered on the idea of awakening the inner light Mehendi laden hands add a perfect dash of ethnicity to every Indian woman. This club focuses on the passion of every woman in BIET.

Photography Club

The Photography Club aims to promote the art of photography through photo competitions and exhibits. It aims to maximize the knowledge about photography to amateur photographers.

Poetry Club

BIET Poetry club has been formed with the agenda of promoting poetry among the students. Every week, students recited works of prominent poets and some even prepared their own poems.

Quiz Club

Quiz club has been formed with the objective to train the students to actively participate in various competitions. Quiz Club is to update the knowledge of the students in various fields like Academic, General Knowledge, Analytical abilities, Quantitative reasoning, etc., The Quiz Club aims at identifying students talented in quiz and creating opportunities for them to sharpen their quizzing skills. Quiz programs are conducted at regular intervals during club hours for the betterment of students.

Sports Club

Sports are a integral part of our college “Health is wealth.” Those who have understood its importance will try to keep them fit. At BIET we initiate sports activities for maintaining health and physical fitness. Students have the facilities of both indoor and outdoor sports.

OUT DOOR GAME: FOOT BALL, BASKET BALL, KABADDI, THROW BALL, VOLLEY BALL, CRICKET

INDOOR GAMES: CARROMS, CHESS, TABLE TENNIS.

Young Orators Club

This club focuses on all kinds of speaking events, debating, extempore speaking, elocution jamming.

Success Stories

Placement

The Training and Placement Cell plays a significant role in locating job opportunities for Under Graduates and Post Graduates passing out from the college. So, the training and placement cell is a necessary aspect for a student while getting enrolled in any college. For this, they remain in touch with reputed firms and industrial establishments. The Placement Cell operates all over the year to facilitate contacts between companies and graduates. The number of students placed from Electronics and Communication Engineering Department, BIET through the campus interviews is continuously increasing. Here is the statistics for the placements in various renowned companies during session 2020-21:

BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY			
Electronics and Communication Engineering Department			
PLACEMENTS DURING THE YEAR 2020-21			
INFOSYS			
1	A. Mahitha	17E11A0441	ECE
2	R. Praveen	17E11A0452	ECE
TCS			
3	Deekonda Sai Sudha	17E11A0442	ECE
4	T. Vijay Kumar	17E11A0465	ECE
TECH MAHINDRA			
5	15E11A04C4	D. Sai Adhithya	ECE
Multiplier IT Solutions			
6	Bojja Ajay Kumar	17E11A04F4	ECE
7	Revanth Chary	17E11A04A5	ECE
NNIIT			
8	C.Sangeetha	17E11A0405	ECE
9	Sai Chethan Reddy	17E11A0422	ECE
10	M. Deepika Reddy	17E11A0480	ECE
11	K. Sowmya	17E11A0490	ECE
12	kanrnewar Manikanta	16E11A0486	ECE
FACE INDIA PVT LTD			
13	Navya Reddy	17E11A0479	ECE
CSS CORP			
14	Navya Reddy	17E11A0479	ECE
ACCENTURE			
15	A. Mahitha	17E11A0441	ECE
16	S. Maneesha	17E11A0489	ECE

BYJUS			
17	**K.Samyuktha**	**17E11A0414**	**ECE**
MindTree			
PENTAGON SPACE PVT LTD			
18	**Shekar B.**	**17E11A0425**	**ECE**
19	**G Rukmini**	**17E11A04B6**	**ECE**
20	**Yadraj shinde**	**17E11A04D6**	**ECE**
GRIFEO			
21	**SURAPUREDY SANTHOSH REDDY**	**17E11A0427**	**ECE**
22	**A. Mahitha**	**17E11A0441**	**ECE**
23	**H. Vaishnavi**	**17E11A0445**	**ECE**
24	**Sai Kumar**	**17E11A0454**	**ECE**
25	**Kireeti**	**17E11A0459**	**ECE**
26	**Sulge Pruthvesh**	**17E11A0470**	**ECE**
27	**Vujjini Avinash**	**17E11A0475**	**ECE**
28	**A. Bhavya Sri**	**17E11A0477**	**ECE**
29	**M. Sreeja**	**17E11A0494**	**ECE**
30	**K. Sangeetha**	**17E11A04B7**	**ECE**

ECE Selected Students Details (2020-21 Batch)

Roll No	Name	Company	Photo
7E11A0441	A Mahita	Infosys Accenture GRIFEO	

17E11A0442	D. Sai Sudha	TCS	
17E11A0452	Praveen	Infosys	
17E11A0467	T.Vijay Kumar	TCS	
15E11A04C4	D. Sai Aditya	Tech Mahindra	
15E11A04C4	B. Ajay Kumar	Multiplier IT Solutions	
15E11A04A5	Revnath Chary	Multiplier IT Solutions	

17E11A0405	C. Sangeetha	NNIITT	
17E11A0422	Chetan Reddy	NNIITT	

17E11A0480	Deepika Reddy	NNIITT	
17E11A0490	K. Soumaya	NNIITT	
16E11A0486	K. Manikanta	NNIITT	
17E11A0479	NavyaSree	Face India Pvt Ltd CSS Corp	
15E11A0459	SV Kireeti	Accenture GRIFEC	
17E11A0489	Maneesha	Accenture	
17E11A0414	K. Samyukta	BYJUS	
17E11A0425	Shekhar B	Pentagon Space Pvt Ltd	
17E11A04B6	G. Rukmani	Pentagon Space Pvt Ltd	

17E11A04D6	Yadraj Sinde	Pentagon Space Pvt Ltd	
17E11A0427	Santosh Reddy	GRIFEC	
17E11A0445	H. Vaishavni	GRIFEC	
17E11A0454	Sai Kumar	GRIFEC	
17E11A0470	S. Purthvesh	GRIFEC	
17E11A0475	V. Avinash	GRIFEC	
17E11A0477	A.Bhavyasree	GRIFEC	
17E11A0494	M. Sreeja	GRIFEC	
17E11A04B7	K. Sangeetha	GRIFEC	
17E11A04A4	Surya Sai Kalyan	Accenture	

Distinguish Alumni

S. No.	Name	Year of Graduation	Phone Number	Email	Current Working Compnay	Location	Designation / Position
1	Surjit Roy	2010	9920800954	surjeetroy@outlook.com	TATA Motors Ltd	One india bulls center Lower parel mumbai	Manager-Customer Experience and Business Assurance
2	Rajdeep Karmakar	2010	7044081223	RajdeepKarmakar8@gmail.com	Cognizant Technology Solutions	Kolkata	Tech Lead Engineer
3	K Bhanukranth V Chary	2016	9160892104	bhanuvkc@gmail.com	Centre for Development of Advance Computing	Plot No. 6 & 7, Hardware Park, Sy No. 1/1, Srisailam Highway, Pahadi 22Shareef Via (Keshavagiri Post) Hyderabad - 500005	Project Associate (Electronic packaging)
4	RANJITH KUMAR JUTTU	2016	8520038464	ranjithkumarjuttu@gmail.com	TECH MAHINDRA	E CITY, BANGALORE	SOFTWARE ENGINEER
5	BHARADWAJ VELPULA	2015	8885347058	bharathwaj470@gmail.com	JSR & CO	kompally	
6	Phanindra Sagar noora	2015	9533222805	phani93919@gmail.com	TCS	Hyderabad	System Engineer

7	Sunil Raju Nekuri	2013	9030804057	sunilraju.nekuri@gmail.com	Deloitte Support Services India Pvt Ltd	Gachibowli	Analyst
8	MEGHANA	2017	9542054034	mandigirimeghana19@gmail.com	Endeavour Technologies	Madhapur	Project Coordinator
9	Sunil Reddy	2015	8790466606	sunilreddyking@gmail.com	Infosys	Hyderabad	Systems engineer
10	Amulya	2013	9494038369	amulya.reddy198@gmail.com	HCL technologies	Bangalore	Software engineer
11	Hemanth Badabagni	2013		hemanth.0719@gmail.com	Quicken Loans	Detroit, MI,USA	Business Intelligence Engineer
12	Tejas Mishra	2013	9966717810	tejasmishra92@gmail.com	Amazon	Divyasree Building, Lane beside Lemon Tree, Hitech City	Team Manager
13	KOGANTI DHEERAJ	2016	9000240932	Kogantidheeraj@gmail.com	MOBICLOUD INFOSYSTEMS PVT LTD	Kondapur	Software developer
14	Raghunath Pasumarthi	2013	9985321831	raghunat4u@gmail.com	Solix Technologies	Santa clara california	Software Engineer
15	Vaishali Pagidipally	2014	832-975-5249	vaishali0429@gmail.com	Wells Fargo Bank, N.A., Minneapolis, MN		Java Developer

16	Ashutosh Patil	2015	9177336278	p.ashutosh2099@gmail.com	Capgemini	Nanakramguda, Gachibowli, Financial District, Hyderabad	Senior Software Engineer
17	Abhishek Palavancha	2015		Abhi.vanch@gmail.com	Sfara inc.	33-41 Newark street NJ	Software engineer
18	D.BHARATH	2015	9494854208	daravathbharath369@gmail.com	STATE BANK OF INDIA	BANGALORE	PROBATIONARY OFFICER (scale-1)
19	K.S.PRAHALLAD KASHYAP	2017	9618151326	kashyap.kosgi@gmail.com	ROBOTICS ABHYAASA	Miyapur	ELECTRONIC ENGINEER
20	Vishneshwar Reddy Chinthapally	2017	9676845135	vishneshwar.232@gmail.com	Dynamics e-Shop	#306, Saptagiri Towers, Begumpet, Hyderabad, Telangana - 500016	Software Developer
21	M Surya Pruthvi	2012-2016	9177826549	pruthvisuryam@gmail.com	Capgemini		Software Developer
22	Harshavardhan	207	9494227228	jorala.harshavardhan@gmail.com	Cms	Panjagutta	Desktop support
23		2015	7416111610	Sonyash.ashwini@gmail.com	Infosys	Pocharam	System Engineer
24	Tanneeru Ramesh	2016	9618984868	thanneeruramesh95@gmail.com	CILLIUM TECHNOLOGIES PVT LTD	Banjara hills,hyderabad,TS.	trainee Software Engineer
25	k saikiran	2016	8008121598	kavalisaikiran@gmail.com	relgo networks	madhapur hyderabad	software developer
26	Akshay Modani	2015	8712845041	Akshay_modani10594@yahoo.com	Infosys	Pocharam	System engineer

27	Durga Prasad Neelagiri	2015	9160810545	durgaprasad296@gmail.com	Igniva InfoTech Pvt. Ltd	Phase 8-B, Airport Rd, Industrial Area Mohali, Sector 74, Sahibzada Ajit Singh Nagar, Punjab 160055	IOS Developer
28	Shanthi Swaroop	2016	8790462955	shanthiswaroop2041@gmail.com	**Infosys Pvt Ltd**	Gachibowli	Systems Engineer
29	Prashanth Chakkula	2015	8142933396	chakkulaprashanth@gmail.com	**TCS**	waverock Hyderabad	Systems engineer
30	Bindu Bhargavi Thandra	2014	(+1)510-320-9193	t.bindubhargavi@gmail.com	Preh Inc.	28850 Cabot Dr, Novi, Michigan, 48377, United States	Software Test Engineer
31	Manasa	2016	9177390880	veerojumanasa@gmail.com	**cognizant**	12 A block,Raheja mindspace	geometric analyst
32	Poojitha	2014	8886888153	Poojaprecious9@gmail.com	Makro technologies	Madhapur	Client manager
33	Manoja chitturi	2014	9848774001	Chitturimanoja@gmail.com	**Infosys ltd**	Gachibowli	Senior Systems engineer
34	V.Vimal Kumar	2016	7386666810	vvk2fast@gmail.com	ERP Veda Technologies	Hyderabad	Full Stack Developer
35	Jaisheel Reddy Todeti	2014	9948467403	jaisheel2012@gmail.com	Innovacx Tech Labs	Gachibowli	CX Specalist
36	Mounika	2014	8125664565	mounika.mona.779@gmail.com	**Infosys limited**	Pocharam	Test Engineer

37	Abhinav Chowdary	2014	9032547811	chowdary.abhinav16-17@nmims.edu.in	**IBM**	Bangalore	Asst. Manager, HR Strategy and Transformation
38	K.RAHUL SAGAR	2014	9059346908	rahul.rahulsagark2@gmail.com	Yash Technologies Pvt.Ltd	Hinjewadi phase-3,Pune	Associate consultant
39	G Purna Sai Kiran	2015	9912204849	gpurnasaikiran@gmail.com	Signode India Private Limited	Radraram, Hyderabad	Senior Executive, Standard Equipments
40	Harika Janamanchi	2012	9908933372	Harikaj91@gmail.com	**Capgemini**	Financial district Hyderabad	Associate consultant
41	Arigela Anurag	2016	9160239880	anuragxlr8@gmail.com	Amazon	Financial district Gachibowli	TRI
42	**Bharath Nalla**	**2013**	**15714426809**	**nbharathkrishnareddy@gmail.com**	**Vsion Technologies**	**507 Denali Pass , Suite 602, Cedar Park, TX 78613, USA**	**Programmer Analyst**
43	ELAVALA HARISH REDDY	2016	9705286621	Harishelavala4u@gmail.com	**Mindtree**	Mindtree,Divyasree Orion SEZ,12th Floor,Block 6 North Tower	Junior Engineer
44	Upendhar Vanaparthy	2015	9700052724	Upi0452@gmail.com	Incessant Technologies		Software Engineer
45	Sai Ram Mallik Cheripally	2015		mallikcheripally@gmail.com	Aviots	Hyderabad	Senior Developer

46	Ballari Poojarani	2016	8790688316	poojapinky91@gmail.com	Global logic Technologies	Road no-31, jubile hills	Associate Analyst
47	GANESH NENAVATH	2014	9000818911	nenavath.ganesh202@gmail.com	synchrony financial	knowledge city, H.Tech city	Seniore Rep.
48	**Prudvidhar Reddy Gongidi**	**2014**	**+1(510)556-6002**	**gongidiprudvidhar@gmail.com**	**Anthem INC**	**Atlanta, GA**	**production Associate**
49	ChinniKrishna Kothapalli	2011	5037408130	chinnikrishna.ece@gmail.com	**Intel Corporation**	Santa Clara	SoC Design Engineer
50	S CHANDRADEEP	2017	8686077703	chandradeepmeru@gmail.com	DigitalTrust Technologies Pvt Ltd	Madhapur, Hyderabad	Software Engineer

Alumni Messages

My time in Bharat College was marked by a whirlwind of activity on clarifying my doubts on core subjects of ECE from our esteemed faculty, designing and implementing innovative major and minor projects with my classmates, participating in numerous extra-curricular activities in Bharat.

P. Akshith Rao

Senior Engineer @ Samsung R&D Institute India – Bangalore ("SRIB")

"I remember my time in ECE department of Bharat is the most enriching part of my life. Here I learnt about success, failures and how to come back stronger for failures to achieve what I aimed for. The teaching of inspiring teachers will always remain close to my heart"

Manasa Yeluri

Project Engineer @ Wipro

"My biggest takeaway from ECE Department of Bharat College is the words of wisdom from our director Sir Prof. G. Kumaraswamy Rao who was also a tremendous teacher who guided us throughout our study in Bharat"

Kotha Naresh

Asst. GM @ Railtel Corporation of India Ltd.

"I would like to deeply express my gratitude to the Placement department of ECE of BIET for continuously guiding me during the campus interview process. Also during this time encouraging words from management kept me upbeat from all initial failures"

Velijerla Narender

Engineer @ Invecas Technologies private limited

"While studying at the ECE department of Bharat I discovered my love for designing software and interfacing it with hardware. This was helped by the learned faculties of our department who nurtured my skills and said the framework of my current success."

Raghavendra Vamshi Teja

Developer@ TCS

"Studying in Bharat college I learnt about the power of Digital technologies and online learning experience which inspired me to begin my career at BYJU's."

Chalika Sowmya

BDA@BYJUS

"The ECE department of Bharat Institute always had an international outlook. Professors always inspired me to achieve higher education from top universities in the USA, which I regard as the principal source of my current success in the States."

Varun Kumar Vandanapu

M.S student @ Western Illinois university

"The fondest memories of Bharath College is about our beautiful campus. It is also the place where I met my fiancée. My time at Bharat was filled with fun, love and of course studies.

Battula Sri Sai Manish Reddy

Analyst @ Microsoft

" The dedicated faculties of ECE Department prepared me for all types of future challenges. Viva La ECE@BIET"

Sai Anusha

Process associate @ Wipro

Photo Gallery

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INSTITUTE OF ENGINEERING & TECHNOLOGY

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