

Research Center

Department of Electronics and Communication Engineering has been recognized as Research center for the academic years 2014-15 and 2015-16, by JNTUK Kakinada. The main aim of the R&D cell is to Promote Research and Development activities with a vision and mission to pursue research in frontier Technologies.

In order to strengthen and expand the research activities, the department is centering the attention on the following major activities,

- **Research Publications in Peer Reviewed Journals**
- **Research Projects/ Grants**
- **Industrial Collaborations**
- **Guidance to Research Scholars**

Research Projects Executed by the Department funded by DST/AICTE/UGC etc.:

Scheme	Name of the Coordinator	Amt. sanctioned		Sanctioned letter details	Funds Utilization position as on today	Utilization Certificate details/ Reason for non-submission of Utilization Certificate
		NR (Rs.)	R (Rs.)			
MODROBS	Dr.M.Kamaraju	7,36,300	---	12/AICTE/RIFD/M OD (poly-3)pvt-46/2012-13	5,89,040 (Sanctioned Amount)	Utilization Certificate Submitted
MODROBS	Prof.M.Kamaraju	11,50,000	---	8024/RID/BOR/M OD-531./2009-10, Dt.21-12-2009	Project Completed 21-12-2011	Utilization Certificate Submitted

Details of Research Projects presently available with the Department Funded by DST/AICTE/UGC etc.:

Scheme	Name of the Coordinator	Amt. sanctioned		Sanctioned letter details	Funds Utilization position as on today	Utilization Certificate details/ Reason for non-submission of
		NR (Rs.)	R (Rs.)			
					(Rs.)	

						Utilization Certificate
IE R&D	Dr.M.Kamaraju D.Ramya Krishna	95,900	--	Project ID: PG2016010	70,999	On going
UGC	Smt. K. Sri Lakshmi	3,40,000	---	No. F: MRP- 6123/15 (SERO/UGC)	2,19,877	On going
UGC	Sri B. Vamsi Krishna	3,97,500	--	No. F: MRP- 6124/15 (SERO/UGC)	3,41,351	On going

Research students available with the faculty working in the Institute as co-supervisor and areas of work:

S. No.	Name & Designation of the faculty	Title of the Ph.D work	Name of the scholar with Organization	Registered with	Status
1	Dr. A. V. N. Tilak Professor & Dean(R&D), PG Studies	Power Optimized Programmable Embedded Controller	Mr. M. Kamaraju Gudlavalleru Engineering College	JNTUH, Hyderabad, 2012	Completed
		Low Power BIST for VLSI Digital Circuits	Mrs. Y. Syamala Gudlavalleru Engineering College	JNTUH, Hyderabad, 2014	Completed
		Efficient Implementation of Floating point Arithmetic Operations using Pipelinig Techniques	Mr. A. Purna Ramesh Sri Vasavi Engineering College, Tadepalli	JNTUK, Kakinada	Completed
		Studies on Adiabatic Logic Circuits	Mrs. K. Srilakshmi Gudlavalleru Engineering College	JNTUH, Hyderabad	Pursuing
		Power Optimized Electronics for Wireless Sensor Networks	Mr. Y. Ratna Babu Vignan's Lara Institute of Technology & Science, Guntur	JNTUK, Kakinada	Pursuing
		Fault Tolerant Digital Parallel Filters Based on Multibit Error Correction Codes	Mr. S. ChandraSekhar Dhanekula Institute of Engineering & Technology, Vijaywada	JNTUK, Kakinada 2015-2016	Pursuing
		VLSI Architecture of Differential Manchester Encoding Using SOLS Technique with multibit flipflop	Mrs. K. Radha Medha Institue of Science & Technology for Women, Khammam	JNTUK, Kakinada20 15-2016	Pursuing

		and signal feed through scheme			
2	Dr. M. Kamaraju, Professor & HoD	Dynamic Power Optimization and Modeling of Logic architecture for FPGA	Mr. V. Prasanth, Pragathi Engineering College, Surampalem	JNTUK, Kakinada, 2013-2014	Pursuing
		Memory design using FINFET technology	Mrs. T. Venkatalakshmi, Gudlavalleru Engineering College	JNTUK, Kakinada, 2014-2015	Pursuing
		Desing and Analysis of computational intelligence based architecture for real time environment	Mr. N. Sambamurthy, Gudlavalleru Engineering College	JNTUK, Kakinada, 2014-2015	Pursuing
		Low Power VLSI Design	Mr. P. Buchibabu, Aditya Engineering College, Kakinada	JNTUK, Kakinada, 2014-2015	Pursuing
		Design of Low Power SoC based portable device for vitrually impaired	Mr.Y. Sri Chakrapani, Gudlavalleru Engineering College	JNTUK, Kakinada, 2014-2015	Pursuing
		Desing and Performance issues of 0.18 μ m CMOS OTA in biomedical applications(ECG)	Mr. B. R. B. Jaswanth, Gudlavalleru Engineering College	JNTUK, Kakinada, 2014-2015	Pursuing
		Implementation and analysis of emotion recognition system for speech signals	Mr. B. Rajasekhar, Gudlavalleru Engineering College	JNTUA, Anapur 2014-2015	Pursuing
		Low Power VLSI Design	Mrs. T. Subhashini, Gudlavalleru Engineering College	JNTUK, Kakinada 2015-2016	Pursuing
3	Dr. V. V. K. D. V. Prasad, Professor	Wireless Communications	Mr. Ch. Rambabu, Gudlavalleru Engineering College	JNTUK, Kakinada 2013-2014	Pursuing
		Image Processing	Mr. M. V. Srikanth, Gudlavalleru Engineering College	JNTUK, Kakinada 2013-2014	Pursuing
		Design and Performance issues of 0.18 μ m CMOS OTA in biomedical applications(ECG)	Mr. B. R. B. Jaswanth, Gudlavalleru Engineering College	JNTUK, Kakinada, 2014-2015	Pursuing

		Speech Enhancement	Mr. K. Srinivasa Rao, Vignan University, Guntur	JNTUK, Kakinada, 2014-2015	Pursuing
		Speech Computations	Mr. Y. Satish, Vignan University, Guntur	JNTUK, Kakinada, 2014-2015	Pursuing
		Low Power VLSI	Mr. Nagaraju, JNTU Vizayanagaram	JNTUK, Kakinada, 2014-2015	Pursuing
		Signal Processing	Mrs. B. Naga Sirisha, Gudlavalleru Engineering College	JNTUK, Kakinada 2015-2016	Pursuing
		Satellite Image Segmentation	Mr. M. Nagu, VKR & VNB Engineering College, Gudivada	JNTUK, Kakinada 2015-2016	Pursuing
4	Dr. Y. Syamala, Associate Professor	Low Power VLSI Design	Mr. E. Vijaya Babu, Gudlavalleru Engineering College	JNTUK, Kakinada 2015-2016	Pursuing

List of the Research publications of the faculty from the department seeking Recognition as Research Centre (as per the IEEE/ASME / ASCE journal format):

i. National Journals	:	00
ii. International Journals	:	152
iii. National Conferences	:	05
iv. International Conferences	:	21

Industrial consultancy details during the last two years:

- i. Industries for which consultancy is provided: Nyletech Solutions Pvt. Ltd., Chennai
- ii. Major consultancy problems solved during the last two years: Development of a module to check the active or inactive status of GPS panic button

Details of Industry Research problems working out by the department presently:

In-house R&D Project - Titled "Wireless Attendance Monitoring System" Faculty involved Dr.M.Kamaraju, HoD, Dr.B.Ananda Krishna, Professor, Sri B.Raja Sekhar, Associate Professor.

MOUs:

- The MOU between Microlink Peripheral Controls Pvt. Ltd., Vijayawada and Gudlavalleru Engineering College, for the purpose of impart project training to the students of Electronics and Communication Engineering Discipline, w.e.f. August 2015.
- The collaboration between Andhra University, Department of System Design and Department of ECE, Gudlavalleru Engineering College. Under this collaboration Research work is proposed on “Development of Doppler Radar System for Wind Monitoring in the Atmospheric Boundary Layer”. w.e.f. October 2012.
- MOU between Unistring Tech Solutions Pvt. Ltd., Hyderabad and Gudlavalleru Engineering College, for the purpose of enriching the technical education process and to jointly work for enhancing the quality of education imparted to the students of Electronics and Communication Engineering Discipline and for continuous interaction between Industry and Institution, w.e.f. June 2012.
- Extended MOU between M/s.Efftronics Pvt. Ltd., Vijayawada and Gudlavalleru Engineering College, for the purpose of enriching the technical education process and to jointly work for enhancing the quality of education imparted to the students of Electronics and Communication Engineering Discipline and for continuous interaction between Industry and Institution, w.e.f. March 2010

Research Facilities

Research Laboratories

- ❖ **Center for Development of Smart Applications**
- ❖ **DECS R&D Laboratory**
- ❖ **Embedded systems R&D Laboratory**

CENTER FOR DEVELOPMENT OF SMART APPLICATIONS

Hardware Equipment

S.No.	Name of the Hardware/peripherals	Major specifications	Quantity	
1.	Computers	Intel Core i5 4460 4 th gen Processor Intel H81 Chipset Mother Board 8GB DDR3 RAM, 500GB HD	19	
2.	UPS	6KVA	02	
3.	Xilinx Zed Development Kit	Embedded Modules and Trainer Kits	02	
4.	Wireless Embedded Module		01	
5.	GSM/GPS Trainer Board		01	
6.	Mobile Network Equipment		01	
7.	PIC Development Board		02	
8.	ARM7 LPC 2148 Trainer Kit		02	
9.	AVR Development Board		01	
10.	MSP430 Development Board		01	
11.	ZIGBEE Board		02	
12.	PIR Sensor Interface		01	
13.	WSN Master		02	
14.	ZIGBEE Node		02	
15.	WIFI Node		02	
16.	SENSORS:			

i.	Fire Sensor	SENSORS	01
ii.	Rotation Sensor		01
iii.	3Axis Accelerometer		01
iv.	Ultrasonic Sensor		02

DECS R&D LABORATORY

Hardware Equipment

S No	Major Equipment	Specifications	Qty
1	XUP-V5 Board	Xilinx Virtex-5 XC5VLX110T FPGA	1
2	IBM X3400 Server	INTEL QUAD CORE XEON E5 507, 2.26GHz Processor, 4GB RAM, 2X146 SAS Hotplug HDD, SATA Raid Rps&20" LCD Monitor.	1
3	Dual Core Systems	Intel Pentium Dual core Processor, 2GB DDRII RAM, 320GB HDD & 18.5" LCD Monitor.	40

Software Available

S.No.	Name of the Software	No. of users
1	Xilinx ISE 14.7	19
2	Mat lab 8.5	10
3	Chip Scope Pro Analyzer 14.7	19
4	Vivado 2014.2	19
5	System Generator IDS 14.7	19
6	Kiel	Open Source
7	Assemblers	Open Source
8	NS-2	Open Source

EMBEDDED SYSTEMS R&D LABORATORY

Hardware Equipment

S No	Equipment Name	Major specifications	Qty
1	ARM 926 Kits	ATMEL AT91SAM9263 Processor	3
2	OMAP L 138	ARM 9 & C674X Floating Point DSP	4
3	JTAG Emulator-ARM	AT91SAM-ICE	1
4	JTAG Emulator	XDS 100 v2 Emulator	4
5	USB Analyzer	Beagle USB 480	1
6	I2C Analyzer	Beagle I2C/SPI, Aardvark I2C/SPI, Aardvark I2C/ SPI Activity Board	1
7	Single chip MCU Trainer based on 89C51ED2	AT 89C51ED2/RD2 Operating at 11.0592 MHz	10
8	Logic Controller Interface	8 TTL Inputs and 8 TTL outputs with Dip Switch for On/Off Positions	2
9	TXDR Interface	PT100 with ADC	2
10	Elevator Interface	Interface Consists four keys to indicate four floors	2
11	In-Circuit Emulator	IDE For 8051 Family	1
12	USB Finger print reader	SecuGen Make USB Finger Print Reader	1
13	Wireless adapter	D-Link Wireless N 150 Desktop PCI Adapter	1
14	Dual Core Systems (2nd Generation)	Intel Pentium Dual core 2nd Generation Processor, 4GB DDRIII RAM, 500GB HDD & 18.5"LCD Monitor.	18

Software Available

1	Xilinx 13.1i
2	Altera Quartus-II
3	Multisim V11.0.1
4	Ultiboard V11.0.2
5	Code Composer Studio (CCS)
6	Labview 2009
Mentor Graphics Higher Education Program 1	
7	IC Flow
8	Time -it
9	Calibre
10	Analog/Mixed Signal
Mentor Graphics Higher Education Program 2	
11	HDL Designer Series
12	Leonardo Spectrum

13	Precision Synthesis
14	Modelsim SE6.6
MATLAB 2012b	
15	Signal Processing Tool box
16	DSP System Tool box
17	Image Processing Tool box
18	Communications System Toolbox
19	Link for Modelsim Toolbox