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# NEXUS

VOLUME :2 ISSUE :2 FEBRUARY 2014

## THE ECE DEPARTMENTAL NEWS LETTER

Greetings to all. We are extremely happy to present you the department newsletter NEXUS, which has been giving us an insight into the happenings in the world of technology and being a mirror reflecting the activities of the department. This month has been an eventful one wherein the students have enjoyed the opportunity of having interacted with professionals from the corporate world. We are extremely proud to announce that we have signed MOU's with two prestigious companies, ABE Semi conductors, Chennai and Quest Innovative Solutions Cochin. To take things to the next level we have also established a CENTER OF EXCELLENCE, in



the department for the benefit of the students. The final years have shown a high level of competence in their respective projects, and I wish our students join various technical and non technical forums to explore their Engineering concepts and technology. I would like to congratulate the staff and the students for their tireless efforts in taking the department forward, and I also thank them for their contributions in making this newsletter a successful and an informative one.

Mrs . Jerrin Yomas , HOD

## PLACEMENT WINNER

**Laya Krishna** of S7 ECE got placed at UST Global.

## EDITORIAL

Dear Readers, The memories of the past keep up our confidence and the hope of the future is what we live for, but the present is the one that keeps our essence alive. This is what the VJECians believe in—living in the present with a penchant for excellence in every sphere of activity with confidence and vision of the future. We are extremely glad to bring forth to you the 6<sup>th</sup> volume of News-letter “NEXUS” of Department of Electronics & Communication. The 6<sup>th</sup> volume of NEXUS brings forth a spectrum of multifarious activities in the Electronics & Communication Engineering department.

Mr. Adarsh K. S (Staff Editor)

Student Editors: DILJO THOMAS

: KRISHNAGOPAL A

## VISION OF ECE DEPARTMENT

Lead the students in the Quest for attaining excellence in the ever evolving technical trends in the field of Electronics and Communication

## MISSION OF ECE DEPARTMENT

To empower emerging engineers with state of art technology along with high pattern of discipline nurture career improvement and develop human and social intellectual qualities necessary for the successful practice of the profession

## WORKSHOP ON ‘NETWORK SIMULATOR 2’

The Department of Electronics & Communication Engineering of Vimal Jyothi Engineering College organized a five-day workshop on “Network Simulator-2” in industrial collaboration with ABE Semiconductor Design, Chennai on 10th to 14th FEBRUARY 2014, where the participants (Faculty, Research Scholar, Technical Assistant and Student) learned different design aspects of digital signal processing.

The Workshop aims at deliberation, sharing knowledge to the target audience about the significance of NS-2 and present current research opportunities in it. The discussion shall foster inter-disciplinary collaborative research in networking using NS-2. The program was glorified by the kind presence of Rev Fr. Geo Pulikkal, Chairman of Vimal Jyothi Group of institution, Fr. Jinu Vadakkemulanjanal, Administrator of VJEC and VJIM, Dr. Benny Joseph, Principal, VJEC and Ms. Jerrin Yomas, HOD, ECE Department.

The programme was organized by MS. Jerrin Yomas, HOD of ECE Department and Co-ordinated by Mr. Jayesh George and Mr. Jubin Sebastian, Assistant Professors, VJEC.

## SCREENLESS DISPLAY

-Avinash P Paul

One of the more frustrating aspects of modern communications technology is that, as devices have miniaturized, they have become more difficult to interact with – no one would type out a novel on a smartphone, for example. The lack of space on screen-based displays provides a clear opportunity for screenless displays to fill the gap. Full-sized keyboards can already be projected onto a surface for users to interact with, without concern over whether it will fit into their pocket. Perhaps evoking memories of the early Star Wars films, holographic images can now be generated in three dimensions; in 2013, MIT’s Media Lab reported a prototype inexpensive holographic colour video display with the resolution of a standard TV.

Screenless display may also be achieved by projecting images directly onto a person’s retina, not only avoiding the need for weighty hardware, but also promising to safeguard privacy by allowing people to interact with computers without others sharing the same view. By January 2014, one start-up company had already raised a substantial sum via Kickstarter with the aim of commercializing a personal gaming and cinema device using retinal display. In the longer term, technology may allow synaptic interfaces that bypass the eye altogether, transmitting “visual” information directly to the brain.



## GATEWAY TO THE FUTURE

### SIGNING OF MEMORANDUM OF UNDERSTANDING WITH ABE SEMICONDUCTOR DESIGNS, CHENNAI & QUEST INNOVATIVE SOLUTIONS, COCHIN

On the 3<sup>rd</sup> of March, 2014 the Department of Electronics & Communication, VJEC as part of its CoECWN (Centre of Excellence in Communication and Wireless Networking) programme, successfully established ties with two giants in the field of telecommunication and wireless networking, ABE Semiconductor Designs and Quest Innovative Solutions.

The event was inaugurated by the Chairman of VJEC, Rev Fr. Geo Pulickal and was attended by the Managing Director of ABE Semiconductor Designs, Mr. Atif Shah and on behalf of Quest Innovative Solutions Mr. Aneesh Kumar, along with the Administrator of VJEC, Fr. Jinu, the Acting Principal Mr. Raju and the HOD of ECE Dept., Ms. Jerrin Yomas. The faculty members of the ECE Dept. and the class representatives of semesters 4, 6 and 8 also attended the event.

As part of the CoECWN programme, the ECE Department proposes a center of academic excellence in the field of Communication & Wireless Networking with an aim to enhance research activities among students and Faculties.

The objectives under the programme are:

- To maximize the Industrial Connectivity
- To Create Centers of Excellence in niche areas of research
- To create opportunities and exploit the available resources to benefit industry/society
- To organize workshops and training programme for students and faculties .
- To foster International collaborations for mutual benefits in areas of research.
- Technology transfer to industries and other academic institutions

The vision of the CoECWN programme is to provide the sharp solutions in the fields of Wireless Networking, Embedded systems, Digital signal processing, FPGA, RTOS, Embedded Linux etc.

As part of the Research and Development Division, a few of the boards provided are 8051 development Boards, PIC Boards, ARM Boards with RTOS Supported, Cortex Boards with Embedded Linux Development for the purpose of supporting academics and Industrial training.

Many training programs on Embedded Designs and Development covering the various cutting edge technologies of the fields with mission of bridging the gap between the Institutions and Industry and collaboration will be established with Institutions across South India for Training, Research and Product and Development.

#### Research Areas

Wireless Sensor Networks  
Wireless Networking  
Embedded Distributed Systems  
Embedded Linux  
Communication Engineering  
Antenna Design



## WORKSHOP ON 'DIGITAL SIGNAL PROCESSING'

The Department of Electronics & Communication Engineering of Vimal Jyothi Engineering College organized a five-day workshop on "Digital signal Processing" in industrial collaboration with ABE Semiconductor Design, Chennai on 14th – 18th January 2014, where the participants (Faculty, Research Scholar, Technical Assistant and Student) learned different design aspects of digital signal processing.

The field of Digital Signal Processing (DSP) has seen an exponential growth in the last three decades. DSP finds applications in almost all fields like audio, speech, sonar, radar and communication. The Fast Fourier transforms digital filters, power spectrum estimation, multi rate techniques and Wavelet transforms are some of the examples of DSP algorithms.

Many new digital products in communication and information sciences (eg: Cell phones, Digital Audio systems) are emerging in miniature size using these algorithms. In many applications, the digital systems have to process signals in real time. For such applications, the speed of the processor is very critical. Hence the need for special purpose Digital Sig-



nal Processors. In addition, they can be reprogrammed easily. The program was glorified by the kind presence of Rev Fr. Geo Pulikkal, Chairman of Vimal Jyothi Group of institution, Fr. Jinu Vadakkemulanjanal, Administrator of VJEC and VJIM, Dr. Benny Joseph, Principal, VJEC and Ms. Jerrin Yomus, HOD, ECE Department.

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## PATTERN LOCK: NEXT GENERATION AUTO THEFT PREVENTION SYSTEM

New generation vehicles are becoming smarter by the incorporation of higher computing power, connectivity solutions, advances in computer vision etc., along with the new generation automotive design. A modern vehicle utilizes remote keyless entry system and Immobilizer system as the main weaponry against vehicle theft. These systems prevent unauthorized access of the vehicle to a certain extent only. Due to the simple and poor nature of these security systems, auto theft incidents worldwide are on the rise.

Our project proposes an aim to design a next generation auto theft prevention system by adding significant features such as

- Android based Smart pattern lock
- Cryptographic keyless entry
- Touch screen ignition
- Adjustable motion alarm sensitivity
- Vehicle tracking using GSM& GPS
- GPS fencing
- Remote fuel cut-off

Group Members: JEENA FRANCIS, NIJILA KS, NEETHU JOSEPH, SREESHA K, MAYOORA M ANTONY (S8 ECE)

## INDUSTRIAL TRAINING AND VISITS

Breaking the monotony of engineering view point, apart from the theoretical aspects, acquiring knowledge through practical session has a great role.



Students from S6 ECE had their industrial visit to OEN on January 2012. They could familiarize to the various technology and devices in the manufacture of relay. First batch from S6 ECE attended internship program conducted by BSNL, Calicut. Second batch of students attended training by Akashavani, Kannur.

Students from S4 ECE had their industrial visit to Electro mechanical co operation, Bangalore.