Rastreeya Shikshana Samiti Trust

R V College of Engineering

Department of Electronics and Instrumentation Engineering

8th Mile, Mysuru Road, Bengaluru-560059

"AUTOMATION EXPLORER"

NEWSLETTER

Vol-2, Issue -1, 2016

In this Issue,

R V College of Engineering (RVCE) Established in 1963 with three engineering branches namely Civil, Mechanical and Electrical, today RVCE offers 12 Under Graduate Engineering programmes, 22 Master Degree programmes and Doctoral Studies, located 13 km from the heart of Bengaluru City - the Silicon Valley of India, on Mysuru Road Sprawling campus spread over an area of 52 acres set in sylvan surroundings provides an ideal ambience to stimulate the teaching-learning process, helping in bringing out skilled and disciplined Engineers. RVCE is rated one amongst the top ten self-financing Engineering Institutions in the country. Current annual student intake for Undergraduate Programmes & Post Graduate Programmes in Engineering is in excess of 1200. Highly qualified and dedicated faculties utilize their expertise in various disciplines to conduct Research and Development for Industry and Defense establishments in the country.

Message from Editor's Desk

Welcome to this issue of Newsletter from the Department of Electronics and Instrumentation Engineering. We are delighted to launch our Bi annual Newsletter **"AUTOMATION EXPLORER"**. This newsletter is a digital way for us to communicate with our students, faculty members, alumni and industrial partners. This newsletter will provide a glimpse of the department activities and achievements within the academic unit. Also it enlightens the readers about the latest happenings in the department, focusing about activities, placement, ISA and institutional club activities. We look forward for more activities and achievements from the department to march towards excellence in the future.

1. About the department of Electronics and Instrumentation Engineering


Dr. K B Ramesh, HoD

The Instrumentation Technology department was established in the year 1981 with an intake of 40 students and the current intake is 60 students. The Instrumentation Technology was later nomenclated as **"Electronics and Instrumentation Engineering"** in the year 2014. The department also runs a Post-Graduate programme in Biomedical Signal Processing and Instrumentation and an established Research Centre in 2011, affiliated to VTU Belagavi. It offers high quality research as part of its PhD programs. The department has been accredited multiple times by NBA, New Delhi, the latest being in 2013 for UG and in 2014 for PG.

The department aims to produce engineering graduates with adequate theoretical and practical knowledge in the area of electronics as well as instrumentation and computers so as to make them capable of design, implementation, development and maintenance of advanced instrumentation systems.

Instrumentation engineering is a specialized branch of electronics, computers and electrical engineering, primarily focusing on the principles and operations of measuring instruments used in the design, implementation, configuration, and development of automated systems. Electronics and instrumentation engineers carry out the task of measuring, testing, installing, designing, and maintaining various instruments used in the industry, hospital and other sectors of the society as well as carrying research in domain areas. The aim of instrumentation engineers is, "***To measure the world accurately and to control it precisely***".

The program curriculum is suitably designed to meet the challenges of global technology. The department has well qualified and experienced faculty members with research experience in allied domains and well equipped laboratories.

The implementation of outcome based education in the program enhances the knowledge of faculties and students to meet the challenges of new technological world so as to mould the graduates as successful professional engineers, researchers and entrepreneurs. The curriculum of this program is good enough for employment in industry, government, academia, research and management positions.

At the outset, I congratulate the newsletter committee members for their efforts in bringing out the newsletter. Newsletter is an amalgamation of all the events held in the department and it plays a pivotal role in showcasing the achievements accomplished by the faculty and the students.

2. *Department Vision &Mission, PEOs and PSOs.*

Vision

Achieving academic excellence in Instrumentation Technology by adopting interdisciplinary research with a focus on sustainable and inclusive technologies.

Mission

1. To create an environment for students to excel in domain areas and get motivated to involve in interdisciplinary research by utilizing state of the art infrastructure.
2. To impart technical knowledge, encourage experiential learning and develop future professional leaders.
3. To establish industry-academia networking and develop industry-ready students and future entrepreneurs, to meet societal & industrial challenges.
4. To motivate lifelong learning and research in sustainable technologies to find improved solutions for the betterment of society.

Program Educational Objectives (PEOs) of the Department

1. Apply Instrumentation, Electronics, Controls and Automation concepts to develop technical solutions for industrial problems.
2. Exhibit competency in adapting to various industrial challenges and work in inter-disciplinary projects with team spirit and professional ethics for achieving organizational goals.
3. Pursue higher education in technology or management and achieve professional excellence by imbibing leadership qualities and communication skills.
4. Become entrepreneurs with a focus on sustainable technologies and develop innovative solutions to meet industrial and societal needs.

Program Specific Outcome (PSOs) of the Department

PSO1: Design, analyze and practice the instrumentation, controls and automation concepts and techniques required for industrial and/or research pursuits resulting in product development, publications or patents.

PSO2: Demonstrate the knowledge of basic science, mathematics, electronic system design and programming for real-time applications, towards developing industrial solutions and become technology leaders of future.

3. Departmental Activities from Jan 2016 to June 2016

The department always endeavored to contribute significantly to the growth of technical education. The department has organized several workshops, seminars and guest lecturer for the benefit of faculty, students and research scholars of educational institutions in and around the region.

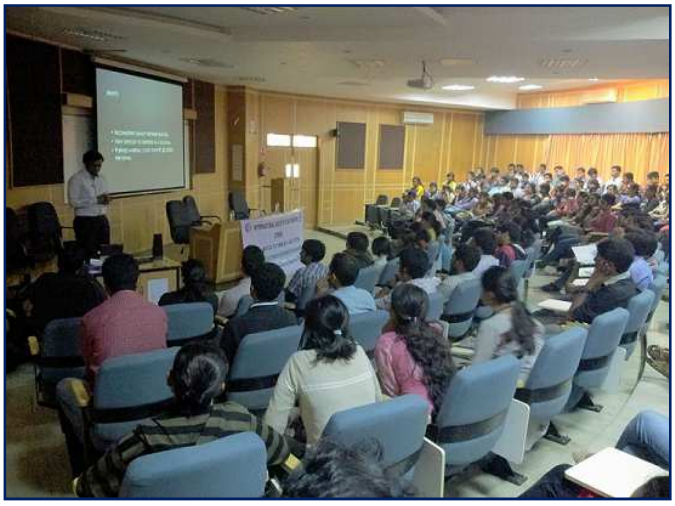
Table 1: Department events organized from Jan 2016 to June2016

Sl.No	Event Organized	Faculty co-ordinated	Organized by Department	Date
1	Programmable Logic Controllers	Prof. Harsha	CSE	18/01/2016
2	Parent Teachers Meeting	----	E&IE	27/2/2016
3	Applications on PLC	Prof. Harsha	IEM	7/4/2016
4	Digital E-Learning	Prof. Kendaganna Swamy	E&IE	31/5/2016
5	Pre CLAD training	Prof. Vidya M J Prof. Rajasree P M	E&I	6/6/2016 to 8/6/2016
6	CLAD Exam-NI LabVIEW	Prof. Vidya M J	E&I, E&C, EEE, TCE of RVCE	9/6/2016
7	MEMS based Biomedical Engineering workshop	Prof. Rajine Swetha Dr. Anand Jatti	E&I, E&C, EEE, TCE of RVCE	13/6/2016 to 18/6/2016
8	Information and Communication technologies	Prof. Kendaganna Swamy	E&IE	21/6/2016 to 23/6/2016
9	Alumni Meet	Dr. Anand Jatti Prof. Deepashree D	E&IE	26/6/2016

GALLERY

EVENT 1: Talk on Software Defined Radio- Nano Technologies.

Mr. Gadadhar Reddy CEO, NO-PO technologies (TEDX Speaker) addressing the gathering about his invention in Software Defined Radio-
Nano Technologies



EVENT 2: Parent Teachers Meeting

Parent Teachers Meeting held on 27-2-2016. Dr. K.B Ramesh addressing the parents

EVENT 3: One week MEMS based Biomedical Engineering workshop

The Dept. of E&I Engg has organized one week "MEMS based Biomedical Engineering" workshop from 13/6/16 to 18/6/16. As part of inauguration, the RSST has felicitated Padma Vibushan Dr. V. K Atre through Dr. K N Subramanya- *Principal*, Prof. K. N Raja Rao- *Advisor*, Dr. M Krishna- *Dean R&D*, Dr. K B Ramesh- *HoD, E&IE* RVCE.

EVENT 4: CLAD Exam NI LabVIEW:

The department had organized one week hands on training workshop in LabVIEW for in house circuit branch faculties in month of Dec 2015, as part of preparation for Certified LabVIEW Associate Developer (CLAD) Exam which is to be taken in the month of June 2016. Furthermore, 10 faculties had appeared for the exam held on 9th June 2016 at department of E&I Engineering, RVCE, of which, 3 faculties have successfully cleared the CLAD exam. Prof. Vidya. M. J and Prof. Rajasree. P. M from Dept. of E&I Engg, RVCE will setup NI LabVIEW Academy in the department by signing a MoU with NI, Bengaluru.

EVENT 5: Alumni Meet on 26/6/2016

Photo shows ALUMNI of E&I department from 1983 to 2015 batch

4. RVCE- ISA activities

The Instrumentation Technology program has conducted many professional activities under lead International societies like ISA, which is a non profit professional body that sets the standard for those who apply engineering and technology to improve the management, safety, and cyber security of modern automation and control systems used across industry and critical infrastructure. ISA develops widely used global standards; certifies industry professionals; provides education and training and provides career development programs for its members. RVCE-ISA student section is active since 2000 in the department. The RVCE-ISA activity is headed by **Prof. S. Venkatesh.**

Table 2: RVCE- ISA activities from Jan 2016- June 2016

Sl.No	Date	Event	Resource person
1	22/01/2016	Visit to International Machine Tools Expo (IMTEX) 2016 at Bengaluru International Exhibition center(BIEC)	----
2	29/01/2016	Talk on “Nanotechnology- Industry and future perspectives”	Mr. Gadadhar Reddy CEO, NoPo Nanotechnologies Pvt Ltd
3	11/04/2016	Technical Seminar on “Fundamentals of Automation”.	Mr. Prakash C.S, Vice President , ABB, B’Lore.

5. *Frequency Club activities*

"Frequency club" is one of the clubs which encourage technical creativity among the students at institutional level. The purpose of frequency club is to bring out efficient engineering graduates powered with multiple technologies and inspire young brains to develop interesting solutions for industrial, medical & societal problems. Frequency club is active since 1995 and hosted by department of Electronics and Instrumentation Engineering under the leadership of **Prof. S. Venkatesh.**

Table 3: Frequency club activities from Jan 2016 to June 2016

Sl.No	Date	Event	Resource person	
1	30/1/2016 & 31/1/2016	IOT WOrkshop	Innovians Technology-Prateek Gupta	60+ participants, Arduino, Internet Cloud based Solutions
2	20/3/2016	Recruitment Drive	Mr. Vasishta&Freq Club Seniors	40 Interviewed Amphi-Theatre, RVCE

6. *Industrial Visits.*

The department has common practice to arrange Industrial visits atleast once in a semester to give exposure to in the field of Automation, Electronics and Instrumentation.

The department has organized an Industrial visit to COCO COLA, Bengaluru on 5th April 2016 for current 6th Semester to give exposure to Automation technologies used at Industry level under the leadership of Prof. Kendaganna Swamy.

7. *Placement Details:*

As on 30th June 2016, 58students of 2016 pass out batch of department of Electronics and Instrumentation Engineering have been placed in various companies like Accenture, Cognizant, Infosys, Wipro and TCS. The percentage of placement is 92.06% of B.E Students of which 4 students went to overseas for higher studies (Table 1). The placement activities for 2017 pass out batch will start in the month of July 2016. The placement activities are co-ordinated by **Prof. Kendaganna Swamy.**

Table 4: Placement Statistics for 2016 pass out batch

	2016 Pass out
Total Number of students	68
Number of students eligible	63
Number of students placed.	58
Placement %	92.06
Higher studies	4

8. *Patent Filed.*

The department of electronics and instrumentation engineering has filed two patents for the academic year 2015-2016 (Table 5).

Table 5: Patent Details from Jan 2016 to June 2016

Sl. No	Patent/ Copyright	Applicant	Title	Date of Application
1	201641005314	Dr. S C Prasanna Kumar	Automatic Medication Dispensation and Alerting Unit	16-02-2016
2	20 1641010977	Prof. Kendaganna Swamy	Gesture Recognition system and device with sign language Translation	30-3-2016

9. *Publication Details of faculties/students*

1. S J Sushma ; S. C. Prasanna Kumar, "Automated micro calcification analysis using breast mammogram", *3rd IEEE International Conference on Computing for Sustainable Global Development (INDIACom), 2016* , 16-18 March 2016.
2. S J Sushma ; S. C. Prasanna Kumar, "Advancements in Research Techniques on Medical Image Processing for Breast Cancer Detection", *International Journal of Electrical and Computer Engineering(IJECE)* Vol 6, No. 2, April 2016.
3. S Kendaganna Swamy , Anand Jatti , B V Uma, "Random arbiter and platform level design for improving the performance on 4×4 NoC", *International conference on Electrical, Electronics, and Optimization Techniques (ICEEOT)*, April 2016, 10.1109/ICEEOT.2016.7754832.
4. Deepashree Devaraj, Dr. S. C. Prasanna Kumar, Rakshitha T.R, "Comparative Study of Imaging Transforms on Diabetic Retinopathy Images" in the proceedings *of IEEE International Conference on Recent trends in Electronic Information Communication Technology*, May 20-21, 2016. IEEE ISBN No.978-1-5090-0774-5/16**.**
5. Mrs. Vidya M J, Dr. Padmaja K V, "Implementation of Cost-effective Wrist-based BP monitor", *National Conference on "Information and Communication Technologies*", 16th – 18th May 2016, Department of TCE, R.V. C.E, Bengaluru.
6. Yadhuraj.S.R, Dr. B G Sudarshan, "GUI Creation for Removal of Motion Artifact in PPG Signals", *3rd International Conference on Advanced Computing and Communication Systems* (ICACCS -2016), Jan.22–23, 2016, Coimbatore, INDIA.

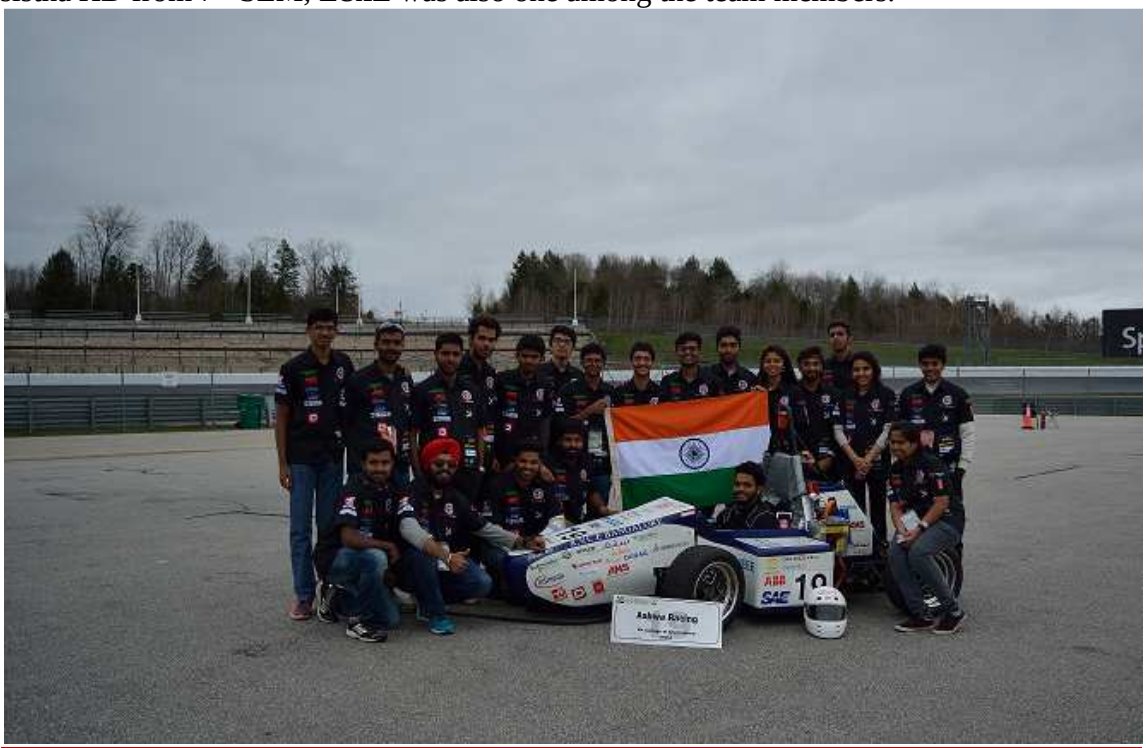
10.Student Activities:

Table 6: Student activities from Jan 2016 to June 2016

Sl.No	Event/Date	Student name	Awards won	Venue
1.	IEEE International Conference April 2016	Ms. Arathi Chandrashekar	Presented	AEC, Chennai, Tamilnadu
2.	IEEE International Conference April 2016	Ms. Parul Gupta	Presented	AEC, Chennai, Tamilnadu
3.	IEEE International Conference April 2016	Ms. Sheetal S	Presented	AEC, Chennai, Tamilnadu
4.	Drama Skit, 30/3/16 to 1/4/16	Mr. Arun Kumar	1st Prize	MSRIT, Bengaluru
5.	REVAMP 2016, national Level Techno Cultural management and sporting Extravaganza. 29/3/2016 to 30/3/2016	Ms. Sanjana Suresh	Runner	REVA university
6.	VTU Inter College Athelitic Meet, March 2016	Mr. Zumair Khaja	1st Prize	Sir-MVIT, Bengaluru
7.	RNSIT Inter College Tournament, Feb 2016	Ms. Sanjana Suresh	Winner	RNSIT, Bengaluru
8.	Inter Collegiate Zonal Tournaments, Bang South Zone Volley Ball, 25-02-2016 &26-02-2016	Mr. Chetan Patil	Winner	SJBIT, Bengaluru
9.	Table Tennis, Unmaad 29/01/2016 to 31/01/2016	Ms. Leena Bindal	2nd Prize	IIM, Bengaluru
10.	Table Tennis, Unmaad 29/01/2016 to 31/01/2016	Mr.Nadeem Shoukath	2nd Prize	IIM, Bengaluru
11.	Drama State level, 22/1/16 to 23/1/16	Mr. Arun Kumar	1st Prize	Mudigere
12.	One Act Play, Kurukshetra, 2016	Ms. Alisha R N	1st Prize	SASTRA University, Tanjore, TN

11.International Visits

The Jatayu team of RVCE has participated in student UAS competition held at Webster field, St. Inigoes, Maryland state, USA from 16-19 June 2016, won 18th place among 43 teams. Mr. Vasistha HD from 7th SEM, E&IE was also one among the team members.



The Ashwa racing team of RVCE participated in Formula hybrid'16 contest and won 4th prize. Mr. Syed Faraz and Mr. Rounak Maru of 7th SEM, E&IE participated in the event at United States of America held on May 2016.

Bio Informatics

Bioinformatics is a relatively new interdisciplinary field that integrates computer science, mathematics, biology, and information technology to manage, analyze, and understand biological, biochemical and biophysical information. Bioinformatics is the development of computational methods for studying structure, function and evolution of genes, proteins and whole genomes. Bioinformatics is the application of computational tools on a molecular data including the means to acquire, analyze, or visualize such data.

Bioinformatics research explores the functional relationships between the composition of the genes within the context of the genome and the structure and function of the proteins encoded by these genes. Due to the huge volume and complexity of biological data available today, a fundamental component of biomedical research is now insilico analysis. This includes modeling and simulation of biological systems and processes, as well as automated bioinformatics analysis of high-throughput data.

In many cases, abnormality or any disease can limit a person's ability to carry out normal daily activities. The diagnosis involves a thorough medical checkup, and a series of blood tests x-rays/or ultrasound scanning. Detection of disease at early stage happens to be a challenging task in medical field.

Early diagnosis and treatment are key to managing the any disease condition. Doctors use a variety of methods to treat the disease. The genes contribute to the overall risk. The genes involved may vary between individuals and population in different parts of the world. With advances in software and hardware technologies taking place, a new computational approach has been evolved for the analysis of biological data such as protein and nucleic acid sequences. The science of Bioinformatics, which is the melding of molecular biology with computer science, is essential to the mining of genomic information in understanding human diseases, and in the identification of new molecular targets for drug discovery.

The results will be obtained from the advanced techniques which are incorporated in the software module can be used for the characterization of the disease. The generated results provides better understanding of the disease and help the physicians and analysts in improved treatment and prevention of the disease.

Dr. K B Ramesh
HoD, E&IE, RVCE

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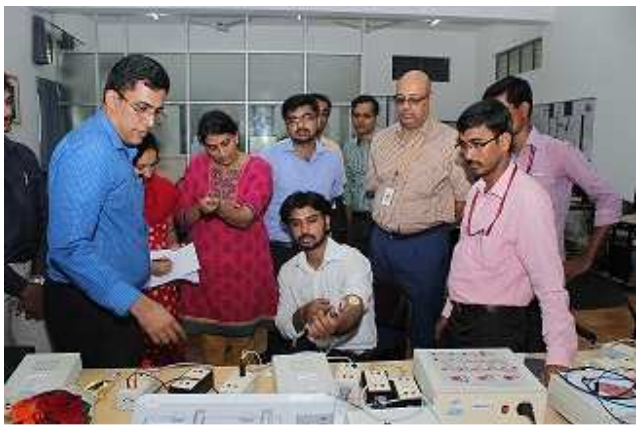
Student Editors: **Ganavi B , Manisha, Sahana H G of 4th SEM, E&IE,RVCE**

Gallery: One Week workshop on "MEMS based Biomedical Engineering"-

Padmavibhushan Dr. V.K.Atre addressing about importance of MEMS in Biomedical applications

Dr. B.C.Srinivas -Professor of cardiology, Jayadeva Institute of cardiology, Bengaluru delivering a talk on Biomedical Instrumentation.

Dr. Madhurima Chattopadyay -Professor and HoD, Heritage Institute of Technology, Kolkata delivering a talk on Electrical Impedance Tomography.



Hands on session on Bio signal acquisition by Mr. Kumar S, TMI systems, Bengaluru

Valedictory Session for "MEMS based Biomedical Engineering" workshop.