



Rastreeya Shikshana Samithi Trust  
**R V College of Engineering**  
Department of Electronics and Instrumentation Engineering  
8<sup>th</sup> Mile, Mysuru Road, Bengaluru-560 059

**“AUTOMATION EXPLORER”**  
**NEWSLETTER**  
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R.V.College of Engineering (RVCE) established in 1963 is one of the earliest self-financing engineering colleges in the country. The institution is run by Rastreeya Sikshana Samithi Trust (RSST) a not for profit Trust. RVCE is an Autonomous college. Currently, the institution offers 12 Bachelor, 21 Master Programs and all the departments have research centre's, affiliated to Visvesvaraya Technological University (VTU) Belagavi. The institution has set itself a Vision "Leadership in Quality Technical Education, Interdisciplinary Research & Innovation, With a Focus on Sustainable and Inclusive Technology". Recent awards and achievements includes "Engineering College of the Year-2015" by the Higher Education Review Magazine, Certified as 'Global League Institute' by Great Place to Study Research Institute (GPSRI), Ranked 49<sup>th</sup> in the Country by National Institutional Ranking Framework (NIRF- 2017), Ranked 7th among the top 113 Pvt. Engg. Colleges by The Week Magazine, Ranked 9th among the top 10 of 100 Pvt. Engg. Colleges in the Country by Education World Magazine. The institution has been accredited by NAAC. All the UG programs and eligible PG programs have been accredited multiple times by NBA. The College currently has a student strength of about 5600, faculty strength of more than 400, Technical & Administrative Staff of 256 and about 250 Research Scholars are pursuing Ph.D. RVCE has been conducting several FDPs, Conferences and Workshops under TEQIP to enhance the knowledge base.

**Message from Editor's Desk- Prof. Sandesh R S**

Welcome to this issue of Newsletter from the Department of Electronics and Instrumentation Engineering. We are delighted to launch our Bi-Annual News Letter **“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 departmental activities and achievements. Also, it enlightens the readers about the latest happenings in the department, focusing about different activities like placement, ISA, institutional club activities, student and faculty achievements. We look forward for more activities and achievements for the department to march

towards excellence in the future. I would like to thank all teaching, non teaching staff and our beloved students for their constant support.

## **1. About the Department of Electronics and Instrumentation Engineering**

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 by NBA, New Delhi, in the year 2017 for UG for a period of **3 years** and in 2014 for PG.



Dr. K B Ramesh, HoD

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 faculty 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 sectors, academia, research, management positions as well as entrepreneurial ventures of our students. 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 interdisciplinary 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 Jul 2017 to Dec 2017*

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

**Table 1: List of activities conducted in the department**

Sl. No	Event Organized	Contributory Industry/	Date
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Institution/ Faculty			
1	One day workshop on ICT	Prof. Kendaganna Swamy	22/07/2017 and 28/07/2017
2	Talk on data Structures	Prof. Sagar B. M, ISE Dept	17/08/2017
3	Workshop on calibration and measurement	Honey well Technologies	19/8/2017
4	Department Alumni Meet	--	09/09/2017
5	Talk by Alumni on project work	Mr. Renuka Prasad, Alumni of EIE	19/09/2017
6	Talk on robotics	Kennerhaft Innovations, Mumbai	20/09/2017
7	Parents Teachers Meet	--	14/10/2017

#### 4. RVCE- ISA activities

The department 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**. Below are the lists of activities conducted for period from JULY, 2017- DEC 2017.

**Table 2: RVCE-ISA activities conducted in the department**

Sl. No	Name of the Speaker	Date of seminar	Targeted audience	Date
1	Talks on Automation Problems and Student Projects	Mulitech Automation	5 <sup>th</sup> SEM, 7 <sup>th</sup> SEM	16/7/2017
2	Talk on Artificial Intelligence	Automation Consultant	5 <sup>th</sup> SEM, 7 <sup>th</sup> SEM	27/10/2017

#### 5. Frequency Club activities

“Frequency club” is one of the innovative clubs which encourages technical creativity among the students at institutional level. The purpose of the 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**. The frequency club is now more focused on executing the R&D projects.

#### 6. RVCE- NI LabVIEW Academy

The RVCE- NI LabVIEW academy started in 2016 is for anyone seeking LabVIEW education and knowledge within the institution level hosted by department of E&I engineering. The department organizes proficiency courses for students during weekends from NI and faculty from Dept. of E&I Engineering, Bengaluru for. The students and faculty have the opportunity, knowledge, and tools to attempt the Certified LabVIEW Associate Developer- CLAD certificate online exam. Table 3 shows the activities conducted by RVCE-NI LabVIEW

**Table 3: RVCE-NI LABVIEW academy activities conducted in the department**

Sl. No	Name of the activity	Name of the resource person/ Industry	Date
1	NI My DAQ	Mr. Vasanth, Engineer, VI Solutions	11/12/2017 to 15/12/2017
2	Do Engineering	National Instruments from London	20/10/2017

### 7. Team Hydra

The team hydra was officially formed by one of the student from E&I Engineering department Mr. Siddhant Bajpai of 6<sup>th</sup> SEM on Jan 2016. The students of this club are from multidisciplinary branches, who are working towards making autonomous underwater vehicle to explore new frontiers in oceanographic research and under-water surveillance for treatment of water, detection of wrecks and leakages. The students are constantly encouraged to participate in competition such as International conference/Journals both in INDIA and abroad. The team hydra is currently working in collaboration with **MSME sector, Centre of excellence, IISc, Bengaluru**. The team Hydra is headed by **Dr. S. C. Prasanna Kumar, Professor**, E&I Engineering department.

### 8. R & D Projects:

The department of E&IE has received a sum of 5.85 lakhs during July 2017 to December 2017 as listed in the table 4,

**Table 4: Funds received for the year July 2017 to Dec-2018**

Sl. No	Name of the faculty	Title of project	Name of the company	Amount Sanctioned	Year
1	Dr. Prasanna Kumar S C	Automated underwater purifier	IISC, MSME, Govt. of INDIA	5.85 Lakhs	2017-2018

### 9. CONSULTANCY:

The list of faculties were involved in consultancy projects listed in table 5

**Table 5: Consultancy activities for the period July 2017 to December 2017**

Sl. No	Name of the faculty Involved	Name of the company	Title of the project	Cost of the Project in lakhs	Date of commencement of the project
1	Dr.Rajine Swetha.	TE Connectivity India Pvt Ltd, Shirwal, Maharashtra	Performance/Reliability testing of Raspberry Pi controller	3.00	November 2017
2	Prof.Harsha.H Dr.Rajine Swetha.	SAMSON AUTOMATION TECHNOLOGIES [SAT], Panchakula, Haryana	Design of an Automated System to Pick and Place Gift Toys from Bowl to the Conveyor	12.00	December 2017

### 10. Awards and Recognition

The Annual Convocation was held on 29<sup>th</sup> July 2017, of which the UG students of our department have bagged six ranks that are listed in the table below.

**Table 6: Autonomous UG ranks for the department**

Sl. No	USN	Name of the Student	CGPA	Rank
1	1RV13IT022	KARTHIK H G	9.36	1
2	1RV13IT017	DEVYA SINGH	9.25	2
3	1RV13IT018	G V SIDDESHA	9.09	3
4	1RV13IT050	SNEHIL	9.02	4

5	1RV13IT054	SUSHMA PATIL	8.94	5
6	1RV13IT011	ANKUR RAVINDRA BODHE	8.94	6

### 11. Workshops/seminars/conference attended by faculty.

Table 7: List of workshops/seminars/conference attended by faculty

Sl No	Faculty Name	Conference /Workshops /Seminars attended	Date Attended
1	Prof . Kendaganna Swamy	3 days workshop on faculty development Program on NoC	17/07/2017 to 19/07/2017
2	Dr.Anand Jatti	Cyber Forensic Tools	25/09/2017to 27/09/2017
3	Dr.Padmaja K V	International Conference on signals, systems and computers	29/10/2017to 1/11/2017
4	Dr.Anand Jatti	Microfluidics based Healthcare Diagnostics and Interfacial Phenomena	06/11/2017 to 11/11/2017

### 12. Publication details of faculty and students.

1. Dr. Pdamaja K V, Mrs. Kavaya N, “Glucoma Detection using texture feature extraction”, 51<sup>st</sup> Asilomar conference on signals, systems and computers, oct-29 to Nov 21, 2017.
2. Mrs. Vidya M J, Dr. Pdamaja K V, “Affirmation of electronic patient record through Bio electric signal for medical data authensity”, Penang, Malaysia on 5 – 8 November 2017.
3. Mr. Chanda V Reddy, Dr. Pdamaja K V, “Novel Framework for enhancing communication performance quality in 5G network”, International Journal of Engineering and Technology, Vol.9, No.3, July- 2017, pp 1682-1694.
4. Mrs. Vidya M J, Dr. Pdamaja K V, “Appending Photoplethysmographic Signal as a security key for encryption of Medical Image using Watermarking Technique” 2nd International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2017) Springer organized by Central University of Rajasthan, Ajmer, 23rd -25th November 2017.
5. Mrs. Deepashree Devaraj, Dr. S C Prasanna Kumar, “Detection of Exudates through Local Binary Pattern in Diabetic Retinopathy”, 3<sup>rd</sup> International conference on Cognitive computing and Information processing (CCIP 2017)held at JSSATE, Bengaluru on 15<sup>th</sup>-16<sup>th</sup> December 2017.
6. Mrs. Veena Divya K, Dr. Anand Jatti, “Computer Aided Classification using Support Vector Machines in Detecting Cysts of Jaws”, Advances in Science, Technology and Engineering Systems Journal, Thomson Reuters, vol. 2, no. 3, pp. 674-677, 2017.
7. Mrs. Veena Divya K, Dr. Anand Jatti, “A Study and Analysis of Image Enhancement Techniques Augmenting Dental Pantamograms to review Jawbone Cysts and Tumors” The 2017 IEEE Region 10 Conference (TENCON) Penang, Malaysia on 5 – 8 November 2017.
8. Mrs. Rajasree P M, Dr. Anand Jatti, “Patch based feature extraction algorithm for mammographic cancer images”, 2nd International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2017) Springer organized by Central University of Rajasthan, Ajmer, 23rd -25th November 2017.

### 13. Industrial Visits.

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



**Table 8 Industrial visit during July-2017 to Dec-2017**

Sl. No	Name of the industry	Faculty Co-ordinator	Date	Students
1	Confident Electronics, Bengaluru	Mrs. Tabitha Janumala	20-12-2017	3rd SEM PG
2	MOOG INDIA, Bengaluru	Mrs. Veena Divya k	13-08-2017	5th SEM

**14. Placement Details:**

As on 31<sup>th</sup> December 2017, 33 students of 2017-2018 passed out batch of department of Electronics and Instrumentation Engineering, have been placed in various companies like Accenture, Cognizant, Infosys, Wipro and TCS. The placement activities are co-ordinated by **Prof. Kendaganna Swamy**, from E&I Engg department.

**15. MoU with department of E&I Engineering.**

The Department of Electronics and Instrumentation Engineering was instrumental in signing a MoU with Institute of Animal Health and Veterinary Biologicals (IAH&VB), Bengaluru on 22-09-2017. **Dr. S C Prasanna Kumar** Initiated the process at Institute level.

**M.Tech in Biomedical Signal Processing & Instrumentation**

The department of Electronics and Instrumentation Engineering started PG programme (M.Tech in Bio Medical Signal Processing and Instrumentation) with an intake of 18 students in the year 2005 affiliated to VTU, Belagavi and reached autonomous status in the year 2016. The PG programme has one Professor, Two Associate professors and one Assistant Professor. The PG programme is managed by **Dr. Padmaja K V**, Professor and Associate Dean.

**Program Educational Objectives (PEOs)**

**PEO1:** Apply basic Physiological concepts and provide technical solutions for medical problems.

**PEO2:** Exhibit competency for achieving excellence in Industry, Academics, R&D organizations, Entrepreneurial pursuit and consulting firms.

**PEO3:** Demonstration and develop sustainable biomedical engineering skills for betterment of society and ethics.

**PEO4:** Exhibit leadership qualities and engage in life-long learning through independent study and research.

**Program Specific Outcomes (PSO)**

**PSO1:** Design and analyze basic and advanced biomedical appliances required for medical domain and research pursuits.

**PSO2:** Apply the concepts of signal and image processing techniques to address the problems in healthcare.

**1. M.Tech Student Major Project details for the year 2017-2018**

**Table 9: PG Major Project Details**

Sl No.	Students Name	USN	Title of the project
1	ADARSH RAO	1RV16LBI01	Designing the software module for the detection of protein interaction of rheumatoid arthritis
2	AKSHAY D	1RV16LBI02	Anterior Crucial Ligament (ACL) Detection in MRI images to classify KOA (Knee Osteoarthritis)
3	ASHA VADDE	1RV16LBI03	Development of a Portable Atherosclerosis Screening Device
4	GANESH R	1RV16LBI04	LabVIEW based EEG control of robot
5	M.RAKSHITA	1RV16LBI05	Determination of root causes in XGA and XFA filter boards of MRI machines
6	SHIVARAJ H	1RV16LBI09	Design And Simulation Of CGM Sensor For Drug delivery System
7	MAHESH B	1RV16LBI06	Design And Simulation Of SAW Sensor For Estrogen hormone detection in

			living beings
8	MUTTHAHEERA MG	1RV16LBI07	Development of a CAD algorithm to detect different breast cancer abnormalities
9	SHIAMA NAYAK	1RV16LBI08	Automation of Ceiling mounted digital radiography automation system
10	THANUJA M	1RV16LBI10	Application of Novel Method for Automatic Segmentation of Brain Tumors in MRI Images
11	VEENA AC	1RV16LBI11	Development of an automated system for diagnosis of diabetic retinopathy

## 2. Awards and Recognition

- The following students of PG have bagged two ranks in biomedical signal processing and Instrumentation under VTU, Belagavi.

**Table 10: VTU Rank Details**

Sl. No	USN	Name of the Student	Rank
1	1RV15LBI02	BALA MALANI	1
2	1RV15LBI06	KAVYA N	2

- The R&D project entitled, “**Stress Levels of associated Diseases in Bangalore City Police Personnel**” sanctioned by Bureau of Police Research & Development-in the year 2013 to **Dr. B G Sudarshan (PI)**, has been completed, received a appreciation from BPRD and RVCE, also published the same in print media.

## Gallery Section



Industrial Visit to MooG for 5<sup>th</sup> SEM students on 13-08-2017



Department Alumni Meet on 09/09/2017



One Day workshop on ICT- Prof Kendaganna Swamy from the dept. of EIE as resource person



5 days hands on training on NI-my DAQ from Mr. Vasanth from VI solutions