



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 7<sup>th</sup> among the top 113 Pvt. Engg. Colleges by The Week Magazine, Ranked 9<sup>th</sup> 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

***Message from Editor's Desk- Prof. Tabitha Janumala***

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. CH. Renu Madhavi,**

**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 state of art ready for design, implementation, development and maintenance of advanced instrumentation systems. Instrumentation engineering is a specialized branch, 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 process industries, hospitals 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 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. BOS meeting conducted in the department***

The department has conducted the BOS meeting to discuss the syllabus and scheme of UG 2018. BoS Members (L-R), Mr.Srinidhi, Mr.Srikanth and Dr. Meenakshi.



Fig.1: 19<sup>th</sup> BOS meeting held on 27/01/2018

### ***4. CISCO - IoT Inauguration by the department***

The department has inaugurated the CISCO – IoT center to carryout various training programs, projects and internships for the students.



Fig.2: CISCO – IoT inauguration on 31/03/2018 by the department.

## ***5. Project Exhibition organized by the department for 8<sup>th</sup> Semester Students***

The students of 8<sup>th</sup> semester were given an opportunity to showcase their work done in the major projects in the exhibition organized by the department on 02/05/2018.



Fig.3: Students demonstrating the project during the exhibition

## ***6. Alumni meet conducted by the department***

The department has conducted the alumni meet on 30/06/2018; Alumni from various industries have attended and shared their experiences. Few of them assured that they will be organizing the motivation talks for the students to encourage them as part of the events under alumni activities.



Fig.4: Group photo of Alumni meet conducted on 30/06/2018

## 7. Parents Teachers Meeting was organized by the department

The department has organized the Parents Teachers meeting. Parents of all odd semester have attended the meeting. The parents were happy to know the activities happening in the department and shared their views. The parents communicated to the counselors to the status of their respective ward in academics and other co-curricular activities.



Fig.5: Parents teachers meeting conducted on 10/03/2018

## 8. Student Achievements

The students of 3<sup>rd</sup>, 5<sup>th</sup> and 7<sup>th</sup> semesters were motivated to take up the NPTEL courses in various domains and have successfully completed the courses.

Table 1: List of students who completed NPTEL courses successfully

Sl.No	Name	NPTEL Course	Certification Year and type
01	<b>Vidhyashree</b>  <b>Topper 5%</b>	<b>Control Engineering</b>	<b>Elite 2018</b>
02	Reema Raj	Microprocessors and Microcontrollers	Elite 2018
03	Riya Saini	Microprocessors nd Microcontrollers	Elite 2018

04	Riya Saini	Control Engineering	Elite 2018
05	VenkatRaghaven	Analog electronics	Elite 2017
06	Akshara R	Programming in C++	Elite 2017
07	ParthaSarathy	Python Programming	Elite 2017
08	Lakshmi Narasimhan	Microprocessors and Microcontrollers	Elite 2017
09	AnanthPadmanabhan	Microprocessors and Microcontrollers	Elite 2017
10	Kaushik	Microprocessors and Microcontrollers	Elite 2017

### **BEST PAPER:**

**Miss Fathima** has been awarded First Prize in Ideate, Paper Presentation competition conducted on July 14th at COCHIN Gymkhana by Government Model Engineering College KOCHI as part of EXCEL 2018 in association with IEEE EMBS. She was also awarded a cash prize of Rs.8000.00

Title of the paper : **HAND HELD DEVICE TO DETECT OSTEOPOROSIS**

**Guide: Dr.B G Sudharshan**

### ***9. Departmental Activities from JAN 2018 to JUNE 2018***

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 2: List of activities conducted in the department**

<b>Sl.No</b>	<b>Event Organized</b>	<b>Contributory Industry/ Institution/ Faculty</b>	<b>Organized by Department</b>	<b>Date</b>
<b>1</b>	Expert talk on “PROCESS SAFETY”	Mr. M Sukumaran, ISA Member	EIE	14/02/2018
<b>2</b>	CISCO – RVCE Embedded system	Industry, Faculty	EEE,EIE,ECE of RVCE	19/02/2018 to 24/02/2018
<b>3</b>	CISCO – RVCE Embedded system	Industry, Faculty	EEE,EIE,ECE of RVCE	24/02/2018 to 28/02/2018
<b>4</b>	Workshop on “Design & Development of Realtime Application Using Microcontroller”	ALS Pvt Ltd.	E&IE	09/03/2018 to 11/03/2018
<b>5</b>	2 Days workshop on Digital system Design for VERYLOG HDL Using Artix Board	Industry, Faculty	E&IE	12/04/18 and 13/04/2018

## *10. 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.



Fig.6: Investiture Ceremony of ISA for the Academic year 2018-19 held on 14/02/2018

## *11. Awards and Recognition*

- **Dr. Anand Jatti, Associate Professor,** given hands on demonstration on Biomedical Instrumentation & Signal Processing Using MAT LAB On 23/02/2018 in PVP Polytechnic, Dr. AIT Campus, Bengaluru – 56.
- **Dr. Anand Jatti, Associate Professor,** Advisory committee member for Innovative Ideas In Engineering & Technology (IIET-2018) Conference organized by RYMEC Bellary & IFERP.
- **Dr. Anand Jatti, Associate Professor,** Mentor for Topic Visual Inspection of concrete structures using Image Processing tools, Smart India Hackathon 2018, NCL, Pune.
- **Prof. VeenaDivya K, Assistant Professor,** Online course completed on Machine Learning by Stanford University – Online through COURSERA.
- **Dr. Padmaja K V, Professor & Associate Dean,** As a Member of BOE in Department of EIE, RVCE assisted chairman for the scrutiny of UG question papers for even sem 2017-18 conducted on 13/04/2018.

- **Dr. Padmaja K V, Professor & Associate Dean**, Assisted the Department in selection of best outgoing student for TCS award both for UG and PG on 16/04/18 .Also assisted in choosing the best project group for the even sem, 2018
- **Dr. Padmaja K V, Professor & Associate Dean**, Invited as External Expert for Recruitment & Assessment Centre of DRDO for Assessment of Scientists in the discipline of Electronics on 26/04/2018 at Hyderabad, DRDO Assessment Center (DAC).
- **Dr. Padmaja K V, Professor & Associate Dean**, Invited as evaluator for paper presentations in topics related to current trends in technology by Global Academy of Technology on 05/05/2018.
- **Dr. Padmaja K V, Professor & Associate Dean**, As Program coordinator and paper review for circuit branch at RVCE, for the National conference on Knowledge Dissemination of PG projects & Research works on 07/05/2018 and 08/05/2018.
- **Dr. Padmaja K V, Professor & Associate Dean**, Invited as Doctoral committee external member to review the progress of Ph.D candidates at Oxford College of Engineering on 30/05/2018.
- **Dr. C H Renumadhavi, Associate Professor**, achieved NPTEL “ELITE” certification for two courses.
  1. Outcome based pedagogy principles for effective teaching
  2. Effective Engineering Teaching

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

Table 3: List of workshops/seminars/conference attended by faculty

SI No	Faculty Name	Conference /Workshops /Seminars attended	Venue	Date Attended
1	Prof. Rachana S Akki	Workshop on “ICT Tools”	MSRIT, Bengaluru	16/01/2018 to 19/01/2018
2	Dr. Prasanna Kumar S C	“47 <sup>th</sup> ISTE National Convention”	Saint Gits College of Engineering, Kottayam, Kerala	27/01/2018 to 29/01/2018
3	Prof. Harsha	PLC integration with the SCADA	BOSCH REXROTH CENTRE	07/03/2018 and 08/03/2018
4	Prof. Harsha	One Week FDP on “Multi domain System Modeling and Simulation using Modelica”	EEE Dept., BMSCE Bengaluru	04/06/2018 to 08/06/2018

### 13. Student activities

The students are constantly encouraged to participate in techno-cultural events and internships. Below Table 5 gives list of activities from students, for past 6 months.

Table 4: Student activities from Jan 2018 to June 2018

Technical Event				
Sl. No	Event	Name of Student	Awards won	Venue
1.	INSPIRIT'18, FAQ-QUIZ, 16 <sup>th</sup> to 17 <sup>th</sup> Mar, 2018	Mr. Sagar C Angadi	Runner Up	RIT, Bengaluru
2.	Excel skills for Business : Essential, Mar, 2018	Mr Aakash Bhansali	Course Completed	Macquarie University, Australia
Sports				
1	AZURA 2018, 2 <sup>nd</sup> to 4 <sup>th</sup> Apr, 2018	Ms. Sahana G Hegde	2 <sup>nd</sup> Place	NHCE, Bengaluru
2	Justice K S Hegde Memorial South zone Invitational basketball Men & Women Tournament 2018, 23 <sup>rd</sup> to 25 <sup>th</sup> Mar, 2018	Ms. Sahana G Hegde	2 <sup>nd</sup> Place	N.E.T Sports cell, Nitte, Karkala
3	Inter Departmental carom tournament, Chemexon-2018	Mr Sanjay Hunagund	2 <sup>nd</sup> Place	BIET, Davanagere
4	Utsav 2018, Carrom (Doubles), 13 <sup>th</sup> to 15 <sup>th</sup> Mar, 2018	Mr Venkatesh Pawar	1 <sup>st</sup> Place	BMSCE, Bengaluru

Internships			
Sl.No	Name of the Company	Name of Student	Duration
1	TMIN Systems, Bengaluru	Mr. Makani Ramakrishna	1 <sup>st</sup> June 2018 to 31 <sup>st</sup> July 2018

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

1. Prof. Deepashree Devaraj, Dr. S. C. Prasanna Kumar, Miss. Suma R, "Robust detection of Hard exudates for diagnosis of Non-Proliferative Diabetic Retinopathy using Integrated approach", International Journal, Jan 2018, Vol. 614, pp- 525-534.
2. Tabitha Janumala, Dr.K.B.Ramesh, Harish A Haralachar, "Development of an Image-Based Modelling Tool for the Spinal Deformity Detection Using Curve Fitting Technique", International Journal of *Engineering Research in Electronics and Communication Engineering (IJERECE)*, April 2018. DOI: 01.1617/vol5/iss4/pid68305, Vol.5, Issue. 4, ISSN (Online) 2394- 6849.

3. Tabitha Janumala, Mahesh Bani, Dr. Prasanna Kumar S C, “Design and simulation of estrogen hormone detection sensor”, *International Journal for Research Trends and Innovation*, May-2018, Vol. 3, Issue 5, ISSN(Online): 2456-3315.
4. Dr. Anandatti, Mrs. G. BalaMaalini, “Brain Tumour Extraction using Morphological Reconstruction and Thresholding”, *ELSEVIER International Journal*, Vol.5, Issue 4, Pages 10689–10696.
5. Dr. Prasanna Kumar, Mr. Shivaraj Heballi, “Design & Simulation of MEMS Based Sensor for Continuous Glucose Monitoring”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-109.
6. Prof. Deepashree Devaraj, Ms. Veena A C, “A Survey on Automatic Detection of Microaneurysm in Diabetic Retinopathy”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-109.
7. Dr. Sudarshan B G, Ms. Asha Vadde, “Photoplethysmography and Its application: A Review”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-110.
8. Dr. K B Ramesh, Mr. Adarsh Rao, “Development of a Software Module for Detection of Rheumatic Arthritides Genomes using Protein Sequence”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-110.
9. Prof. Harsha, Mrs. Tanuja M, “Automatic Segmentation of Brain Tumor in MR Images”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-111.
10. Prof. Rajasree P M, Ms. Muthaheera M G, “Development of a CAD Algorithm to detect & classify different breast cancer abnormalities”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-111.
11. Dr. Anand Jatti, Mr. Sanjeev Kubkaddi, Mr. Akshay Doddagoudra, “Anterior Cruciate Ligament (ACL) Detection in MRI Images to classify Knee Injury”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-112.
12. Prof. Tabitha Janumala, Dr. Prasanna Kumar, Mr. Mahesh Bani, “Design & Simulation of estrogen Hormone Detection Sensor”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-113.
13. Dr. Padmaja K V, Mr. R Sriram, Mr. Y Steve Rixon, Ms. L Shiyama Nayak, “Development of Master Control unit for ceiling mounted digital radiography system”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018, pp-113.

14. Dr. CH Renumadhavi, Ms. Rakshitha, “Determination of Root Causes of defects in the boards of MR Subsystem”, National conference on *Knowledge Dissemination of P G Projects & Research Works*, May 2018,pp-114.
15. Padmaja.K.V, Vidya.M.J, “Enhancing Security Of Electronic Patient Record Using Watermarking Technique”, *ELSEVIER International Journal* , Vol. 5, Issue 4, 10660–10664
16. Deepashree Devaraj, Dr. S. C. Prasanna Kumar, Suma R, “Review on segmentation of exudates and microaneurysms for early detection of Diabetic retinopathy”, *ELSEVIER International Journal* , Vol. 5, Issue 4,10845-10850.

### **15. Industrial Visits.**

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

Table 5: Industrial visit during Jan 2017 to June 2017

Sl.No	Name of the industry	Faculty Co-ordinator	Date	Students
1	BICE, Automation & Biomedical Projects Exhibition	Mrs. Deepashree D Mr. KendagannaSwamy	15/02/2018 to 17/02/2018	4 <sup>th</sup> SEM UG
2	KPTCL, Nelamangala Receiving Station	Mrs. Tabitha Janumala Dr.AnandJatti	26/02/2018	6 <sup>th</sup> SEM UG
3	CFTRI, MYSURU (To Explore analytical instruments & applications)	Mrs. Rachana Akki Mrs. Sandesh R S Mrs. Harsha H	12/03/2018	6 <sup>th</sup> SEM UG

### **16. Placement Details:**

The total number of eligible students for placements for the batch 2017-18 is 48, 33 students have been placed in various companies like Accenture, Cognizant, Infosys, Wipro and TCS, with the percentage of placement being 68.75%. 4 students among the eligible students have not opted placements, but have gone for higher studies. The placement activities for 2018-19 batch will be starting in the month of July 2018.

### **17.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.

### 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.

## 18. Projects Submitted

Table 6: Details of project submitted for funding

Sl. No	Name	Title of project	Funding agency	Amount in Lakhs
1	<b>PI:</b> Dr.S. C. PrasannaKumar <b>Co PI:</b> Dr. Srilakshmi.K, Dr.Sattesh Babu Gandla, Prof. VeenaDivya. K, Prof. Rajasree. P. M, Prof. Sudha. R. Karbari	Development of Integrated Glucose Monitor and Insulin Injection Device e-pancreas	DST - Technology Development Transfer	143.50

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*Gallery Section*



Industrial visit to BICE ON 15/02/2018



Industrial visit to KPTCL for 6<sup>th</sup> SEM students on 26/02/2018



Department has conducted 2- days National Conference on "Knowledge Decimation of P G Projects & Research Works ", on 08/05/2018



Industrial visit to CFTRI, Mysore on 12/03/2018



CISCO - IoT Workshop held on 19/02/2018 to 24/02/2018



Sports winning faculty of E &IE dept. during annual sports meet-2018 held at RVCE.