



**Faculty Of Engineering**  
**Department of Electronics & Communication Engineering**

**REPORT ON DEPARTMENT EVENTS**

Academic year & Semester	2016-17, Even Semester	
Name of the Department	Electronics and Communication Engineering	
PoC Faculty Member for clarifications (write email ID & mobile number for contact)	Prof. Vivek	
<b>Details of the Event</b>		
Name of Event	2 Days Workshop on Electro bionics	
Description of the Event (seminar/workshop/guest lecture/hands on practice/Industrial Visit)	Workshop	
Address & contact details of Resource Persons/Speakers if any (provide email ID & mobile number of all the speakers)	<b>Organized Department of ECE</b>	
No. of Days event held	<b>Two</b>	
Date(s) and Duration	Date: 10 & 11 Mar 2016	Time: 9:00 am to 4:00 pm
Any amount spent for the event ?	Yes. NFA prepared.	
<b>Details of participants attended the event</b>		
Number of guests from outside university	<b>Organized ECE Department. National Workshop.</b>	
Students & faculty members from the department	<b>150</b>	
Students & faculty members from Faculty of Engineering (other depts.)	<b>Nil</b>	
Total Participants	<b>150</b>	
Is Attendance list enclosed? If no, specify the reason	<b>ECE department Students and Delegates registered for the event.</b>	

Prepared by



Approved by

**Department of Electronics and  
Communication**

**Two days Workshop on  
Electrotronics  
(10—11 March, 2017)**

**Registration Form**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Address: \_\_\_\_\_

Mob: \_\_\_\_\_

Email: \_\_\_\_\_

Accommodation required: Yes/No \_\_\_\_\_

Date and time of arrival/Departure: \_\_\_\_\_

Participation in Poster Presentation :  
YES  NO

**Payment Mode**

1. Demand Draft
2. Spot payment
3. Through IEEE-Explara

Place: \_\_\_\_\_  
Date: \_\_\_\_\_ Signature \_\_\_\_\_

**Demand Draft/Cheque in favor of "Finance Officer,  
Christ University" payable at Bangalore should be  
sent to:-**

Associate Dean  
Faculty of Engineering, Christ University  
Kanminike, Kumbalagodu (PO),  
Bangalore-560 074.

Amount: \_\_\_\_\_ DD No: \_\_\_\_\_

Bank: \_\_\_\_\_ Date: \_\_\_\_\_

Explara Link: <https://in.explara.com/e/a-two-day-workshop-on-electrotronics>

**Registration Fee**

**Rs 500/- (Five Hundred Only) for P.G., U.G  
students and Research Scholars**

**Rs 1000/- (One Thousand Only) for faculty**

**and research scholars and others.**

**\*Soft copy of the poster.**

**On or before the deadline: 08-March-2017.**

**Christ University**

Christ University was born out of the educational vision of St Kuriakose Elias Chavara, an educationalist and social reformer of the nineteenth century in South India. He founded the first Catholic indigenous congregation, Carmelites of Mary Immaculate (CMI), in 1831 which administers Christ University. Established in 1969 as Christ College, it undertook path breaking initiatives in Indian higher education with the introduction of innovative and modern curricula, insistence on academic discipline, imparting of Holistic Education and adoption of global higher education practices with the support of creative and dedicated staff. The University Grants Commission (UGC) of India conferred Autonomy to Christ College in 2004 and identified it as an Institution with Potential for Excellence in 2006. In 2008 under Section 3 of the UGC Act, 1956, the Ministry of Human Resource Development of the Government of India, declared the institution a Deemed to be University, in the name and style of Christ University. One of the first institutions in India to be accredited in 1998 by the NAAC, and subsequently in 2004 and 2016, Christ University has the top grade 'A' in the 4-point scale.

The multi-disciplinary University which focuses on teaching research and service, offers Bachelors to Doctoral programmes in humanities, social sciences, science, commerce, management, engineering, education and law to over 18000 students. The campus is a living example for the harmonious multiculturalism with students from all the states of India and from around 60 different countries. Christ University publishes six peer-reviewed research journals and has published more than 300 books in Kannada and English. A promoter of sports, music and literary activities, it is a nurturing ground for creative excellence.

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**Ph.D. (in various specialization areas of faculty expertise as mentioned above).**

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**Faculty of Engineering  
Department of  
Electronics and Communication  
Engineering  
In Association with  
IEEE Student Branch,  
Christ University and  
IEEE Bangalore Section  
Organizes**

**Two Days Workshop  
on  
Electrotronics  
March 10, 11 - 2017**



## On Workshop

Bioengineering and biomedical engineering are two fields of study that overlap and form a science-based discipline focusing on elements of biology and engineering.

Two days Workshop on Electrobionics aims at giving the participants an insight into the various biological and physiological elements in our human body and the electronics related to the measurement, analysis and control of these physiological parameters. The programme will be concentrating on Bio Signal Processing where in ECG, EEG and EMG data recording, its analysis and interpretations and how to check whether these parameters or signals are in the nominal range or pattern. The programme will also put some light into the various medical equipment used to monitor various physiological parameters like ECG, EMG and EEG recording/monitoring devices. Various imaging techniques used in conjunction with medical field will be explored.

### IEEE Poster Presentation Competition

The IEEE-SB of Faculty of Engineering, Christ University in association with APS & PES Chapters is organizing a Technical Poster Presentation Competition during the workshop. The participants of the workshop can present their posters without any additional fees.

Template of the poster attached as separate file (A3 size)

### Theme for poster presentation

Embedded Systems and VLSI  
Antenna & Wireless Networks  
RF and Microwave

Signal Processing  
Image Processing  
VLSI  
Microprocessors  
Microcontrollers  
FPGA  
ASIC  
Biomedical Electronics  
Bioinformatics  
IoT in medical application

## Invited Speakers

### Dr. P Satish Chandra

*Ex-Director and Ex-Vice Chancellor,  
NIMHANS.*

**Topic: *Advancements in Neuroscience***

### Dr. Shyam Vasudeva Rao

*President & CTO, Forus Health(P) Ltd*

**Topic: *Biomedical Instrumentation***

### Mr. R.S. Hiremath

*President & CEO, Flexitron*

**Topic: *Sensors for Tele-medicine***

### Dr. Shibu Pillai

*Senior Consultant, Neuro Surgeon, Mazumdar  
Shaw Building, Narayana Health*

**Topic: *The magic of technology in Medicine: A  
Neurosurgeon's perspective.***

### Dr. Hema Nair

*Senior Consultant, Anesthesia and Critical  
Care, Narayana Institute of Cardiac Science*

**Topic: *Life Support Devices***

### Dr. Nanda Kumar B.S

*Associate Professor Epidemiologist, MS Ramiah  
Medical College, Bangalore*

**Topic: *Approaches to Research in Biomedical  
Engineering: Dimensions & Directions.***

### Dr. Venkatesh D

*Professor, Physiologist, MS Ramiah Medical  
College, Bangalore*

**Topic: *The challenges in processing varieties  
of biological signals***

### Dr. K.N. Maruthy

*Professor, Department of Physiology, Narayana  
Medical College and Hospital, Nellore*

**Topic: *ABC of Biosciences.***

*Member of the National Academy of Sciences*

*Member of the Indian Academy of Sciences*

**Vice Chair, IEEE Bangalore Section**  
*Scientist, ISRO Satellite Center, Bangalore*

## Chief Patron:

Dr (Fr) Thomas C Mathew  
Vice Chancellor,  
Christ University, Bangalore

## Patron:

Fr. Benny Thomas  
Director, Faculty of Engineering.

Fr. Antony Puthuserry  
Campus Coordinator, Faculty of Engineering.

## Convener:

Dr. Iven Jose  
Associate Dean, Faculty of Engineering.

## Organizing Chair:

Prof. Inbanila K  
HOD, Department of E.C.E, Faculty of Engineering

## Faculty Cordinator:

Prof. Delson T. R. (+91-7760327703)

Prof. Tony Aby Varkey (+91-9633499713)

Prof. Vivek R (+91-9944449411)

## Faculty Advisor, IEEE Poster Presentation

Dr. Suganthi S (+91-8861256865)

Email : [nciet2k15@gmail.com](mailto:nciet2k15@gmail.com).

## Venue

Faculty of Engineering, Christ University  
Kengeri Campus, Mysore road,  
Kanminike, Kumbalagodu (P.O.),  
Bangalore-560 074, Karnataka, India.  
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The Department offers the following degrees:

B.Tech. (Electronics and Communication Engineering)

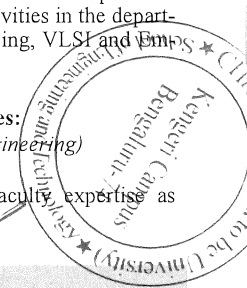
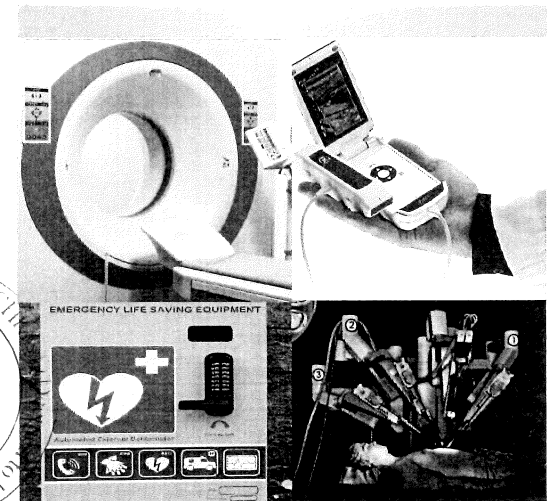
M. Tech. (Communication Systems)

Ph.D. (in various specialization areas of faculty expertise as mentioned above).



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*Template of the poster attached as separate file (A3 size)*

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Embedded Systems and VLSI  
Antenna & Wireless Networks  
RF and Microwave  
Communication Systems & Signal Processing  
Control Systems & Optimization  
Precision Agriculture and Climate monitoring  
Implantable Electronics  
Bioinformatics  
IoT in medical application

## Invited Speakers

### Dr. P Satish Chandra

*Ex-Director and Ex-Vice Chancellor,  
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**Topic: Advancements in Neuroscience**

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*President & CTO, Forus Health(P) Ltd*

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*Senior Consultant, Neuro Surgeon, Mazumdar  
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*Senior Consultant, Anesthesia and Critical  
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*Professor, Department of Physiology, Narayana  
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**Topic: ABC of Biosciences.**

## IEEE Vaedictory Address

### Mr. Puneet Kumar Misra

**Vice Chair, IEEE Bangalore Section**

*Scientist, ISRO Satellite Center, Bangalore*

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Prof. Tony Aby Varkey (+91-9633499713)

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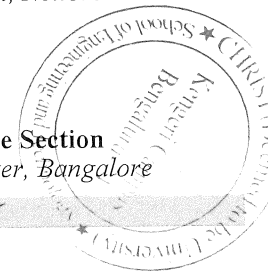
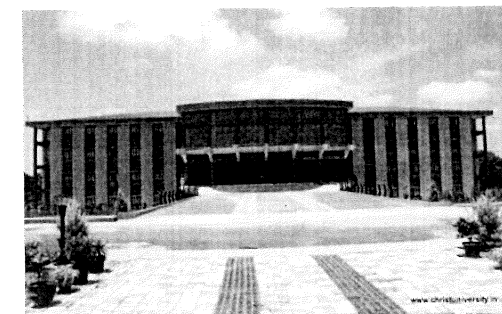
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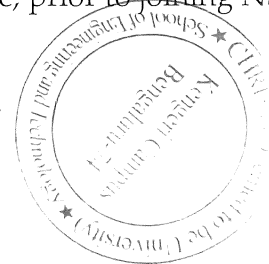
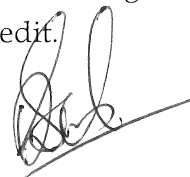
## About the speaker

Name, Qualification: SHIBU PILLAI, M.B.B.S.,M.Ch (Neurosurgery), Fellowship in Pediatric Neurosurgery, Fellowship in Neurotrauma

Designation: Senior Consultant Neurosurgeon. Specialist in Pediatric and Functional Neurosurgery



BIOGRAPHY: Dr. Shibu Pillai received his basic medical training at the Kottayam Medical College. He completed his neurosurgical training at the prestigious National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore, where he was the Gold medalist and the best outgoing student in 2000. He has received additional fellowship training in Pediatric Neurosurgery at the British Columbia's Children's Hospital in Vancouver, Canada and in Neurotrauma at the Baylor College of Medicine, Houston, Texas. He has also been trained in Gamma Knife Radiosurgery at the University of Pittsburgh, USA, and at the Sheffield Gamma Knife Centre, UK. He worked as Associate Professor at NIMHANS, Bangalore, prior to joining Narayana Health in 2011. He has many international and national research publications to his credit.



SPECIAL INTEREST: Pediatric Neurosurgery, Epilepsy Surgery, Functional Neurosurgery for movement disorders like Parkinson's disease and spasticity, Radiosurgery and Acoustic schwannoma surgery.

*Title of the Talk: The magic of technology in Medicine: A Neurosurgeon's perspective.*

**About the talk:**

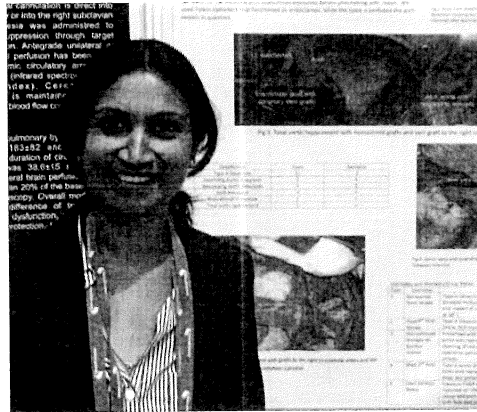
*This talk will describe how technology has come to play a vital role in the management of patients with neurosurgical problems. We will discuss the role of technological advances in the diagnosis of patients with brain and spinal cord problems. Medical technology has transformed the neurosurgical operation theatre and has made operations on the brain safer. Equipment which are used routinely in the neurosurgical operating room will be described. Developments in rehabilitation technology has made recovery from neurological problems more realistic. The role of technology in furthering these developments will be highlighted.*

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the bottom.

**Hema Nair**

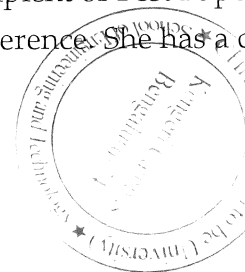
Senior Consultant

Narayana Health City, Bangalore



**Dr.Hema Nair** is trained in cardiac anesthesia at The Sree Chitra Tirunna Institute for Medical Sciences and Technology (SCTIMST), Trivandrum. She has work experience in UK from Royal Hospitals, Belfast and Sheffield Teaching hospitals for 2 years and joined Narayana Health City in 2004. Her area of Expertise is in Management and TEE assessment of pediatric valve repair surgeries, ECLS and ECMO management with percutaneous access, Anesthesia for aortic reconstructive surgery, Management of CTEPH patients and PTE, Application of Human Factors and Quality control in Operating Room procedures.

She has published in 4 national and international journals and was a recipient of Best Paper award given by the Royal College of Physicians and Surgeons Glasgow at the Patient First International Conference. She has a chapter published on the title Non-

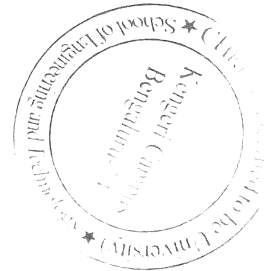


technical skills in operating room staff in the year book of Anesthesia 6th Ed, Published by Indian College of Anesthesiologists. 2016. She is also on the editorial board for Annals of Cardiac Anesthesia

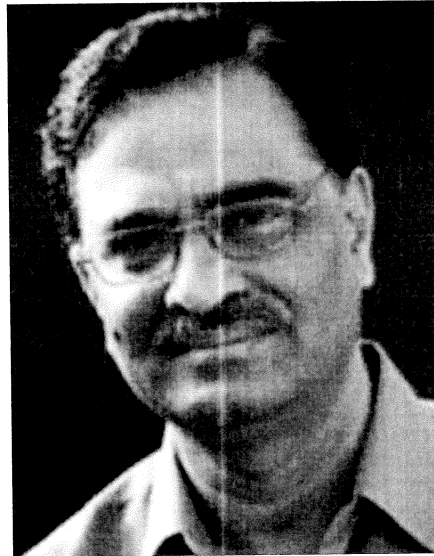
*Title of the Talk: Mechanical Life Support Devices*

**About the talk:**

*As diseases get more challenging, treatment options become more advanced in an attempt to aid healing and extend life. In this endeavor to beat the disease and protect the failing organs, sometimes medicines or surgery alone is not enough, and we have to resort to machines, or assist devices to take over or replace the functions of the body. These machines try to emulate the functions of the organs that they try to help or replace and needs to be very versatile and intuitive. A lot of them have electronic circuitry and microprocessors that help them achieve this goal. Although the finer electronic workings of these equipment is beyond the scope of this talk and also a little beyond my understanding, we are more concerned about its functions and the application to aid the workings of the human body. I will be attempting to explain to you, in common parlance the workings of 4 such machines we use in health care. These are, heart-lung machine or cardio-pulmonary bypass (CPB), extra corporeal membrane oxygenator (ECMO), mechanical ventilators and Dialysis machines.*



Dr. Shyam Vasudeva Rao  
CEO,  
Renalyx



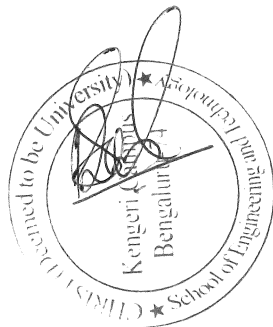
Dr. Shyam holds a doctorate in Real Time Embedded Systems, specialising in Parallel Computer Architecture from Indian Institute of Science (gold Medal) & has been with CG Smith, Ericsson, Tata Consultancy Services and as Director of Technology at Philips. He was instrumental in devising one of the first hardware based antivirus solution in 90s.

A handwritten signature in black ink, appearing to be 'Shyam' followed by a stylized surname.

In his illustrious career Dr. Shyam has established university relationships for joint research programs to work on wireless technology and medical electronics with IISc, IIT Mumbai, IIT Kharagpur, IIT Guwahati, Maastricht University & Alborg University. While at Philips he has established the innovation framework for Consumer Electronics and Medical Systems division. He exponentially grew the patent portfolio of both the above divisions and established working relationships with best known academic and research institutions. He currently holds the posts of President & CTO at Forus Health (P) Ltd, Director at MYMO Wireless Technology (P) Ltd at SID – IISc, Bangalore and Technical Director at Maastricht University Medical Center in Netherlands. He is also in the Academic Council of Engineering colleges such as PESIT Bangalore, SJCE Mysore, ATMA Mysore, Adarsha Institute of Technology, T John Institute, East West Engineering, Nandi Institute of technology. He is the board of studies of Visweswariah Technological University, BMS Engineering College, MSRIT Bangalore, Manipal University to name a few. His innovation 3nethra, a all in one eye screening device at Forus has won several Loral's like DST Locked Martin Gold medal, Perimal Award, Sankalp Award, CNBC TV18 Award, Samsung Innovation Quotient Award, NASCOM Innovation Award and Anjani Mashelkar Inclusive Innovation Award for 2011. Has filed more than 20 international patents, published around 35 papers in international conferences and journals.

*Title of the Talk: NYF*

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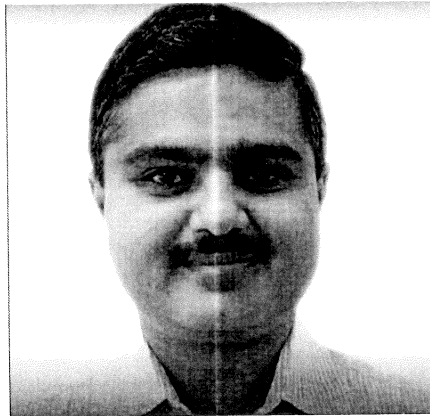


Dr B S Nanda Kumar

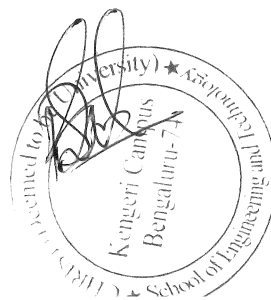
MD, DNB, PGDHHM, MAMS

Head- Research & IPR, Division of Research and Patents,

Associate Professor, Dept of Community Medicine, M S Ramaiah Medical College, Bangalore-560054



Dr B S Nanda Kumar is recipient of Gold medal in 2001 during his M.B.B.S. He also holds Post Graduate Diploma in Health and Hospital Management- IGNOU (2006), M.D. Community Medicine from M S Ramaiah Medical College (State Second Rank, RGUHS), DNB (Community Medicine- Exam @ PGI Chandigarh) 2008, National Board of Examinations, MAMS- Member of Academy of Medical Sciences of National Academy of Medical Sciences. 2013.

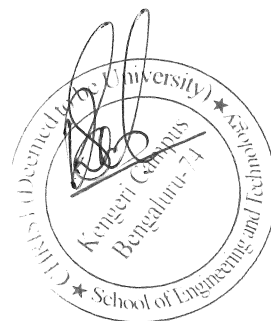


After MBBS, he worked as technical analyst for medical evidence at **Health Informatics** Group (HIG), subsidiary unit of London School of Hygiene and Tropical Medicine at St John's Medical College till 2002. Subsequently finished the MD, DNB and PGDHHM degrees as mentioned above. **Presently working as Head- Research & IPR, Division of Research and Patents and Associate professor in the Department of Community Medicine (Public Health).**

*Title of the Talk: Approaches to research in Biomedical Engineering: Dimensions & Directions.*

*About the talk:*

*The talk would focus on one of the possible frameworks, presented as a high-level ontology, deconstructing Biomedical engineering (BME) into six dimensions derived from engineering and healthcare disciplines – the Technology, Cost, Skill, Adaptation, Setting and Care. Each dimension is articulated as a taxonomy of its constituent elements. Thus, the framework encapsulates the combinatorial complexity of BME and can be used to describe its 2160 potential components in natural English. The framework can help envision BME systematically, systemically, and symmetrically in contrast to the often simplified, selective, and skewed approaches. It can be scaled and extended as BME evolves by adding dimensions, and extending/refining the taxonomies. The framework would help in assessing the emerging solutions in the area of biomedical engineering as well as prioritize the infinite options for product development and research based on the identified specific health needs of our populations.*

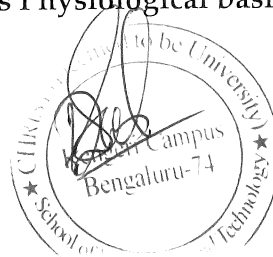


Dr. VENKATESH. D.

Professor, Department of Physiology,  
Director of Medical Education  
M.S. Ramaiah Medical College,



1. Basics of Anatomy, Physiology and Microbiology for GNM students
2. Basics of Medical Physiology for Nursing students
3. Basics of Medical Physiology for Dental and Physiotherapy
4. Text book of Medical Physiology for Medical students
5. Section Editor for 13<sup>th</sup> Edition of Best and Taylor's Physiological basis of Medical Practice.



1) Dr. VENKATESH. D is recipient of Prof. Puthuraya National Best Teacher award for the year 2011 by Association of Physiologists and Pharmacologists of India. Awarded two year **International fellowship** by Foundation for Advancement of International Medical Education and Research (FAIMER) in the year 2007 at **Philadelphia, USA** for Innovation in Medical Education. **He is nominated as a reviewer for MedEdPORTAL** by American Association of Medical Colleges, USA .He was also awarded **M.L. Gupta Award by** Association of Physiologists and Pharmacologists of India in 2016 for substantial contribution in the field of Medical Education.

**He has served as** served as Inspector for Medical Council of India (MCI).He has Published/presented more than 100 papers at National and international levels.He is the member of editorial board of the journals Indian journal of Physiology and Pharmacology, Indian journal of Experimental Biology,Journal of Natural Remedies,Biomedicine,National journal of Basic Medical Sciences,Al Ameen Journal of Medical Sciences ,International Journal of Physiology

*Title of the Talk: The challenges in processing varieties of biological signals*

*About the talk:*

*Electrical activity is recorded from the heart, muscles, brain, and eye by using surface electrodes. Potentials evoked by suitable stimulation can be recorded from auditory pathway, brainstem, and somatosensory regions. There is a possibility that electrical activity of one tissue can interfere with the signals produced from other tissues. Secondly, disturbance in power supply to the recording device can get incorporated in the recordings obtained from the tissue as noise. The major challenges in recording the potentials from the tissues are the inherent variations in the pattern, electrical interference, modifying effect of volume conductor, sensitivity of the recording device and wired systems used for recording which can change the environment of patient. There is need to address these challenges to comprehensively understand functioning of human body.*



Mr. R.S.Hiremath  
CEO

Flexitron



A handwritten signature in black ink, appearing to be 'R.S. Hiremath', written in a cursive style with a horizontal line underneath.

R.S.Hiremath is from North Karnataka India, he had his basic education in Sainik School Bijapur and then qualified as a Mechanical engineer from Gulbarga University, Karnataka. He served at the KSCST, Indian Institute of Science Bangalore for 3 years. He started a Social enterprise in the name of FLEXITRON a 36 year old 'social enterprise' dedicated to design, manufacture and development of frugal innovations in Alternative energy, Aids and appliances for the physically challenged, Senior citizens and products for use by the poor at the bottom of the human pyramid. FLEXITRON has a manufacturing base in India and China. Over 600 + innovations in varied fields like Solar Photovoltaics, Wind Energy, LED lighting, Empowerment equipment for the rural population, textiles, Khadi, Ceramics, Disability aids, Silk , Artisan equipment have been developed. Most innovations are 'frugal' in nature serving the purpose of empowerment and social change with low cost interventions.

270 + products are commercialized and over 18 million people use the products. There are 18 pending patents filed as of date.

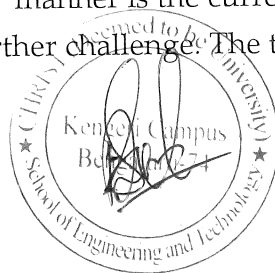
He has established 5 state of the art 'Innovation centers' in various institutions to nurture idea of Frugal Innovations and using them for the society. He has been conferred with '4' National Awards by the Government of India in the field of innovation.

Use of the highest technology to impact economically and physically challenged persons has been the key driving force in all his innovation activities.

*Title of the Talk: Sensors for Tele-medicine, Trends, needs and gaps*

*About the talk:*

Telemedicine is today a highly advanced field with several pioneering development. Man and machine can get connected through various types of sensors of covering many parameters of the body. Converting outputs of human body condition, situation and parameters efficiently and more so in a 'non-invasive' manner is the current challenge. After the input data is converted transmitting them in real time or elapsed time is a further challenge. The talk covers above topics.



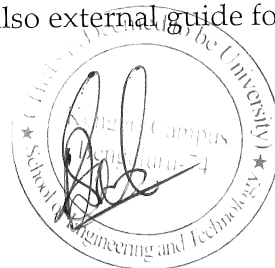
**Dr. Maruthy K N**

Professor, Department of Physiology  
Narayana Medical College, Nellore, Andhra Pradesh, India



Many Publications

**Dr. Maruthy K N** received the "Best research paper award from St.John's Medical College in the year 2000 in Post graduate category" for the title "The development and validation of a digital Peak respiratory pressure monitor and its characteristics in healthy subjects", received 2nd place for oral presentation for the Title "Development of a simple portable temperature threshold measuring device" in State level Physiology conference held in Coimbatore in the year 2010. He maintained Research medical equipment in the Division of Nutrition (SJMC) during the period 1994-2010 - IRMS, GCMS, HPLC, Auto analyzers, V Max, Indirect Calorimeter etc. Developed customized instruments for research and PG student projects since 16 years and also external guide for major projects for Bio-medical Engineering students since 13 years for UG and PG category





*Title of the Talk: Acquiring Bio-Signals in the present era of Digital Technology*

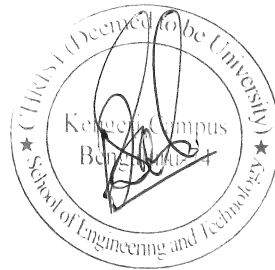
*About the talk:*

Bio-signal acquisition is a rapidly expanding field with a wide range of applications. These range from the construction of artificial limbs and aids for the disabled to the development of sophisticated medical monitoring systems that can operate in a noninvasive manner to give real time views of the workings of the human body. There are a number of medical systems in common use. These include ultrasound, electrocardiography and plethysmography are widely used for many purposes.

*Title of the Talk: Bio-material of today, tomorrow and their influence on Human Life*

*About the talk:*

Biomaterial is a branch of science which amalgamates elements of Medicine, Biology, Chemistry, Tissue engineering and Material science. It's a provocative field of science which has an exponential growth historically, with many companies moving forward to invest huge funds. Most of the Bio-materials were accidentally identified in the past but now it's the time we choose and select the material for appropriate application after studying the material properties –which we call as Science of Bio-materials Biomaterial is intended to interface with biological system either for treatment, or replace any tissue/organ or function of the body. The material should be Bio- compatible with expected response in a specific application.



# REPORT

*Faculty of Engineering*

*Department of Electronics and Communication Engineering*

*In Association with*

*IEEE Student Branch, Christ University*

*and*

*IEEE Bangalore Section*

*Organizes*

*Two Days Workshop*

*on*

*Electrobionics*

*March 10, 11 - 2017*



**Chief Patron:**

Dr (Fr) Thomas C Mathew  
Vice Chancellor,  
Christ University, Bangalore

**Patron:**

Fr. Benny Thomas  
Director, Faculty of Engineering.

Fr. Antony Puthuserry  
Campus Coordinator, Faculty of Engineering.

**Convener:**

Dr. Iven Jose  
Associate Dean, Faculty of Engineering.

**Organizing Chair:**

Prof. Inbanila K  
HOD, Department of E.C.E, Faculty of Engineering

**Faculty Cordinator:**

Prof. Delson T. R. (+91-7760327703)  
Prof. Tony Aby Varkey (+91-9633499713)  
Prof. Vivek R (+91-9944449411)

**Faculty Advisor, IEEE Poster Presentation**

Dr. Suganthi S (+91-8861256865)

**Email :** nciet2k15@gmail.com.

**Venue**

Faculty of Engineering, Christ University  
Kengeri Campus, Mysore road,  
Kanminike, Kumbalagodu (P.O.),  
Bangalore-560 074, Karnataka, India.



## Christ University

Christ University was born out of the educational vision of St Kuriakose Elias Chavara, an educationalist and social reformer of the nineteenth century in South India. He founded the first Catholic indigenous congregation, Carmelites of Mary Immaculate (CMI), in 1831 which administers Christ University.

Established in 1969 as Christ College, it undertook path breaking initiatives in Indian higher education with the introduction of innovative and modern curricula, insistence on academic discipline, imparting of Holistic Education and adoption of global higher education practices with the support of creative and dedicated staff. The University Grants Commission (UGC) of India conferred Autonomy to Christ College in 2004 and identified it as an Institution with Potential for Excellence in 2006. In 2008 under Section 3 of the UGC Act, 1956, the Ministry of Human Resource Development of the Government of India, declared the institution a Deemed to be University, in the name and style of Christ University. One of the first institutions in India to be accredited in 1998 by the NAAC, and subsequently in 2004 and 2016, Christ University has the top grade 'A' in the 4-point scale.

The multi-disciplinary University which focuses on teaching research and service, offers Bachelors to Doctoral programmes in humanities, social sciences, science, commerce, management, engineering, education and law to over 18000 students. The campus is a living example for the harmonious multiculturalism with students from all the states of India and from around 60 different countries. Christ University publishes six peer-reviewed research journals and has published more than 300 books in Kannada and English. A promoter of sports, music and literary activities, it is a nurturing ground for creative excellence.

### About the Department

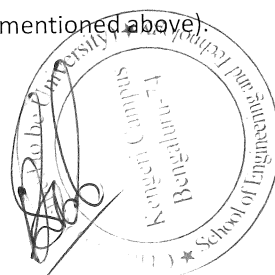
The department was started in 2009 as the Department of Electronics and Communication Engineering under the Faculty of Engineering. The primary objective of the department is to impart quality education, training and research at the undergraduate, postgraduate and doctoral levels in frontline areas of electronics and its derived Engineering and Technology. The Electronics and Communication Engineering (ECE) Department has a rich tradition in research and teaching. The research interests of the faculty members of the department encompass the wide area of applied and fundamental aspects of Electronics and Communication Engineering. Collaboration in between the research groups of the department and with other departments is also a practice. The broad areas of research and academic activities in the department are: Communication and Signal Processing, VLSI and Embedded System Design, RF and Microwave.

The Department offers the following degrees:

B.Tech. (Electronics and Communication Engineering)

M. Tech. (Communication Systems)

Ph.D. (in various specialization areas of faculty expertise as mentioned above)



## About Workshop

Bioengineering and biomedical engineering are two fields of study that overlap and form a science-based discipline focusing on elements of biology and engineering.

Two days Workshop on Electrobionics aims at giving the participants an insight into the various biological and physiological elements in our human body and the electronics related to the measurement, analysis and control of these physiological parameters. The programme will be concentrating on Bio Signal Processing where in ECG, EEG and EMG data recording, its analysis and interpretations and how to check whether these parameters or signals are in the nominal range or pattern. The programme will also put some light into the various medical equipment used to monitor various physiological parameters like ECG, EMG and EEG recording/monitoring devices. Various imaging techniques used in conjunction with medical field will be explored.



## Invited Speakers

Attached file separately for detail of speakers (Forwarded from Inbanila Mam)

## IEEE Poster Presentation Competition

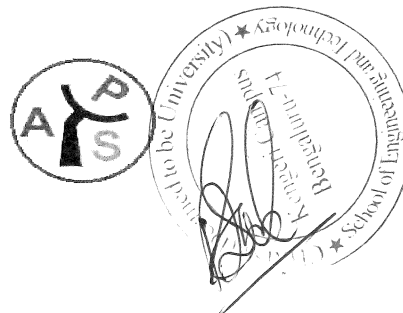
The IEEE-SB of Faculty of Engineering, Christ University in association with APS & PES Chapters is organizing a Technical Poster Presentation Competition during the workshop. The participants of the workshop can present their posters without any additional fees.

Template of the poster attached (A3 size)

## Theme for poster presentation

- Embedded Systems and VLSI
- Antenna & Wireless Networks
- RF and Microwave
- Communication Systems & Signal Processing
- Control Systems & Optimization
- Precision Agriculture and Climate monitoring
- Implantable Electronics
- Bioinformatics
- IoT in medical application

IEEE Logos :

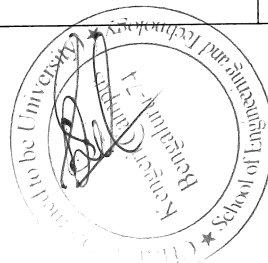


**Workshop- Electrobonics**

**Date: 10-11 March 2017**

**Attendance List**

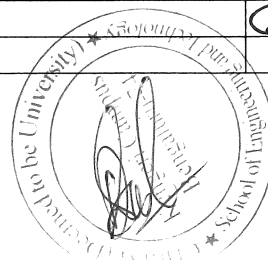
SL No	Register Number	Name	SIGNATURE
1	1317124	BETSY REEBA MATHEW	<i>Betsy</i>
2	1317141	KEERTHANA M.J.	<i>Keerthana</i>
3	1317149	FRAJINU I	<i>Frajinu</i>
4	1317201	ABRAHAM JAIN	<i>Abraham</i>
5	1317205	JOHNSON JAMES	<i>Johnson</i>
6	1317206	RAJAT S	<i>Rajat</i>
7	1317207	SANDEEP REDDY GOPIREDDY	<i>Sandeep</i>
8	1317208	CYNTHIA MARY THOMAS	<i>Cynthia</i>
9	1317209	HIMA JOE	<i>Hima</i>
10	1317211	VENNAPUSA VENKATA KRISHNA CHAITANYA REDDY	<i>Venkata</i>
11	1317212	JINS A JOSEPH	<i>Jins</i>
12	1317213	MUDUNURI PRASHANTH VARMA	<i>Prashanth</i>
13	1317214	ALBIN A.SEBASTIAN	<i>Albin</i>
14	1317215	SHUBHRO JYOTI HORE	<i>Shubhro</i>
15	1317216	UDAY C	<i>Uday</i>
16	1317218	KEVIN BASTIAN	<i>Kevin</i>
17	1317219	S.OMNATH REDDY	<i>Omnanth</i>
18	1317221	RHEA MARIAM DANIEL	<i>Rhea</i>
19	1317222	RIO ELVIS COOPER	<i>Rio</i>
20	1317223	NATASHA VALSAN	<i>Natasha</i>
21	1317225	RAM KUMAR S	<i>Ram</i>
22	1317226	SIBIL SANY	<i>Sibil</i>
23	1317227	SHILPA JOSHY	<i>Shilpa</i>
24	1317229	CHARUTH TOM	<i>Charuth</i>
25	1317230	BIROL DAS	<i>Birol</i>
26	1317231	NALLURI ADITYA	<i>Nalluri</i>
27	1317232	HEMANTH AKASH S D	<i>Hemant</i>
28	1317233	URVIL VAID	<i>Urvil</i>
29	1317234	JOPHINS K CYRIAC	<i>Jophins</i>
30	1317236	PROTIK DAS	<i>Protik</i>
31	1317237	SAKSHI JHA	<i>Sakshi</i>
32	1317239	DIVJOTH KAUR HORA	<i>Divjoth</i>
33	1317241	MINTO THOMAS	<i>Minto</i>
34	1317243	SHUBHAM PANDEY	<i>Shubham</i>
35	1317244	PRAGYA SURIN	<i>Pragya</i>
36	1317245	SHOURYA SHARMA	<i>Shourya</i>
37	1317248	ARSHINE KINGSLEY	<i>Arshine</i>



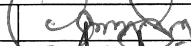
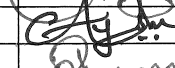
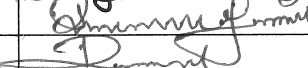

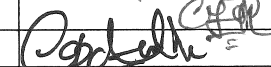




38	1317249	HAREESH REDDY R	<i>Hareesh</i>
39	1317318	TINKER WAZEEDA TABASUM	<i>Wazeeda</i>
40	1317507	ANSE MATHACHAN	<i>Anse</i>
41	1358104	MATHAIIOUS VALLIKAPPEN	
42	1358202	NEIL TOM	<i>Neil</i>
43	1359202	K CATHEREN S JOSEPH	
44	1417189	AMAN BANSAL	<i>Aman</i>
45	1417201	ABEY CHERIAN	<i>Abey</i>
46	1417202	DASI AKHIL MADHAV	
47	1417206	ROHIT THOMAS MATHEW	<i>Rohit</i>
48	1417208	SANDEEP MICHEAL DOMINGO	<i>Sandeep</i>
49	1417209	SYED AHAD ALI	<i>Ahad</i>
50	1417213	ANGLET C J	<i>Anglet</i>
51	1417214	BATCHU MALAVIKA	<i>Batchu</i>
52	1417217	POOJA MERCLIN	<i>Pooja</i>
53	1417219	THUSHARA .G	<i>Thushara</i>
54	1417223	CATHERINE JAYARAJ	<i>Catherine</i>
55	1417225	B M KRITHIKA	<i>Krithika</i>
56	1417226	MUDDHALURU SANDHYA	<i>Muddhaluru</i>
57	1417227	R ROGER ALLISTER	<i>R Roger</i>
58	1417228	RATHNA RANADHEER REDDY	<i>Rathna</i>
59	1417229	RATNESH SINGH	<i>Ratnesh</i>
60	1417230	POOJA B	<i>Pooja</i>
61	1417231	DELIN JAMES	<i>Delin</i>
62	1417232	CHETNA SHARMA	<i>Chetna</i>
63	1417233	MANEESH M	<i>Maneesh</i>
64	1417234	AMAN SHARMA	<i>Aman</i>
65	1417235	RACHEL SUNDARAM	<i>Rachel</i>
66	1417236	CHINTHALA SATHWIK REDDY	<i>Chintala</i>
67	1417237	ANJANA SUNDAR	<i>Anjana</i>
68	1417238	ANUSHIKA S	<i>Anushika</i>
69	1417239	MELITA MONICA MENEZES	<i>Melita</i>
70	1417240	VIMAL JOSE MATHEW	
71	1417241	DEEPU .M	<i>Deepu</i>
72	1417242	ABHINANDAN G	<i>Abhinandan</i>
73	1417243	HARSHA B M	<i>Harsha</i>
74	1417244	ASHWIN DIXON	<i>Ashwin</i>
75	1417246	VANESSA GODSON	<i>Vanessa</i>
76	1417248	DIVYABHARATHI O	<i>Divyabhathi</i>
77	1417249	ABHISHEK PANDEY	<i>Abhishek</i>
78	1417251	JOLY FARHANA ISHAKBHAI	<i>Joly</i>
79	1417252	KULWANT SINGH	<i>Kulwant</i>
80	1417254	PUJARI SOWMYA	
81	1417255	RAJAT NIDHI	<i>Rajat</i>
82	1417257	SALONI AGGARWAL	<i>Saloni</i>



83	1417259	VISHAL SINGH	<i>Vishal Singh</i>
84	1417308	MINNU MARIA JOSEPH	<i>Minnu Maria Joseph</i>
85	1417587	TONY SEBASTIAN	<i>Tony Sebastian</i>
86	1458201	AVRIL MENDEZ	<i>Avril Mendez</i>
87	1458202	SAPHRONIA MARIA THOMAS	<i>Saphronia Maria Thomas</i>
88	1458203	DEEPIKA S	<i>Deepika S</i>
89	1459201	SRISTY HAZRA	<i>Sristy Hazra</i>
90	1560132	SREESHMA	<i>Sreeshma</i>
91	1560323	FUNGAMALI PONDAMALI DIEUDONNE	<i>F.P.1</i>
92	1560365	DEEPANNITA DUTTA	<i>Deepannita Dutta</i>
93	1560391	MOURYA GUPTA VAKACHARLA	<i>Mourya Gupta Vakacharla</i>
94	1560443	SHREY H SHAH	<i>Shrey H Shah</i>
95	1560503	BHUPALAM MOHITH SUBBARAYUDU	<i>Bhupalam Mohith Subbarayudu</i>
96	1560505	CHILUKURI VISHAL REDDY	<i>Chilukuri Vishal Reddy</i>
97	1560509	JOSEPH KURIAN	<i>Joseph Kurian</i>
98	1560513	SANJITH M GOWDA	<i>Sanjith M Gowda</i>
99	1560515	VAIBHAV SINGH	<i>Vaibhav Singh</i>
100	1560517	ANJU SOMAN T	<i>Anju Soman T</i>
101	1560519	KALAVAGUNTA SAI CHARITHA	<i>Kalavagunta Sai Charitha</i>
102	1560521	RAMYA. K.	<i>Ramya K.</i>
103	1560522	RUTH RUFINA S	<i>Ruth Rufina S</i>
104	1560527	G SAI ARYA DIKSHITH VISHWAJITH	<i>G Sai Arya Dikshith Vishwajith</i>
105	1560528	DILIP R	<i>Dilip R</i>
106	1560529	K V ADVAITHA	<i>K V Advaita</i>
107	1560530	JAYASUDHA R	<i>Jayasudha R</i>
108	1560532	SONA.M	<i>Sona M</i>
109	1560534	JASHWANTHI V	<i>Jashwanthi V</i>
110	1560535	PUSHPALATHA B V	<i>Pushpalatha B V</i>
111	1560537	DHIRAJ KUMAR MAHATO	<i>Dhiraj Kumar Mahato</i>
112	1560538	ANUSHA V REDDY	<i>Anusha V Reddy</i>
113	1560539	RAJESH KUMAR K R	<i>Rajesh Kumar K R</i>
114	1560542	ERIC JOHN JOSE	<i>Eric John Jose</i>
115	1560543	RIORDAN MELCHIOR AROZA	<i>Riordan Melchior Aroza</i>
116	1560544	BHARATH KUMAR N G	<i>Bharath Kumar N G</i>
117	1560547	ANUSH H P	<i>Anush H P</i>
118	1560550	SHREYA JAYACHANDRAN NAIR	<i>Shreya Jayachandran Nair</i>
119	1560551	PASUPULETI KAILASH RAM	<i>Pasupuleti Kailash Ram</i>
120	1560552	REENA D	<i>Reena D</i>
121	1560553	ASHLY MATHEW P	<i>Ashly Mathew P</i>
123	1560557	ADITHYA NAGA SAI TIRUMANISETTI	<i>Adithya Naga Sai Tirumaniseti</i>
124	1560559	SAYANTAN SAHA	<i>Sayantana Saha</i>
125	1560560	SHAIVI SAHAY	<i>Shaivi Sahay</i>
126	1560563	ABHIJIT CHAKRABORTY	<i>Abhijit Chakraborty</i>
12.7	1560564	ADITYA KUMAR	<i>Aditya Kumar</i>

128	1560702	CHRISTY STANISLAUS	
129	1560710	AYESHA	
130	1560711	RAVEENA JOKIM CRASTHA	
131	1560944	DANIEL ANUSH V	
132	1561104	CHEEMALAPATI JAYADEEP REDDY	
133	1561319	C P ADARSH	