



**KINGS**  
COLLEGE OF ENGINEERING



# R & D Newsbulletin

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Annual Newsbulletin  
(June 2016 - May 2017)



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**Resource Sharing – Research & Development Lab**

S. No	Institution/ Dept.	Beneficiaries	Batch Size	Title	Guide
1	Ponnaiyah Ramajayam College of Engineering & Technology / ECE	V.G.Thanmayie	1	Model based wavefront correction in Terrestrial Free Space Optical communication	Mr. T.Pasupathi AP/ ECE
2	KCE / ECE	G. Bargavi , M. Elamathi, K. Jasmine & P. Shanmuga Priya	4	Fibre optic solar concentrator for indoor illumination using MPPT	Dr. J. Arputha Vijaya Selvi Prof/ECE
3	KCE / ECE	G.Kavya	1	Wavefront sensorless Adaptive Optics for Free Space Optical Communication using SPGD algorithm	Dr. J. Arputha Vijaya Selvi Prof/ECE
4	KCE / ECE	K. Ranjith Kumar , A. Shiva Shankar, R. Velmurugan and M. Madhan Kumar	4	Analysis of different modulation scheme suitable for transmission of audio signals using UWOC	Mr. A. Herald AP/ECE
5	KCE/ECE	S. Noorjahan, K. Padmapriya, R. Salma Begum & S B. Sangeetha	4	Design and performance analysis of gravity assisted power (GAP) generating system for harvesting electrical energy	Mr. T.Pasupathi AP/ ECE

**Publications through Resource Sharing**

- Thanmayie V.G, A.Amudha, B.Kaviya, J.Arputha Vijaya Selvi, Reduction of phase Aberrations in the Terrestrial Free Space Optical communication with a Novel Approach, Advances in Natural and Applied Sciences, vol. 11, No.7, pp. 97-103.
- J. Arputha Vijaya Selvi, J. Niranjana Samuel, G. Bargavi, M. Elamathi, K. Jasmine, P. Shanmuga Priya, Internal Lighting by Solar Collectors and Optical Fibers – A Review, International Conference on Microwave and Optical Communication, Alagappa Chettiar College of Engineering and Technology, Karaikudi.
- T.Pasupathi, S.Noorejahan, K.Padma priya, R.Salma begum, S.B. Sangeetha, Design and Implementation of Gravity/Magnet Assisted Power (GAP) Generating System for Harvesting Electrical Energy, International Conference on Engineering, Energy & Environment (ICEEE 2017), TRP Engineering College, Tiruchirappalli.
- J. Niranjana Samuel, T. Pasupathi et.al, “Energy Efficient Lighting using Optical Fiber for Commercial Buildings”, International Conference on Emerging Trends in Electrical, Electronics and Communication Systems, Anna University (BIT Campus), Tiruchirappalli.
- A.Herald, A. Akshaya, A. Benita, R. Hemalatha, Wireless Optical Communication System using Media Converter for Ethernet Applications, International Conference on

Engineering, Energy & Environment (ICEEE 2017), TRP Engineering College, Tiruchirappalli.

### Grants sanctioned

- S.Noorjahan, K.Padma priya, R.Salma Begum, S.B. Sangeetha, IV ECE students under the guidance of Mr.T. Pasupathi, AP/ECE received a grant-in-aid of Rs. 5,000/- from Foundation for Advancement of Education and Research, Bangalore towards the students project titled **“Design and implementation of gravity /magnet assisted power (GMAP) system for harvesting electrical energy”**.

### Proposals submitted

- Department of ECE submitted a proposal to SERB, New Delhi, on **“Mitigation of low-order tip-tilt atmospheric turbulent effects using Wavefront Sensorless Adaptive Optics in Terrestrial Free Space Optical Communication”**, for a grant-in-aid of Rs.30,00,000/-.

### Publications

Department	Journals	Conferences
Civil Engineering	3	13
Computer Science and Engineering	4	31
Electronics & Communication Engineering	6	25
Electrical & Electronics Engineering	3	6
Mechanical Engineering	4	2
Science & Humanities	4	5

### Faculty completed Ph.D.

Name / Dept
Dr.T. Vigneswari, Information Technology
Dr. S.M. Uma, Computer Science and Engineering

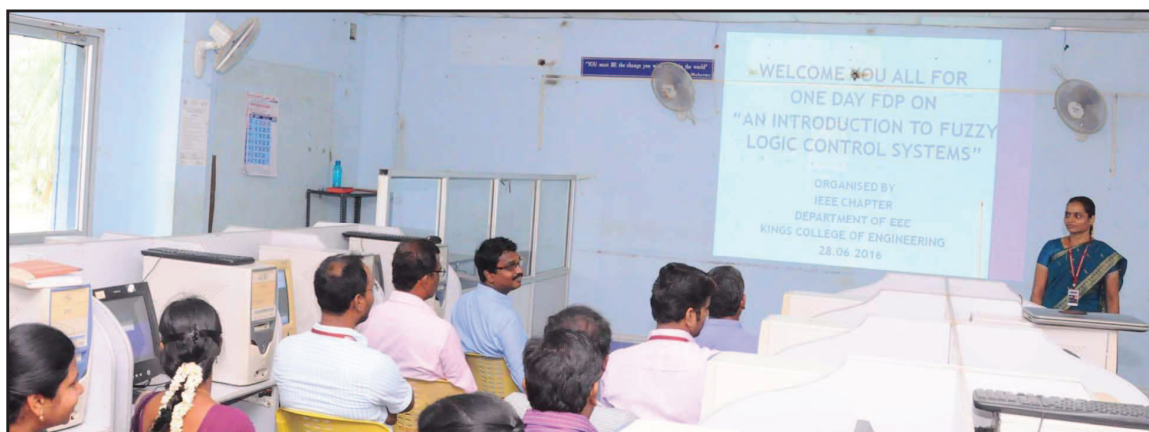
### Faculty doing Ph.D.

Name / Dept	Area of Research
Mr.D.Sivakumar, Computer Science & Engg.,	Data Mining
Mr.J.Jegan, Computer Science and Engg.,	Wireless Networks
Mrs. K.Abhirami, Computer Science & Engg.,	Data Mining
Mrs.P.Nalayini, Computer Science & Engg.,	Wireless Networks
Mrs.T.Shanthi, Electronics & Communication Engg.,	Wireless Networks
Mr. A. Herald, Electronics & Communication Engg.,	Optical Communications
Mr. T. Pasupathi, Electronics & Communication Engg.,	Free Space Optics
Mr. P. Raja Pirian, Electronics & Communication Engg.,	IoT
Mrs.N.Hemavathi, Electrical & Electronics Engg.,	Wireless Sensor Networks
Mr.A.Albert Martin Ruban, Electrical & Electronics Engg.,	Wireless Sensor Networks
Mr.P.Narasimman, Electrical & Electronics Engg.,	Power Electronics
Mr. R. Sundaramoorthy, Electrical & Electronics Engg.,	Power Converters
Mr.P.P.Shantharaman, Mechanical Engg.,	Composite Material
Mr.M.Babu, Mechanical Engg.,	Solar Energy Engineering
Mr. R.Sankar, Mechanical Engineering	Surface Coating
Mrs.G.Ramya Arokiamary, Mathematics	Stochastic Process
Mr.G. Shankara Kalidoss, Mathematics	Simultaneous Pell's Equation

Mr. G. Jeyakrishnan, Mathematics	Number Theory
Mrs. S. Geetha, Mathematics	Fuzzy Graphs
Mrs. S. Revathy, Mathematics	Fuzzy Graphs
Mr. R. Suresh, Mathematics	Fuzzy Sets
Mrs. N. Latha, Mathematics	Mathematical Models in Genetics
Mr. K. Sudhakar, Training & Placement	Finance
Mr. B. Barankumar, Training & Placement	Marketing
Mr. B. Suresh Babu, Training & Placement	Marketing

### Programmes Organized

IEEE student branch organized a Faculty Development Programme on “An Introduction to Fuzzy Logic Control Systems” on 28<sup>th</sup> June 2016. Dr.S.Sivakumar, HOD/EEE (Member IEEE), formally inaugurated the programme. Mr. P. Narasimman, AP/EEE and Ms. N. Hemavathi, AP/EEE, Kings College of Engineering, handled the sessions. In their lecture, fundamentals of fuzzy logic, GUI tool box design were briefed. Hands-on- session with case studies on temperature control, speed control of DC motor were demonstrated. The session was more interactive. Faculty of EEE, ECE and IEEE Members got benefitted.



Ms. N. Hemavathi, AP/EEE, Kings College of Engineering delivering lecture

IEEE student branch organized a Guest Lecture on “**Electromagnetic Interference and Compatibility**” on 15<sup>th</sup> July 2016. Dr. J. Arputha Vijaya Selvi, IEEE Branch Counselor & HOD/ECE welcomed and introduced the resource person. **Dr. P.S. Kannan**, Visiting Faculty/ECE, delivered lecture. In his lecture, he briefed basic theory of electromagnetic interference, History of Electromagnetic Interference and Coupling mechanism of Electromagnetic Interference. The session was more interactive and students got benefitted.

Guest Lecture on “**How to do Projects**” was organized on 06<sup>th</sup> August, 2016. Mr. E. Venugopal, AP/EEE, Sri Eshwar College of Engineering, Coimbatore and alumni of Kings College of Engineering delivered lecture. In his lecture, he shared his ideas on choosing projects relevant to the society and projects that lead to product development and patent.



Mr. E. Venugopal, AP/EEE, Sri Eshwar College of Engineering, Coimbatore delivering lecture

A Guest Lecture on “**High Frequency Analysis of Transistors & FET Amplifiers**” was organized on 25<sup>th</sup> August 2016. **Dr. P.S. Kannan**, Visiting Faculty/ECE, delivered lecture. In his lecture, he briefed about transistor at high frequencies, Hybrid  $\pi$  CE transconductance model and design of high frequency amplifier. The session was more interactive and students got benefitted.

A video demonstration & simulation on “**Microwave Essentials**” was delivered to IV year ECE by **Mr. R. Sathyaraj**, AP/ECE on 06<sup>th</sup> August, 2016. In his demonstration, he explained the operations of Gunn Diode, Reflex klystron and Travelling Wave Tube. All the students got benefitted.



Mr. R. Sathyaraj, AP/ECE delivering lecture

An Awareness Talk on “**Neural Networks & Education in Abroad**” was delivered to IV year ECE on 16<sup>th</sup> August 2016. **Mrs. S.R. Revathy**, Research Scholar, Gandhigram Rural Institute, Gandhigram, delivered lecture. In her lecture, she briefed basic concepts of neural network. The session was more interactive and students got benefitted.



Mrs. S.R. Revathy, Research Scholar, Gandhigram Rural Institute, Gandhigram delivering lecture

IEEE student branch organized a Mini Project Expo on 17<sup>th</sup> September 2016. Project Expo was inaugurated by **Dr. S.P. Subramaniyan**, Deputy Controller of Patents & Designs and Head of Office, Patent Office, Chennai and **Dr. P. Muthuchidambaranathan**, Associate Professor, National Institute of Technology, Tiruchirappalli. They visited the stalls where the projects were displayed and appreciated the efforts made by the students. The projects were evaluated by **Mr. P. Rajapirian**, AP/ECE and **Mr. T. Pasupathi**, AP/ECE. 18 batches exhibited their projects related to Electronics and Communication Engineering. Dr. J. Arputha Vijaya Selvi, SBC, appreciated the efforts made by the event coordinator.



Dr. S.P. Subramaniyan, Deputy Controller of Patents & Designs and Head of Office, Patent Office, Chennai reviewing the projects displayed EXPO

IEEE Student Branch, Kings College of Engineering organized an invited talk on 28<sup>th</sup> December, 2016. **Dr. R. Vimalathithan, Professor/ECE, Karpagam College of Engineering, Coimbatore**, delivered a talk on *“Evolution of Smart Cities using M2M Communication”*. In his address he enthralled the audience by throwing light on overview of M2M communication, Opportunities, Growing Research and Commercial Interest, Applications, Technical Challenges, M2M Standards & European projects. He explored the possibilities of using artificial limbs, their operation and working of

associated circuitry. He also briefed about the concept of smart city which offers its inhabitants maximal life quality with minimal consumption of resources, based on an intelligent interconnection of infrastructure (transport, energy, communication etc.) on different hierarchic levels (building, quarters, city).



Dr. R. Vimalathithan, Professor/ECE, Karpagam College of Engineering, Coimbatore delivering lecture

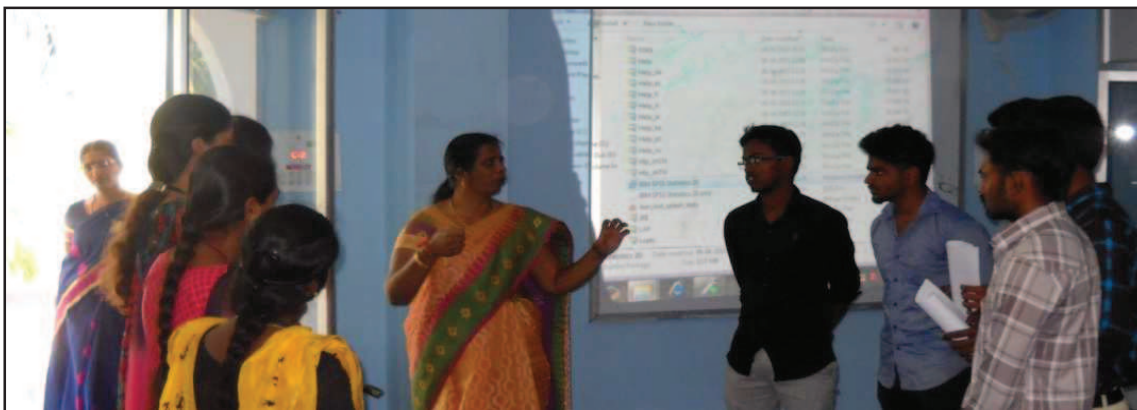
**IEEE Student Branch and R&D section**, organized a one day workshop on “**Soft Computing**” on 28<sup>th</sup> January, 2017 technically sponsored by **Computational Intelligence Society, Madras Section**. **Dr. S. Sivakumar**, Vice Principal, Kings College of Engineering delivered a lecture on “**Genetic Algorithm and its Applications**”. **Dr. R. Amirtharajan**, delivered a lecture on “**Soft Computing Techniques for Information Security**”. **Mrs. N. Hemavathi**, delivered a lecture on “**Fuzzy Logic & its Applications**”. 16 delegates from other institutions and 29 internal participants attended the workshop.



Dr. S. Sivakumar, Vice Principal, Kings College of Engineering issuing certificates to the participants

**IEEE Student Branch and R & D section** organized a one day workshop on “**Research Methodology and Statistical Tools for Research**” on 25<sup>th</sup> February, 2017. **Dr. A. Vasumathi**, Professor & Programme Coordinator-MBA, VIT Business School, VIT University, Vellore, delivered inaugural address.





Dr. A. Vasumathi, Professor & Programme Coordinator-MBA, VIT Business School, VIT University, Vellore

**Dr. V. R. Sarma Dhulipala**, Assistant Professor, AU BIT Campus, Trichy delivered a lecture on **“Research in Modern Era”**. 14 delegates from other institutions and 13 internal participants attended the workshop.



Dr. V. R. Sarma Dhulipala, Assistant Professor, AU BIT Campus, Trichy delivering lecture

**IEEE Student Branch** and **Dept. of Electronics & Communication Engineering** organized a guest lecture on **“Data Converters”** on 07<sup>th</sup> March, 2017. **Dr. J. Arputha Vijaya Selvi**, IEEE SBC & Dean (R & D) welcomed the gathering. **Mrs. R. Sowmyalakshmi**, AP/ECE, Anna University, BIT campus, Thiruchirapalli, delivered lecture. In her lecture, she presented on overview of Data converters, ADC architectures, DAC architectures, comparator calibration techniques and precision techniques. **Mr.P.Rajapirian**, AP/ECE delivered the vote of thanks.



Mrs. R. Sowmyalakshmi, Assistant Professor/ECE, AU, BIT campus, Thiruchirapalli, delivering lecture

**CCEEM2K'17** Tech Expo was jointly organized by Research & Development Section and IEEE Student Branch (STB16621) on 31<sup>st</sup> March, 2017. Students of various streams of engineering from institutions all over the state came out with 30 working models and exhibited them. A team of experts reviewed the projects based on Innovation/ Novelty, Working model/ Simulation result and Relevance to the field / social needs.



Left: View of a project displayed at the expo Right: Dr. J. Arputha Vijaya Selvi, Dean (R&D) issuing certificates to the winners

Based on the experts review report, cash prizes were awarded.

Award	Institution
Best Domain Award – Civil	Kings College of Engineering
Best Domain Award – CSE	Mepco Schlenk Engineering College, Sivakasi
Best Domain Award – ECE	P.R. Engineering College, Thanjavur
Best Domain Award – EEE	Kings College of Engineering
Best Domain Award – MECH	Kings College of Engineering
II Prize	Dept. of CSE, Mepco Schlenk Engg. College, Sivakasi
I Prize	Dept of Civil engineering, Kings College of Engineering

All of us do not have equal talent. But, all of us have an equal opportunity to develop our talents. – Dr. A.P.J. Abdul Kalam



### Guest Lectures

IEEE SB organized:

Lecture on “How to do Projects” by Mr. E. Venugopal, AP/EEE, Sri Eshwar College of Engineering, Coimbatore on 6<sup>th</sup> August, 2016.

Lecture on “High Frequency Analysis of Transistors & FET Amplifiers” by Dr. P.S. Kannan, Visiting Faculty/ECE on 25<sup>th</sup> August 2016.,



### Awareness Talk

Mrs. S.R. Revathy, Research Scholar, Gandhigram Rural Institute, Gandhigram conducted an Awareness Talk on “Neural Networks & Education in Abroad” on 16<sup>th</sup> August 2016 for the benefit of SB members. A video demonstration & simulation on “Microwave Essentials” was conducted by Mr. R. Sathyaraj, AP/ECE on 6<sup>th</sup> August, 2016.

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### Invited Talk

IEEE SB organized an invited talk on “Evolution of Smart Cities using M2M Communication” by Dr. R.Vimalathithan, Prof/ECE, Karpagam College of Engineering, Coimbatore on 28<sup>th</sup> Dec 2016.

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### CCEEM2K'17 Tech Expo



IEEE SB and R&D unit organized CCEEM2K'17 Tech Expo on 31<sup>st</sup> Mar 2017. The expo was inaugurated by Dr. J. Arputha Vijaya Selvi. 30 working models were exhibited in the expo. The Best Domain Award – Civil was won by Kings College of Engineering for the project ‘Behaviour of Expanded Polystyrene Brick’, Best Domain Award – CSE and second prize was won by Mepco Schlenk Engineering College, Sivakasi for the project ‘Efficient Scientific Workflow Scheduling in Multitenant Cloud Environment’, Best Domain Award – ECE was won by P.R. Engineering College, Thanjavur, for the project ‘Base Transceiver Station with Auto Power Generation using Renewable Energy Sources’, Best Domain Award – EEE was won by Kings College of Engineering for the project ‘Homemade Gyromill Power Generation (HGPG)’, Best Domain Award – MECH was won by Kings College of Engineering for the project ‘Extraction of Hydrogen from Water from Carbon Graphite Method and used as a Fuel’. The first prize was won by the team from Civil Engineering of Kings College of Engineering for the project ‘Experimental Investigation of Influence of Marble Powder on Concrete as Partial Replacement of Cement’.

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