

Currents

Issue. 1 July 2016-June 2017



About Department

Inside This Issue

- 7 EEE Dept. faculty
- 9 Events Organized
- 13 Faculty News
- 17 Student News
- 18 Technical Articles

The Department of Electrical and Electronics Engineering has been playing a vital role in producing professionals of highest caliber ever since it was established in 1998. The department runs one under-graduate programme and one post-graduate programme (M.Tech. - Electrical Power Systems) to cater to the ever challenging needs of technical excellence in all areas of Electrical Engineering such as Power systems, Control Systems & Power Electronics. The department conducts regular seminars, guest lectures, workshops and technical symposiums on latest technologies.

The Department has obtained UGC-Autonomous Status in the Year 2014 and have been running programmes (B. Tech. & M. Tech.) successfully. The College Academic Council and Board of Studies of the department strive to provide quality education with the most advanced curriculum to make the students industry ready and excel in the contemporary business world.

The B. Tech. Programme under Department of Electrical and Electronics Engineering was accredited by the National Board of Accreditation (NBA) of All India Council for Technical Education (AICTE).

VISION AND MISSION OF THE DEPARTMENT

Vision

To become a Department recognized for its ability to provide quality education to the students and make them excel in the domain of electrical & electronics engineering, with research proficiency and ethics, to meet the challenges of society.

Mission

M1: To impart quality education and advancements in program of studies for producing engineers with scientific temperament and moral values in the field of electrical & electronics engineering.

M2: To create and develop research culture with deep sense of commitment, so as to enable the industries to adopt the research outputs.

M3: To enhance the technical dexterity, so as to find the suitable solutions in their respective domain, for welfare of the society.

Quality Policy

Madanapalle Institute of Technology & Science is committed to bring out and nurture the talents and skills of youth in the fields of Engineering and Management to cater to the challenging needs of society and industry by

- ❖ Contributing to the academic standards and overall knowledge development of the students
- ❖ Providing excellent infrastructure and conducive learning environment.
- ❖ Enhancing the competence of faculty and promoting R&D Programs
- ❖ Collaborating with institutions and industries.
- ❖ Ensuring continual improvement of Quality Management System.

Message from Correspondent

Technology places a vital role in shaping a student's career. EEE Department provides excellent opportunities for the students to discover their potentials. If students are able to go out of college with flying colors, it's no exaggeration to say that it's only because of the supportive environment that is provided in the college. Currents provides a glimpse of the activities and achievements in EEE Department. Students must make use of the opportunities provided to them in order to excel in their career. They must aim high. Students should consider technology as a treasure box and make proper use of it to achieve their goals. It gives me an immense pleasure looking at the efforts put by the EEE department, in coming up with creative ideas to design a souvenir every year.



Dr. N. Vijaya Bhaskar Choudary,
M.Com, Ph.D.

Secretary & Correspondent

Message from Chairman

The Electrical and Electronics Engineering Department has produced many phenomenal students who are at very good positions. Students graduated from our college, come back here and support the institution to the best of their abilities. I advise the students to have a clear vision about what they want to become and plan accordingly at the earliest possible stage. They must gain practical knowledge rather than mere bookish knowledge to reach greater heights in their career. They must convert their ideas into reality and must not refrain from trying out new things. I hope the Department continues to achieve success in every aspect and publish the achievements in this incredible Currents every year.

In the present sophisticated world of opportunities, at the best of times in the best of context, we are there to strengthen such programs that empowers work ambience and gets perfect platforms to those who want to grow and be in forefront of the industry.

I wish you all the very best.



Sri. N. Krishna Kumar,
M.S (U.S.A), Chairman

Message from Principal

The technological information dissemination to public is the key factor in bringing concerned people/Department together. The Department of Electrical and Electronics Engineering contributing best of its efforts in development of Newsletter by publishing Currents. The documentation of different activities and bringing it to relevant technical community is the excellent towards service of society. These activities will help in making the science and technology much stronger towards knowledge bank. I am congratulating all the EEE department staff and students on this occasion. I wish good luck and extend my warm patronage to all of those who have contributed their best to bring out the Currents in good shape.



Dr. C. Yuvaraj, Ph.D.

Principal

Message from HOD

I am happy that Dept. of EEE is bringing out a Currents (Newsletter). Currents will definitely help to showcase the activities that are happening in the department. It also helps in building up teamwork which is very much needed today in the world of competition. It provides a platform for exposing the merits and academic achievements of the faculty. This enhances the documentation culture of the department. This would definitely create an impact in the minds of readers, by way of providing larger visibility and dimension to the campus. I hope that this culture of releasing Newsletter continue forever.



Dr. Asha Rani M.A., Ph.D.

Head of the Department

Department of EEE

EEE Department Faculty

S.No	Name of the Faculty	Designation	Qualification
1	Dr. Ilampoornan M. K.	Professor	Ph.D. (IIT, Madras)
2	Dr. M. Vaigundamoorthi	Professor	Ph.D. (Anna University)
3	Dr. C. Kamal Basha	Professor	Ph.D. (JNTUA, Anantapur)
4	Dr. Rajendra Prasad Narne	Assoc. Professor	Ph.D. (NIT, Rourkela)
5	Dr. Suprava Chakraborty	Assoc. Professor	Ph.D. (IIT (ISM), Dhanbad)
6	Dr. K. Arul Kumar	Assoc. Professor	Ph.D. (VIT)
7	Dr. M. Chakkarapani	Assoc. Professor	Ph.D. (NIT, Tiruchirappalli)
8	Dr. Lakshmanan S. A.	Sr. Asst. Professor & Head	Ph.D.(IIT, Mandi)
9	Dr. Hira Singh Sachdev	Sr. Asst. Professor	Ph.D. (NIT, Jamshedpur)
10	Dr. Shubhashish Bhakta	Sr. Asst. Professor	Ph.D. (IIT (ISM), Dhanbad)
11	Dr. A. V. Pavan Kumar	Sr. Asst. Professor	Ph.D. (BITS-Pilani, Hyderabad)
12	Dr. Sumit Verma	Sr. Asst. Professor	Ph.D. (IIT (ISM), Dhanbad)
13	Dr. Subhasish Mahapatra	Sr. Asst. Professor	Ph.D. (NIT, Rourkela)
14	Dr. M. Vijay	Sr. Asst. Professor	Ph.D. (NIT, Surathkal)
15	Dr. Pratap Ranjan Mohanty	Sr. Asst. Professor	Ph.D. (NIT, Rourkela)
16	Dr. Parth Sarathi Panigrahy	Sr. Asst. Professor	Ph.D. (IEST, Shibpur)
17	Dr. Arijit Bardhan Roy	Sr. Asst. Professor	Ph.D. (IEST, Shibpur)
18	Dr. Soumya Ranjan Mahapatro	Sr. Asst. Professor	Ph.D. (NIT, Rourkela)
19	Dr. Aurobinda Bag	Sr. Asst. Professor	Ph.D. (NIT, Rourkela)

20	Dr. Amresh Kumar Singh	Sr. Asst. Professor	Ph.D. (IIT, Delhi)
21	Dr. Santosh Kumar Singh	Sr. Asst. Professor	Ph.D. (NIT, Rourkela)
22	Dr. Pradosh Ranjan Sahoo	Sr. Asst. Professor	Ph.D. (NIT, Rourkela)
23	Dr. Narendrababu A	Sr. Asst. Professor	Ph.D. (NIT, Rourkela)
24	Dr. Sudarshan swain	Sr. Asst. Professor	Ph.D. (NIT, Rourkela)
25	Mr. Arvind Kumar Prajapati	Asst. Professor	M.Tech., (Ph.D.) (IIT, Roorkee)
26	Mr. Vishwanatha Siddhartha	Asst. Professor	M.Tech., (Ph.D.) (IIT, Roorkee)
28	Ms. Pikaso Pal	Asst. Professor	M.Tech., (Ph.D.) (IITISM, Dhanbad)
29	Mr. Venkatachalam KM	Asst. Professor	M.Tech., (Ph.D.) (Anna University, Chennai)
31	Mr. M. Lokanatha	Asst. Professor	M.Tech.
32	Mr. B. Vijaya Kumar	Asst. Professor	M.Tech.
33	Mr. Sateesh Devanga Yerra	Asst. Professor	M.Tech.
34	Mr. P. Balamurali Krishna	Asst. Professor	M.Tech., (Ph.D.) (KIIT, Bhubaneswar)

Events Organized

Workshop

Dept. of EEE organized one day workshop on “**Electrical Safety and Maintenance**” on 03rd September 2016.



Mr. C. Manohar Reddy, ADE, A.P. DISCOM and **Mr. K. Suryanarayana Rao**, S.E., (Rtd.), A.P. TRANSCO were the resource persons of the workshop. Participants were from various sectors like AP state Govt. Electricity Board Electric operators, Electricians from private companies, lab Technicians/ Instructor from Engineering colleges, Diploma colleges & ITI Institutions.

The Morning session of the workshop commenced with opening remarks of the Dr. C. Kamal Basha, Head of Dept.EEE. He explained the theme of the workshop. Dr. C. Yuvaraj, Principal discussed importance of electrical safety.It was followed by the introducing of resource persons by Mr. K.V. Sateesh Babu, Asst. Professor, Dept. of EEE.

Mr. K. Suryanarayana Rao, S.E., (Rtd.), A.P. TRANSCO resource person discussed mainly on Electrical safety. He shared many relevant case studies and also gave valuable information regarding safety precautions like human safety, machines safety and first aids. In the afternoon session **Mr. C. Manohar Reddy**, ADE, A.P. DISCOM resource person discussed Electrical Maintenance. He also discussed the topics under maintenance of electrical machines, transformer oil testing, earthing and circuit breaker followed by interaction session between the participants and resource persons.

Dept. of EEE organized a guest lecture on " **Power Electronics – An Introduction & Applications**" on 16th July 2016.



A One-Day Guest Lecture on "Power Electronics – An Introduction & Applications" was organized by the department of Electrical and Electronics Engineering, on 16th July 2016 in coordination with the Industry Institute Interactive Cell (IIIC) and sponsored by TEQIP-II. **Mr. Ramesh Darla**, Sr. Engineer Power Supplies, Cisco systems, Bangalore, was the resource person for this guest lecture. The session started with opening remarks by Dr. C Kamal Basha, followed by brief introduction of resource person by Mr. G. Ravi Prakash.

The lecture started at 10:15 AM on "Power electronics – An introduction & Applications" to the III year B. Tech EEE A and B sections students in the MBA Seminar Hall. During the session, the resource person covered the following topics

Need of Power Electronics. Different types of Power Electronic Devices. Power conversion and its need Different application of power electronics like residential and home appliances, utility system applications, space technology applications, transportation applications. Future scope of Power Electronics. Power Electronics product development organization list. Roles and responsibilities of an electrical engineer in industry.

Dept. of EEE organized a guest lecture on "**Engineering of Electrical Systems for Power Generation & Consumption facilities**" on 31st January 2017.



A 'One-Day Guest Lecture on Engineering of Electrical Systems for Power Generation & Consumption facilities' was organized by the Department of Electrical and Electronics Engineering, on 31st January 2017 in coordination with the Industry Institute Interactive Cell (IIIC) and sponsored by TEQIP-II. **Mr G V BANAKAR**, Former General Manager [Commercial, Constn Mgmt., Matls Mgmt.], Projects Engg & Systems Division, BHEL, Hyderabad, was the resource person for this guest lecture. The session started with opening remarks by Dr C Kamal Basha, followed by a brief introduction of resource person by Mr B Chandra sekhar.

The lecture started at 10:00 AM on "Engineering of Electrical Systems for Power Generation & Consumption facilities" to the III Year B. Tech. EEE A and B sections and IV Year EEE students in the EEE Seminar Hall. During the session, the resource person covered the following topics:

Power system requirements and Power Generation stations. Types of Systems Related to Power Generation, Transmission and Distribution. Sizing criteria of equipment and systems, Safety. Future scope for power systems and Provisions for future expansions.

Dept. of EEE organized a guest lecture on " **Electrical Engineering Projects**" on 4th and 5th of October, 2016.



A two-day guest lecture on 'Electrical Engineering Projects' was conducted by the Department of EEE for III B. Tech students on 4th and 5th of October, 2016. Dr. I. Gopinath, Former Scientist, ISRO, was the resource person of this program. The main objective was to create awareness on electrical engineering projects.

During the lecture the following topics were covered:

Thermal Power Generation Plant - Concept and Working Principles. Ultra Capacitors- New Generation Energy Storage Devices and Applications. Crystal Cells-Long Duration Energy Storage Devices and Demonstration of Development of Crystal Cell.

Day 1:(04-10-16)

Dr. I. Gopinath demonstrated on various equipment's in Thermal power plants. He explained different types of energy such as kinetic, potential, electro chemical, electromagnetic etc., with different real time examples; different parameters such as performance, cost effectiveness, reliability and efficiency with respect to generation of electrical energy.

Day 2: (05-10-2016)

He discussed the design of ultra-capacitors and its future scope. He encouraged the students to design a capacitor in real time situation as a part of their mini/major project. He also discussed the crystal cells acting as Energy storage devices. He demonstrated various real time examples and videos and motivated the students to do projects in various topics of Electrical Engineering.

Faculty News

Welcome: New Faculty

Mr Abhishek Ghosh Roy, Asst. Professor - Department of Electrical and Electronics Engineering Reported on 27.04.2018.

Mr Arijit Bardhan Roy, Asst. Professor - Department of Electrical and Electronics Engineering Reported on 02.05.2018.

Dr Hira Singh Sachdev, Sr. Asst. Professor - Department of Electrical and Electronics Engineering Reported on 10.05.2018.

Mr Pradosh Ranjan Sahoo, Asst. Professor - Department of Electrical and Electronics Engineering Reported on 16.05.2018.

Faculty Achievements

Dr. N. Prabakaran, Received the Best Researcher Award from VIT University, Vellore.

Raghu Chandra G, IEEE Best Paper Award, 93% In Electrical Engineering Course by The University of Newcastle, Australia.

Dr. A. V. Pavan Kumar, awarded as a Certificate of Reviewing IEEE Transactions on Sustainable Energy.

Faculty Attended

Sl. No.	Faculty Name	Name of the Activity	Name of the program	From Date	To Date	Organized by	Venue
1.	Dr. Rajendra Prasad Narne	Conference	Large Scale Multi-disciplinary Systems of National Significance: Trends & Challenges (LAMSYS)	24-06-2016	25-06-2016	SDSC SHAR, ISRO, Sriharikota	ISRO, Sriharikota
		Workshop	Induction Motors, Electrical Drives, SIMOCODE & SIMARIS	15-05-2017	20-05-2017	APSSDC - SIEMENS	VVIT, APSSDC COE, Guntur
		Training	MHRD's National Mission for Teachers and Administrators Management Capacity Enhancement Programme	02-02-2017	08-02-2017	IIM, Indore	IIM, Indore
			Learning Mission to Bengaluru	25-10-2016	26-10-2016	Confederation of Indian Industry	Bangalore

2.	Mr. K. Arul Kumar	Conference	2016 IEEE 6th International conference on Power and Energy	28-11-2016	29-11-2019	Nik Rumzi Nik Ldris	Hatten hotel, Melaka, Malaysia
		FDP	Using Blended MOOCS in Management Education	08-07-2016	08-07-2016	Execute Education Programmes	IIM, Bangalore

Faculty Publications

S.No	Faculty Name	Co-Author	Paper/Book title	Publisher
1.	Dr. Rajkamal R	K Narayanan and SP Chinnaraju	Automatic Real Time Observer based Calibration of Surround System	Indian Journal of Science and Technology, Vol.09, Issue 32, 9/1/2016
2.	Dr A. Sudhakar	Gunji Venkateswarlu	Novel step up converter with Multi winding Transformer for fuel cell applications	International Journal of Science and Research (IJSR), ISSN (Online): 2319-7064, Volume 5 Issue 9, September 2016
3.	Dr.Rajendra Prasad Narne	Y.Munindra reddy	Reliability prediction of smart pressure transmitter for use in NPPs	International journal of system assurance Engg&Management, Vol(8/2), 656-662, 1/6/2016
4.	Dr.K.rajangam	DPCBN, .D chinna kullay reddy, Dr C kamal basha	Estimation and Mitigation of Power System Harmonics with Kalman Filter Algorithm	Journal of convergence information technology, 11(5), 122-132
5.	Dr. C. Kamal basha	A.Malleswari	Fuzzy Logic Base Solar and Wind Power Generation System	International Journal of Advanced Technology and Innovative Research, Volume. 08, IssueNo.08, July-2016, Pages: 1600-1606
6.	Dr. C. Kamal basha	S. A. K. Jilani and S. Salma sultana	Power Line Data Transmission Based Remote Control with Status Feedback	International Journal of Advanced Technology and Innovative Research, Volume. 08, IssueNo.08, July-2016, Pages: 1582-1585
7.	Dr. A. Anbarasan	C.Praveen Kumar Reddy	Hybrid Reference Frame Control Of Ac-Dc Converter	International Research Journal of Engineering and Technology (IRJET), Volume: 03 Issue: 09, Sep -2016.
8.	Dr. A. Anbarasan	P. Chaitanya	Reduced-Rating DVR Control with BESS for Voltage Sag, Swell and Harmonic Compensation	International Journal of Science and Research (IJSR), ISSN (Online): 2319-7064,
9.	Dr. A. Anbarasan	S. Sireesha	Analysis of Solar Power Output with Optimum Tilt Angles and MPPT Arrangements	International Journal of Application or Innovation in Engineering & Management (IJAIEM), Volume 5, Issue 8, August 2016

10	Dr. Paduchuri Chandra Babu	SS Dash, Ramazan Bayındır, Ranjan K Behera, and C Subramani	Analysis and experimental investigation for grid-connected 10 kW solar PV system in distribution networks	2016 IEEE International Conference on Renewable Energy Research and Applications (ICRERA), 23 March 2017
11	V. B. Thurai Raaj	S. Allirani	Development of Space Vector Pulse Width Modulation Algorithm for Voltage Source Inverter Using dsPIC Controller 30F4011	International Journal of Pure and Applied Mathematics, Volume 114 No. 9 2017, 257-269, ISSN: 1311-8080 (printed version); ISSN: 1314-3395 (on-line version).
12	S. Khadarvali	K. Suresh Babu	Enhancement of Power System Stability using STATCOM in Multi Area Power Systems	IJSTE - International Journal of Science Technology & Engineering, Volume 3, Issue 02, August 2016
13	K. Vasu	V. Ganesh	Speed Control Analysis of BLDC Motor using Hybrid Controller	Research Topics in Power, Nuclear, Fuel & Energy-25 th -27 th October- 2016, St. Peter Engineering College, Hyberabad
14	Dr. A. Sudhakar		Torque Ripple Analysis in Fuzzy Controller Based Direct Torque Controlled Synchronous Motor	Recent Advances in Power Electronics, power and control systems Engineering-6 th -7 th October 2016
15	Dr. K. Rajangam	M. Ravi Kumar, Dr. C. Kamal Basha and Dr. P. Chandra Babu Naidu	Design of Fuzzy Logic MPPT Controller of a Solar PV System under Weather Changing Conditions	International Control of Engineering Research and Management,2250-0758, Volume 3, Page.110-117, 2016
16	Dr. K. Rajangam	D. Kavitha	Power Quality Enhancement Using Hybrid Filter in Interconnected Grid System	International Journal of Science and Research, 2319-7064, Volume 5, Issue 8, August 2016
17	K. Vasu	M. Dshakanyani	AGC of Two Area Power System by FO-PID Controller Under Deregulated Environment	International Journal of Innovative Research in Science, Engineering and Technology, 2319-8753
18	K. V. Satheesh Babu	D. Hussainaiah and B. Srinivasa Raju	Analysis of Bidirectional LLC Resonant Converter for DC Nano Grids	Imperial Journal of Interdisciplinary Research, ISSN: 2454-1362, Volume 2, Issue 9, 2016
19	M. Kishore	S. Jammel Ahamed and B. Sreenivasa Raju	A Two Phase Interleaved Boost Single Stage PFC Converter Using Flying Capacitor	International Journal of Engineering, Science and Computing, Volume 6, Issue no. 7, Page: 1612
20	M. Lokesh	U. Rosaiah	A New Cascade H-Bridge Inverter Based MultiLevel Statcom for High Power Applications	International Journal of Science and Research,2319-7064, Volume 5, Issue no. 8, Page: 940-945

21	M. Lokesh	D. Tharakeshwar	Design and Development of High Efficiency Thin Solar Cells	International Journal of Advanced Technology and Innovative Research, 2278-7844, Volume 8, Issue no. 10, Pages: 1966-1972
22	M. Lokesh	C. Obul Reddy, Dr. K. Ramesh	A Nature Inspired Optimization Based Fuzzy Logic Controller for Grid Connected Photovoltaic Inverter	International Journal for Science and Advance Research in Technology, 2395-1052, Volume 2, Issue no. 8, Pages: 32-40
23	M. Kishore	Sk. Basha Mohiddin	Cascaded H- Bridge Multilevel PV Inverter with Fuzzy Logic Controller for Grid connected Systems	International Journal of Engineering Research and Management, 2349-2508, Volume 3, Issue no. 7, Pages: 126-132
24	D. Chinna Kullay Reddy	M. Mahesh	Modelling and Control of Hybrid Micro Grid	International Journal of Engineering, Science and Computing, Volume 6, Issue no. 7, Pages: 1882-1886
25	K. V. R. B, Prasad	K. Manoj Kumar	Performance Evolution of Concentric Collector Solar Thermal System Using Different Reflectors	International Journal of Multi-Disciplinary Research Hub, 2349-3122, Volume 3, Issue no. 7, Pages: 06-11
26	K. V. R. B, Prasad	Y. Sateesh Kumar Reddy, Gopika Vinod and N. B. Shrestha	Functional Testing and Performance Assesment of Smart Pressure Transmitters used in NPPs	International Journal of System Assurance Engineering and Management, ISSN: 0975-6809, Volume 3, Issue no. 7
27	G. Ravi Prakash	J Lokesh Kumar	Analysis and Design of PLL Techniques using FO PID Controller Grid under Fault Conditions	International Journal of Engineering, Science and Computing, Volume 6, Issue no. 7, Pages: 2191-2199
28	Dr. K. Arul Kumar	D. Vijayakumar and K. Palanisamy	Investigation of PLL performance for utility connected systems under abnormal grid conditions	PECON 2016 - 2016 IEEE 6th International Conference on Power and Energy, Conference Proceeding
29	Dr. C. Kamal Basha	V. Ganesh, D. Chinna Kullay Reddy and K. Rajangam	FPGA Based Implementation Stator Current Observer for Sensorless Induction Motor Drive	New- Trends in Multi-Disciplinary Research and Practice-2016, Gitam University, Banagalore
30	K. Vasu	V. Ganesh	Load Frequency Control of Multi-Source Realistic Power System with Intelligent Controllers	New- Trends in Multi-Disciplinary Research and Practice-2016, Gitam University, Banagalore

31	D. Chinnakullay Reddy	S. Satya Narayana and V. Ganesh	Control Strategies of a Hybrid Micro Grid for Grid Connected and Island Mode Operation	New- Trends in Multi-Disciplinary Research and Practice-2016, Gitam University, Banagalore
32	A. Anbarasan	C. Kumar	Selection of Suitable FACTS Device for Indian Utility System to Reduce the Losses	Asian Journal of Information Technology, 2016, Volume 15, Issue 4, Pages 791-794
33	K Vasu	C Vijaya Kumar Reddy	Optimal Control of a Distribution System in an Intentional Islanding Mode Operation	International Journal of Application or Innovation in Engineering & Management, ISSN 2319- 4847
34	DR.B.Rama Kumar	S.Niranjan	A Neutral Point Clamped Based Inverter for Three-Phase UPS System Applications	International Journal of Science, Engineering and Technology Research (IJSETR), ISSN: 2278 – 7798, Volume 5, Issue 8, August 2016

Student News

Student Achievements

Sl. No.	Student Name	Paper Title	Date	Journal Name
1.	Y. Munindra reddy	Reliability prediction of smart pressure transmitter for use in NPPs	01-07-2016	International journal of system assurance Engg & Management, Vol(8/2), 656-662, 1/6/2016
2.	M. Ravi Kumar	Design of Fuzzy Logic MPPT Controller of a Solar PV System under Weather Changing Conditions	01-07-2016	International Control of Engineering Research and Management, 2250-0758, Volume 3, Page.110-117, 2016
3.	C. Obul Reddy	A Nature Inspired Optimization Based Fuzzy Logic Controller for Grid Connected Photovoltaic Inverter	01-08-2016	International Journal for Science and Advance Research in Technology, 2395-1052, Volume 2, Issue no. 8, Pages: 32-40
4.	C. Kumar	Selection of Suitable FACTS Device for Indian Utility System to Reduce the Losses	01-07-2016	Asian Journal of Information Technology, 2016, Volume 15, Issue 4, Pages 791-794
5.	C. Vijaya Kumar Reddy	Optimal Control of a Distribution System in an Intentional Islanding Mode Operation	01-07-2016	International Journal of Application or Innovation in Engineering & Management, ISSN 2319- 4847

Technical Articles

Graphene Super capacitors:

super capacitors are attractive sources for clean energy because they quickly charge and discharge and have long cycling lives. But there's one big drawback: low energy density. "Today's super capacitors have only one-tenth the energy density of lithium-ion batteries," pointed out Meilin Liu, a Regents Professor in Georgia Tech's School of Materials Science and Engineering. "For the device to give you the same electrical energy, the device would have to be much bigger."

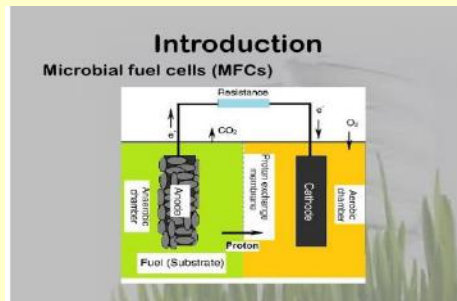


M.CHAITANYA

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MICROBIAL FUEL CELLS

Microbial fuel cell (MFC) is one choice that has received attention as alternative energy in directly generating electricity from organic matters. A microbial cell is a bioreactor that converts chemical energy in the chemical bonds in organic compounds to electrical energy through catalytic reactions of microorganisms under anaerobic conditions.



BASIC COMPONENTS OF MICROBIAL FUEL CELLS:

Anode: Graphite, graphite felt, carbon paper, carbon-cloth, Pt, Pt black, RVC

Cathode: Graphite, graphite felt, carbon paper, carbon-cloth, RVC

Anodic chamber: Glass, polycarbonate, Plexiglas

Cathodic chamber: Glass, polycarbonate, Plexiglas

Electrode catalyst: Pt, Ptblack, MnO₂, Fe³⁺, polyaniline, electron mediator immobilized on anode

Remote sensors: MFCs can run low power sensors that collect data from remote areas. A simple microbial fuel cell consists of a cathode attached to an anode by a metal wire.

By placing the anode in the anaerobic sediment of a river or ocean and placing the cathode in the anaerobic water right above the sediment, a current is generated.

Anaerobic bacteria that naturally grow in the sediment produce the small current that can be used to charge a capacitor to store energy for whenever the sensor needs it.

MFC significantly longer life time than traditional batteries. The sensors thus can be left alone in a remote area for many years without maintenance.

*



K.Rajitha,

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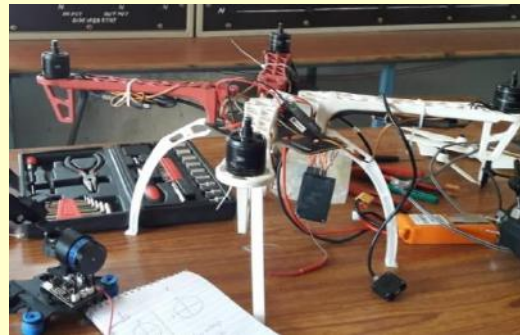
TECHNICAL ARTICLE ON MEDICAL DRONE

Drones are unmanned aerial vehicles. It's a remote controlled robot which can fly autonomously through software controlled flight plans in their embedded systems. Based on this application a Medical drone works. Present days, due to the development of urban areas and lack of transportation in rural and hilly areas providing emergency medical facilities have become a major problem.

Medical drones have the potential to transport laboratory samples, pharmaceuticals, vaccines, emergency medical equipment on time. It can reach the destination safely through remote controlling irrespective of obstacles. A Medical Drone save the affected ones by delivering the medical equipment which is independent of manned vehicle.

Drones as Medical transport systems

Researchers from National Health Laboratory service (NHLS) and Denel Dynamics (UAV division) tested a proof of concept unmanned system to transport microbiological samples more efficiently from rural clinics to NHLS centers for rapid HIV testing. The results demonstrated the



ability of Drones to facilitate medical decision making with prompt diagnosis.

In 2014, the Medicines Sans Frontieres (MSF) evaluated a drone based system for delivering laboratory samples to hospitals for Tuberculosis testing. This trial demonstrated that drones could deliver viable laboratory samples in approximately 25% of time it took to deliver the samples by land. Other research has shown that sample integrity from sanitary blood samples compared to drone transported blood samples is similar. The first Government approved drone medical delivery was in United States which involved in a clinic in rural Virginia. Thus, Drones served to expedite the drug delivery process which helped in improving the patient care.



By MEDFLY and team



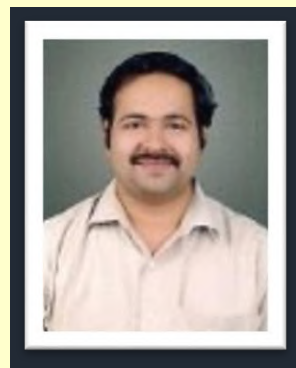
EEE Students got 51 offers in Reputed Companies through Campus Drive 2015-19 Batch.



Faculty Coordinators:



P. Balamurali Krishna,
Asst. Professor



Dr. A. V. Pavan Kumar,
Sr. Asst. Professor