



SHRI VISHNU ENGINEERING COLLEGE FOR WOMEN (AUTONOMOUS)
VISHNUPUR, BHIMAVARAM, WEST GODAVARI DISTRICT, ANDHRA PRADESH-534202

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

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EDITOR'S MESSAGE

It gives me great pleasure to congratulate students, teachers, and the electrical and electronics department staff on the publication of the 11th edition of the newsletter. This edition of the newsletter focuses on the inside activities, i.e., academics, student and faculty achievement, and innovation occurring in the department during the last six months.

ILLUMINARY ACTIVITIES

Under the illuminary association of the EEE department, an energy-saving awareness program is conducted on 17-03-2020 at Z.P.H SCHOOL Gollalakoderu. The main motto to conduct an awareness program is to make 9th and 10th class school students know about effective utilization of Electrical energy, shortage of energy in near future, power generation from Renewable Energy Resources, and the safety precautions to be taken while using electrical power appliances and to make them realize how they are wasting Electricity and finally the steps to conserve Electrical Energy. As a theme of encouragement, competitions were conducted for the students on essay writing which covers wastage of Electrical energy and steps to prevent it, word puzzles on electric gadgets & scientists and their inventions & to make them know about the value of the inventions and electricity.

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STUDENT ACTIVITIES

STUDENT ARTICLES

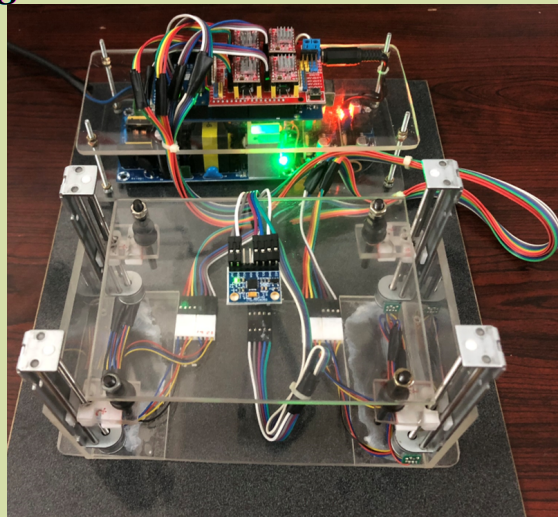
Title: ELECTRICAL DYNAMIC SUSPENSION SYSTEM

Objective: *To avoid additional injuries to the patient while shifting from one place to another place by keeping stretcher movement parallel to the geometrical neutral axis.*

Authors: P. Lakshmi Ramya
K. Guna Sandhya Sri
Ch. Chandrika
P. Kavya
G. Bandhavi

Technical Description:

The dynamic Suspension System in ambulance stretcher can reduce the additional damage to the patient and can shift the patient in a safe and secured manner. By placing this system in a stretcher or wheelchair, the patient on the stretcher feels secure and comfortable while traveling on the ramp in the hospital. This system is most reliable and low-cost because here for the working prototype the main components used are a gyro sensor, stepper motors, and a microcontroller. The only difference between the working prototype and real-time application is the cost of the stepper motor depending on torque. For more precision in real time, we can implement this prototype with a microcontroller having parallel processing.



STUDENT ACTIVITIES

STUDENT ARTICLES

Title: IMPLEMENTATION OF FIVE & NINE LEVEL MULTILEVEL INVERTERS USING MICROCONTROLLER

Objective: ❖ *To Design an efficient converter system for standalone applications.*
❖ *To Implement Five-Level and Nine Level Multilevel Inverters, which has less number of switches, reduced Total Harmonic Distortion (THD) using ATMEGA328P-PU Microcontroller.*

Authors: G. Naga Mounika
B.H. V. N. Sravani
G. Pravallika
Ch. Sushma

Technical Description:

Multilevel inverter technologies have attracted attention as a convenient solution in many industrial applications. There are a few interesting features of using this configuration where less component count, fewer switching losses, and improved output voltage/current waveform. In this project 5 level and 9-level multilevel inverter, topologies have been developed and results are verified using Simulink. With less component count and with main switches operating at 50 Hz frequency, the switching losses are reduced. Therefore the efficiency of the multilevel converter is increased. With the PODPWM technique of chosen frequency modulation of 21, the first band of harmonics is shifted to the right, so the size of the filter is reduced.



STUDENT ACTIVITIES



TRAINING/WORKSHOPS ATTENDED

- **Y Lakshmi Sowjanya attended a national-level workshop on IoT organized by the Andhra University, Visakhapatnam from 27/2/2020 to 28/2/2020.**
- **V Sowjanya, V Pravallika, G Bhanu Sahithya, and P Lkhitha of III EEE students attended a workshop on Bomb Detection organized by the DRDo, Pune from 01/03/2020 to 02/03/2020.**
- **II and III EEE students attended a three-day training program on Electric & Hybrid Vehicles (E&HV) from 27-02-2020 to 29-02-2020. The resource person for this workshop is Mr. P. Prasanth Kumar, Chief Technical Officer, Electric Mobility Division, Haritha TechLogix Pvt. Ltd., Bangalore. In this workshop, he discussed the different components and architectures of the EVs and the control and performance of the different machines. He also presented the different batteries and their management in EVs. Finally, the powertrain of the EVs is explained, and different components in the EVs are displayed to the students.**





INDUSTRIAL VISITS

R K WINDING WORKS

III EEE students visited the RK winding works, Kakinada, East Godavari, A.P on 14-02-2020 and 15-02-2020. The instructor explained in detail each and every part of the electrical machine and its construction and operation. There the students have seen Induction Motors, Induction Generators, Alternators, and Synchronous Motors in different sizes i.e. small ratings to large ratings. Also, he explained the different types of insulation papers used for different ratings of electrical machines. Also seen, are different conductor sizes and their place of location in the machine. Students are also learned the arrangement of windings in slots, laminations, winding failures, cooling ducts, and different testing kits.



FACULTY ACTIVITIES



WORKSHOPS / FDPs ATTENDED

- Mr. D. Lakshman Kumar, Mr. K.V.S. Prasadarao attended an FDP on the Control and application of resonant invertors at NIT Warangal during the period 14/02/2020 to 15/02/2020.
- Mr. J. Venkatesh attended an ICTIEE-2020 conference during the period 05/01/2020 to 08/01/2019.
- Mr. K V S Prasadarao Attended Tutorial Session on FPGA Controllers for PE applications at VR Sidhartha Eng. College, Vijayawada on 08-01-2020.



PUBLICATIONS

JOURNALS:

- S.Suresh babu, “Real power loss minimization of AC/DC Hybrid systems with Reactive power compensation by using Teaching learning-based optimization algorithm” International Journal of Electrical and Electronics Engineering. Vol.7 Issue4, April 2020.
- S.Suresh babu, “Real Power Loss Minimization of AC/DC Hybrid Systems with Reactive Power Compensation by using Self Adaptive Firefly Algorithm”, International Journal of Industrial Engineering, Vol. 7 issue 1, Jan-April 2020.
- MV Srikanth, “Optimal parameter tuning of Modified Active Disturbance Rejection Control for unstable time-delay systems using an AHP combined Multi-Objective Quasi-Oppositional Jaya Algorithm”, Applied Soft Computing Journal, Volume 86, January 2020, ISSN No. 1568-4946.

CONFERENCES:

- Dr.G.Durga Prasad, K.P.Swaroop, “Performance Analysis of Multi-level Inverter Using Phase Disposition with various Carrier Signal Arrangements”, International Conference on Automation, Signal Processing, Instrumentation and Control (iCASIC 2020), VIT (Deemed to be University), during 27th- 28th Feb 2020
- SSSR Sarathbabu Duvvuri , “Extended State-Space Model of Dual-Stator Winding Induction Motor: A Simulation Study”, International Conference on Smart Energy Systems and Electric Vehicles (ICSESEV), VRSEC Vijayawada, 8th-10th Jan 2020.
- 3. J.Venkatesh, “Activity-Based Learning (ABL) of Power Systems – I (PS-I) and Microprocessors and Microcontrollers (MPMC) Courses”, International Conference on Best Teaching Practices in Engaged Student Learning organized by BITS PILANI, Goa Campus held from (13-15) February,2020.

VEDIC ACTIVITIES

- **Dr. B Suresh Babu attended an Intellectual Learning in Engineering Applications (ILEA) Student Workshop at VEDIC, Hyderabad during the period 11/02/2020 to 14/02/2020.**
- **Mr. S. D. K. Varma, Mr.J.Venkatesh, and Mr.B Ramu attended a "Faculty Colloquium" at VEDIC, Hyderabad during the period 17/02/2020 to 18/02/2020**
- **Mr. D.Lakshman Kumar attended a Workshop on Writing Effective Research Proposals at VEDIC, Hyderabad on 19/02/2020.**



Department Vision

To establish a knowledge hub in the field of Electrical & Electronics Engineering to meet the needs of society

Department Mission

- To produce quality Electrical and Electronics Engineers
- To inculcate discipline and ethical values among the students
- To empower students to succeed in higher education and research

PEOs (UG Programme)		(PEOs of PG Programme)	
<p>PEO1: Demonstrate employability skills and leadership qualities to serve the society.</p> <p>PEO2: Achieve personal and professional success with awareness and commitment to their ethical and social responsibilities.</p> <p>PEO3: Improve professional competence through life-long learning including higher education and research.</p>		<p>PEO1: Graduates acquire technical knowledge to solve complex real-world problems.</p> <p>PEO2: Graduates will exhibit competencies to excel in academia or industry.</p> <p>PEO3: Graduates acquire ability to practice ethical values.</p>	
POs (UG Programme)		POs (PG Programme)	
<p>PO1 An ability to apply knowledge of mathematics, science and engineering.</p> <p>PO2 An ability to design and conduct experiments as well as analyze and interpret results to provide valid conclusions.</p> <p>PO3 An ability to design system components (or) processes optimally.</p> <p>PO4 An ability to contribute individually/ in group(s) representing varied engineering disciplines to accomplish a common goal.</p> <p>PO5 An ability to identify, formulate and solve complex engineering problems.</p> <p>PO6 An understanding of professional and ethical responsibilities.</p> <p>PO7 An ability to use written and oral communication skills effectively</p> <p>PO8 An ability to understand the impact of engineering solutions in a global, economic, environmental and societal context.</p> <p>PO9 An ability to engage in independent and life-long learning.</p> <p>PO10 Knowledge of contemporary issues related to engineering.</p> <p>PO11 An ability to use appropriate techniques, resources and modern engineering tools for engineering practice.</p> <p>PO12 An understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team to manage projects.</p>	<p>PO 1 The graduates have ability to discriminate, evaluate and analyze by acquiring conceptual knowledge base in power electronics.</p> <p>PO 2 Ability to analyze complex engineering problems critically and synthesize information independently for conducting research in theoretical and practical context.</p> <p>PO 3 Ability to think originally and arrive at optimal solutions for power electronic systems after considering safety and environmental factors.</p> <p>PO 4 Ability to identify, formulate research problems individually or in group(s) to the development of technological in the field of power electronics</p> <p>PO 5 An ability to develop mathematical models to use modern tools for designing power electronic topologies for various applications.</p> <p>PO 6 An ability to identify the opportunities in multi-disciplinary and collaborative research work</p> <p>PO 7 Ability to manage projects effectively after consideration of technical and financial factors.</p> <p>PO 8 An ability to develop networking in power electronics community and to make effective presentations and technical reports.</p> <p>PO 9 An ability to engage in life-long learning and an understanding of the needs to meet current trends of developments in the field of power electronics.</p> <p>PO 10 An ability to acquire professional and ethical responsibilities for sustainable development of society.</p> <p>PO 11 An ability to examine critically the outcomes of one's actions and make corrective measures independently</p>		