

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Sakthi Group was founded by the pioneer and successful entrepreneur Late Shri P. Nachimuthu Gounder in 1921 and was expanded by Arutchelvar Dr. N. Mahalingam (Recipient of Padma Bhushan). Nachimuthu Industrial Association (NIA), a trust, was established by Founder Chairman Dr. N. Mahalingam in memory of his beloved father. NIA is a part of Sakthi Group of Companies. Dr. Mahalingam College of Engineering and Technology (MCET), Pollachi was established in the year 1998 to commemorate the 75th birthday of Arutchelvar by Dr. M. Manickam who is the Chairman of NIA institutions. Shri. M. Hari Hara Sudhan is the Correspondent and Prof. C. Ramaswamy is the Secretary.



ABOUT THE DEPARTMENT

Department of Electrical and Electronics Engineering was established in the year 2002 and offers BE (EEE), ME (Applied Electronics) and PhD programmes, approved by AICTE, affiliated to Anna University & accredited by NBA. The department provides an excellent atmosphere for students to learn and acquire necessary skills that are required by the industry. The department has experienced faculty members who are fully committed to teach, carry out research and to impart quality education to the students. Students have access to well equipped, state-of-the-art laboratories. A wide range of research activities undertaken in the department allows students to gain contemporary knowledge about real-life problems in the industry. Hence the department endeavours to provide hands-on education to all of its students. The department has brought out outstanding engineers in the past and will continue its service in the years to come.

Vision

Emerge as the world leader for the Electrical and Electronics Engineering Education and Research for the application of knowledge to the society.

Mission

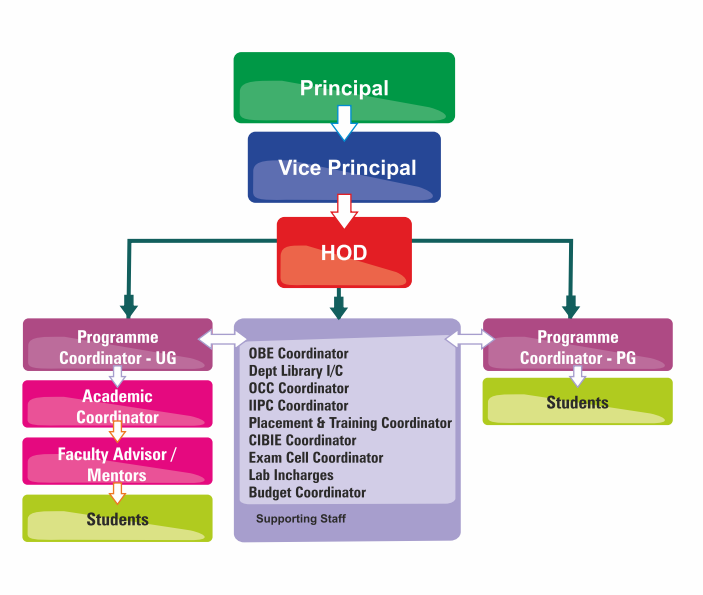
The EEE Department believes that every student is unique and is in process of continuous growth. In order to foster growth and empowerment, we commit ourselves to

- Provide a stimulating learning environment with a Technological orientation to maximize individual potential
- Continuous pursuit of Quality and Excellence
- Provide appropriate know-how and up-to-date knowledge
- Nurture creativity and ambit for research

Programmes Offered

- B.E** - Electrical and Electronics Engineering
- M.E** - Applied Electronics
- Ph.D.** - Recognized Research Centre by Anna University, Chennai

ORGANISATION STRUCTURE



PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

- PEO 1. Actively apply technical and professional skills in engineering practices to face industrial challenges around the globe.
- PEO 2. Own their professional and personal development by continuous learning and apply to create new knowledge.
- PEO 3. Conduct themselves in a responsible, professional and ethical manner supporting sustainable economic development which enhances the quality of life.



MoU Signing Ceremony

MoUs AND MoAs

The department have signed MoU with the following eight companies and MoA with two Universities to promote Research and Development, offer projects, internships and one credit courses to the students

- M/s Voltech Engineers (Pvt) Ltd, Chennai.
- M/s Energy Alternatives India (EAI), Chennai.
- M/s Butterfly Group of Companies, Chennai.
- M/s India Pistons Ltd, Chennai.
- M/s CoreEL Technologies (I) Pvt Ltd, Bangalore.
- M/s SWELECT Energy Systems Ltd, Chennai.
- M/s Reliable Solution, Udumalpet.
- M/s Wind Stream Technologies India, Pvt Ltd, Hyderabad.
- Karunya University
- Periyar Maniammai Institute of Science and Technology

INTERNATIONAL COLLABORATION

- Two Faculty members of the department participated in the Canada - India summit held at Cape Breton University, Canada during October, 2012.
- Department organised India- Canada Project summit on Energy and Environment to promote international collaborative research during 2013.
- Dr. A. Sakthivel worked as Research Trainee in Energy Projects at Verschuren Centre for Sustainability in Energy and Environment (VCSEE) in Cape Breton University, Canada with sabbatical.



SERVING THE COMMUNITY

- “Suryamitra”- Skill Development Program supported by Skill Council for Green Jobs(SCGJ), an initiative by Government of India is conducted by the department through TUV Rheinland, sponsored by Ministry of New and Renewable Energy (MNRE), Government of India.
- The main objective of this training programme is to train 10+2 passed, ITI/diploma holders to execute and successful implementation of National Solar Mission across the country.
- Currently two batches of students are given training related to Solar Energy. Each batch consists of 30 Students and the duration of training is 3 months.

HIGHLIGHTS OF THE DEPARTMENT

- Industry Oriented Curriculum with Outcome Based Education.
- Qualified faculty members with 6 doctorates and 26 PG Holders.
- Teaching - learning in collaboration with Industries through One Credit Courses.
- Potential Students are given special training to get placement in core companies.
- Good Placement Record.
- Encouraging students to undergo In-Plant Training and Internship.
- Established Centre of Excellences - ASIC and CRGEE to promote hands on experience in IC design and Power Quality Engineering.
- Mrs. L Chitra received Certificate for Energy Manager from Bureau of Energy Efficiency in the year 2012.
- Eight faculty members received certificate from IARC Centre for UN in International Paris Climate Summit Program .
- Established 66.5 kWp Solar Power Plant with Data logging system to promote Research on Green Energy.

- Mr. M. Thangavel of 2011 – 15 Batch participated in “Formula Students Spain (FSS) Competition” at Circuit de Catalunya, Batcelona during August 2014.
- Mr. R Vinu Kumar of 2014-18 Batch, as a member of Cricket team secured Winners position in the Anna University Zonal Tournaments for the year 2014-15 held at Pollachi Institute of Engineering and Technology from 09.09.2014 to 13.09.2014.
- Mr. B Surendra Prasad, Mr. Udhaya Shankar, Mr. S Sabari Alagar and Mr. K Saravanakumar received Best Innovation Award and a cash prize of Rs. 10,000/- for the Project “Solar Vehicle Fabrication” at Indo Asian Solar Challenge, RISC Lovely Punjab University, Punjab during April 2015.



Participants at Formula Students Spain Competition



Appreciation of MCET IAEMP student chapter at Thane, Mumbai

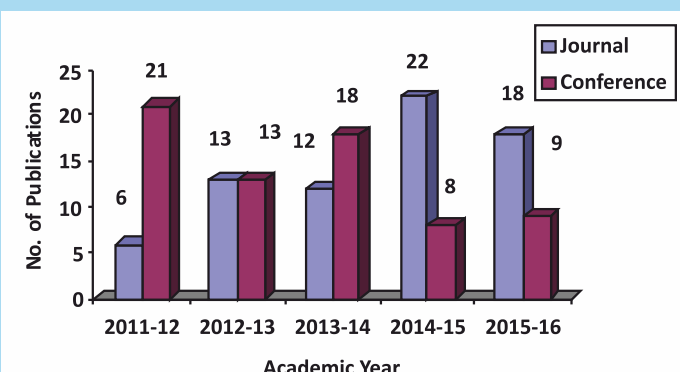
RESEARCH AND DEVELOPMENT ACTIVITIES

Few Industries undertaken consultancy work:

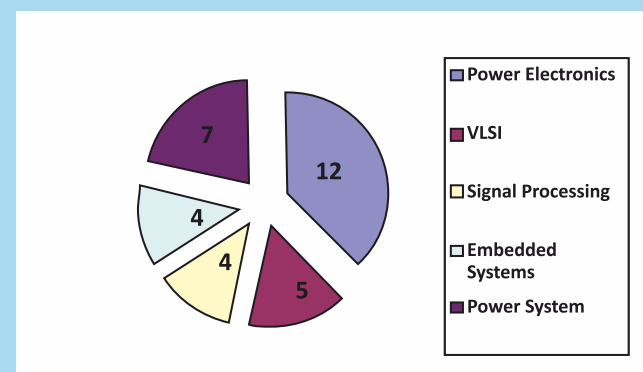


- Received AICTE MODROBS grant of Rs.6,90,000/- for Power Electronics Laboratory.
- Received a grant of Rs. 2,33,000/- from UGC for the project titled “Design and Development of Absorption Photometry and Photo Acoustics based Non-Invasive Blood Glucose Measuring Instrument”.
- Received a grant of Rs. 31,000/- from MNRE for conducting Seminar on “Advanced Microgrids Using Hybrid Renewable Sources”.
- Received a grant of Rs. 5,65,000.00 from DST, IEEE and industry for organizing an “International Conference on RESE’15”.
- Faculty members of the department conducted workshops and training programmes for external participants and generated an amount of Rs. 79,000/- and Rs. 1,18,750/- during the Academic Years 2014-15 and 2015-16 respectively.
- An amount of Rs. 5,49,800/- has been generated through Power Quality and Energy Auditing during the Academic years 2014-15 and 2015 – 16.

Faculty Publications



Faculty Competence Chart



PROGRAMME OUTCOMES (POs)

Graduates of Electrical and Electronics Engineering Programme will be able to

- PO 1. Apply the knowledge of Mathematics, Science and Engineering to solve problems in the field of Electrical and Electronics Engineering.
- PO 2. Identify, formulate/model, analyse and solve complex problems in the field of Electrical and Electronics Engineering.
- PO 3. Design an Electrical / Electronic System / Component, or Process to meet specific purpose with due consideration for economic, environmental, social, political, ethical, health and safety issues.
- PO 4. Design and conduct experiment, analyse and interpret data to provide valid conclusions in the field of Electrical and Electronics Engineering.
- PO 5. Apply appropriate techniques and modern tools for design and analysis of Electrical/Electronic systems with specified constraints.

- PO 6. Apply contextual knowledge to provide engineering solutions with societal, professional & environmental responsibilities.
- PO 7. Provide sustainable solutions within societal and environmental contexts for problems related to Electrical and Electronics Engineering.
- PO 8. Comply with code of conduct and professional ethics in engineering practices.
- PO 9. Work effectively as an individual or as a member/leader in multi disciplinary team to find solutions for engineering problems.
- PO 10. Communicate effectively to engineering community and society with proper aids and documents.
- PO 11. Demonstrate knowledge and understanding of the engineering and management principles to manage projects in multi disciplinary environment.
- PO 12. Recognise the need for, and have the ability to engage in independent and lifelong learning.

OUTCOME-BASED EDUCATION (OBE)

MCET has stepped into Outcome-Based Education to meet out the global standards and expectations from its stake-holders in all its engineering programmes. The goal of MCET is to create entrepreneurs, innovators, engineers and scientists with good ethical and professional values by adapting OBE. The shift toward outcome-based education at MCET is analogous to the quality revolution in industrial sectors. Concerns that the education system cannot adequately prepare students for life and work in the 21st Century have prompted MCET to explore new ways of designing education. To achieve and to enhance the learning outcomes, Outcome Based Educational Program at MCET continuously develops and raises the capabilities of teaching, learning and evaluation.

Initiatives:

- Faculty members attended Teaching Learning Seminar series I & II on “Analysis, Design, Development, Implementation and Evaluation of Assessments” facilitated by Dr. John Rymer, University of Calgary.
- Tie up with TVS Motor company, Hosur to enhance Outcome based Education.
- Five Faculty members undergone workshop on OBE at TVS Motor, Hosur.
- Many Faculty members attended Mission 10X Faculty Empowerment program conducted by Wipro Ltd.
- Four Faculty members received an honour code certificate on “Educational technology for Engineering Teachers” from IIT BombayX to enhance the teaching learning process.
- Two faculty members have participated in AICTE sponsored FDP on “Use of ICT in Education for online and Blended Learning” conducted by IIT Bombay.
- Cambridge International Certificate for Teachers and Trainers certificate at Professional level with Distinction awarded to Ms. J. Amudha at Mission 10X Wipro Ltd.

Industry Attached Courses

- Control Systems for Wind Energy.
- Android Application for Power Monitoring.
- Embedded Programming using Arduino Microcontroller.
- Energy Auditing.
- Electrical Solution- A Practical approach.
- Electronic System Design.



INFRASTRUCTURE DETAILS

The novelty of the department is well-furnished, ventilated class rooms with multimedia projector, individual faculty cabin, exclusive seminar hall with audio video system and well equipped laboratories both for UG and PG. The laboratories of the department are:



DC Machines Lab I & II



AC Machines Lab I & II



Digital & IC/ Power Electronics and Drives Lab



Control Systems Lab



Microprocessor and Microcontroller Lab



Power System Simulation Lab



Programming /Computer aided Design Lab



Electronics/Circuits & Devices Lab

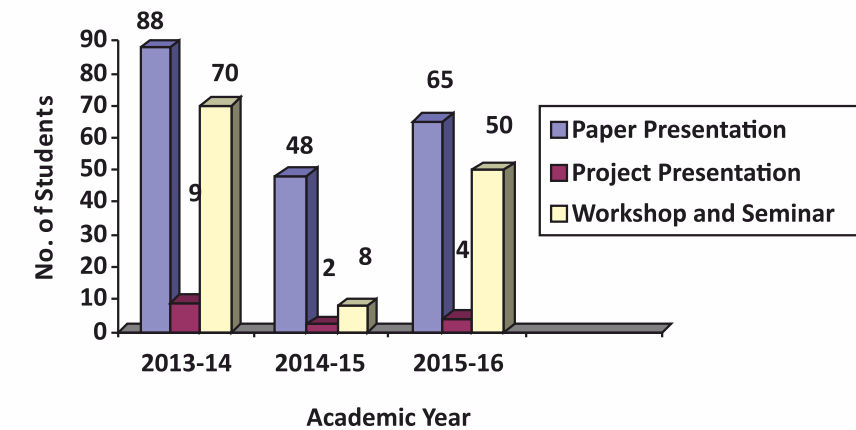


Engineering Practices Lab

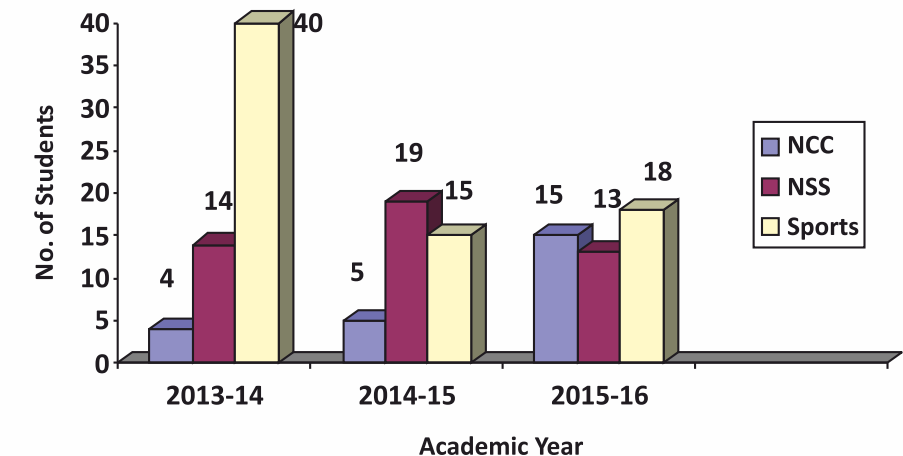


Department Library

STUDENT INVOLVEMENT IN PAPER PRESENTATION, PROJECT PRESENTATION, WORKSHOP AND SEMINAR

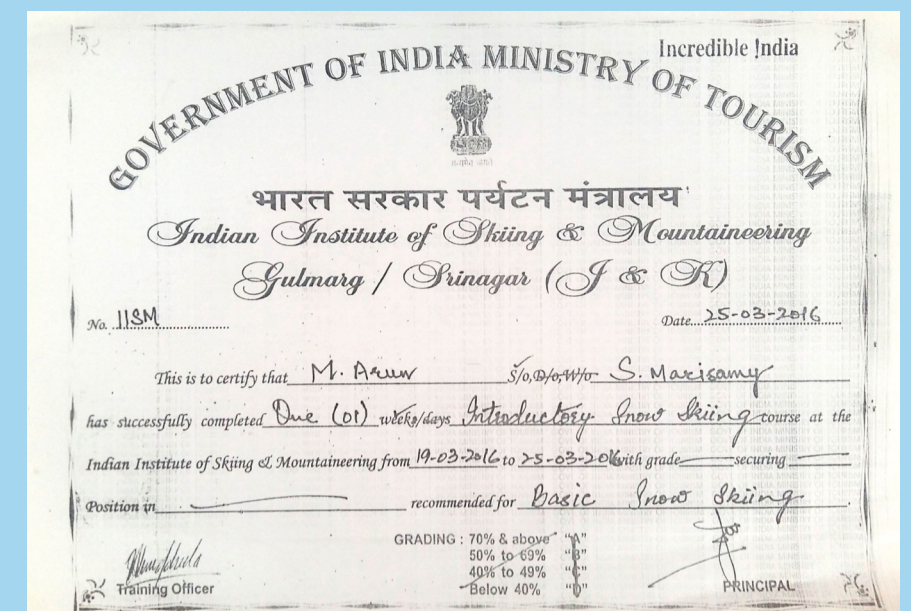


STUDENT INVOLVEMENT IN EXTRA-CURRICULAR ACTIVITIES

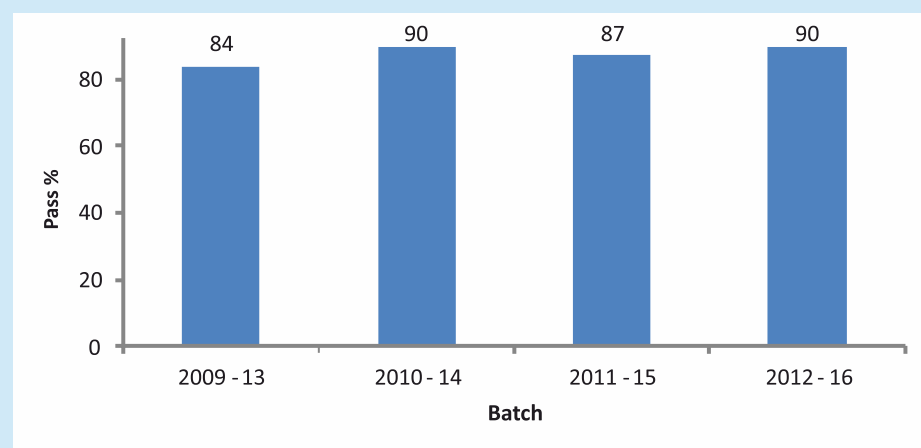


HIGHLIGHTS OF STUDENT ACTIVITIES

- Mr. M Arun, 2013-17 Batch received 'B' Grade certificate in NCC and participated in "Snow Skiing and Mountaineering" in a National Camp held at Gulmarg, Srinagar from 19.03.2016 to 25.03.2016.
- Mr. G Deepak Raj, 2013-17 Batch participated in Special National Integration Camp at Kavaratti, Lakshadweep from 15.04.2016 to 26.04.2016.
- Mr. C. Kaushik Narayanan and Mr. S. Charan Raj of 2013 – 17 Batch got "Best Student Member Award" from IAEMP Student Chapter during April, 2016.
- An amount of Rs. 7,400/- has been sanctioned to the students Ms. R. Santhiya, Mr. V. Karthik and Mr. F. Noor Ahmed Khan of 2010-14 Batch by Tamil Nadu State Council of Science and Technology for the project titled "Smart Sensoric Security System for Two Wheelers and Riders".



ACADEMIC STUDENT PERFORMANCE

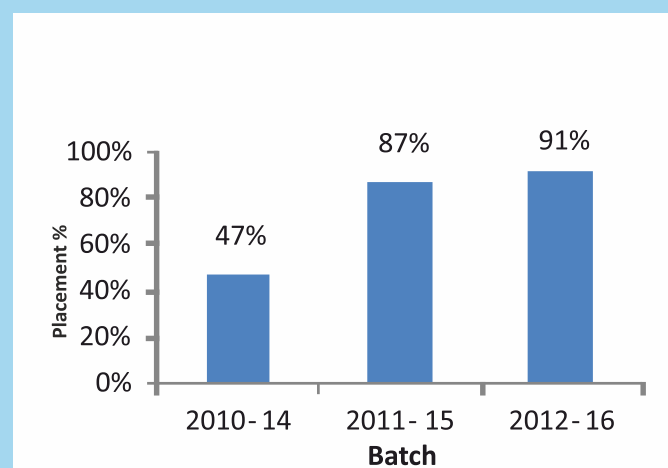


University Rank Holders

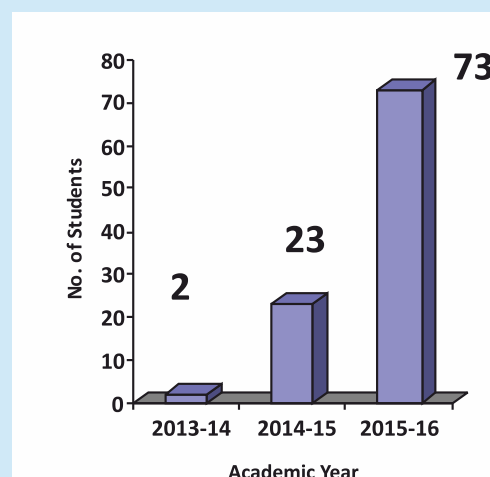
2009 2013	Arthi G	4
	Baby Usha T	4
	Bhanu Priya D	8
	Aswini Mohan T	35
	Vignesh K S	45
	Bhuvaneshwari S	46
	Manojkumar M	46
2010 2014	Kayalvizhi S	48
	Aarthi S	2
	Manuraj R	5
	Arunadevi	14
	Nivetha T	19
	Kausalya P	47
	Anusha S	47

PLACEMENT DETAILS

Our Major Recruiters.....



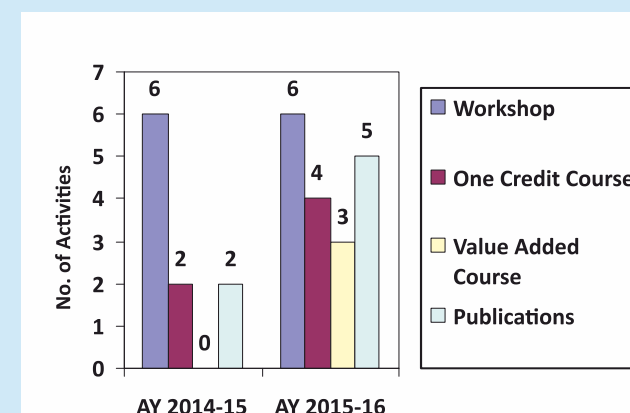
INTERNSHIP DETAILS



CENTRE OF EXCELLENCE

ASIC CENTRE OF EXCELLENCE

ASIC Centre of Excellence was established in the year 2013 in Collaboration with Cadence Design Systems, Ireland, who are market leaders in Electronic Design Automation. The primary objective of the centre is to impart skill sets in custom IC and Reconfigurable FPGA designs on par with present semiconductor industry needs to students, research scholars and Faculty members.



cadence



Strength

- Offers one credit courses and Value Added Courses on Custom Analog and Digital IC design.
- Continuous interaction with Industries like Media Tek, Intel Ltd, for student Internship and placement.
- Two UG Students got placed in Intel Ltd, Bangalore.
- Two PG Students got Internship at Intel Ltd, Bangalore



CENTRE FOR RESEARCH ON GREEN ENERGY AND ENVIRONMENT

This Centre contributes to the research base in the areas of green energy and environment that helps in protecting our natural world, while clearly defining the opportunities that arise as we shift towards a greener economy.

Strength

- Conducted 3 Exhibitions on Green Energy Technologies.
- Installed 60kWp Solar Power Plant and 6kWp solar LED street light system.
- Research Collaboration with Centre for Sustainable Energy and Environment, Cape Breton University, Canada.
- Offering One Credit Courses on Energy Auditing & New and Renewable Energy Systems for the students.
- Offering consultancy services to industry in the area of Green Energy, Power Quality and Energy Conservation



Consultancy offered to

- Sakthi Soyas Ltd
- ABT Industries Ltd - Dairy Division
- Sri Venkatesa Processors Ltd
- Suguna Foods Ltd
- India pistons Ltd (Ring Plant II)
- Sree Ambal Processors Ltd
- Venkadakiri Spinning Mills Ltd and more...

PROFESSIONAL BODIES



Students and Faculty members are provided with opportunity to join as members in professional societies such as IEEE, ISTE and IAEMP. IEEE Student Branch received certificate of appreciation for the activities conducted during 2015.

Indian Association of Energy Management Professionals (IAEMP) is a group of highly qualified, committed and dynamic conscience keepers to nation on energy matters. IAEMP MCET Student Chapter was established in the year 2016.

DEPARTMENT STUDENT ASSOCIATION - AVERA

The department association AVERA provides additional technical input for the students by arranging guest lectures, seminars and symposia.



PROGRAMMES ORGANIZED

The Department has organized various workshops, guest lectures, conferences in the field of Renewable Energy, Embedded Systems, VLSI, etc. and the few list of above activities from 2013 onwards includes:

- Workshop on the title “CMOS Layout Design Using μ Wind”
- Faculty Training Program on “IC Design Using Cadence EDA Suite”
- Workshop on “Energy Auditing for Practicing Engineers”.
- MNRE sponsored two day National Seminar on “Advanced Micro Grids using Hybrid Renewable Energy Sources”
- Workshop on “Custom Analog IC design using Cadence EDA Suite”.
- Workshop on “System design using FPGA and Cadence EDA Tools”.
- Workshop on “Custom Digital IC design using Cadence EDA Suite”.
- Workshop on “Embedded design and Microcontroller Applications”.
- Hands on training in “Arduino Programming”.
- Workshop on “System Design Flow using Xilinx Vivado Design Suite on Zynq-7000 SoC Kit” organized in association with CoreEL Technologies, Bangalore.
- Workshop on “Embedded Robotics using Advanced Microcontroller”.
- Hands on training in “PQA tools, Motor performance diagnosing with power analyzer- Electrical Energy Audit & Conservation Practices”.

RESE 2015 - INTERNATIONAL CONFERENCE

- DST, IEEE and industry Sponsored International Conference on “RENEWABLE ENERGY AND SUSTAINABLE ENVIRONMENT (RESE 2015)” was conducted in collaboration with Cape Breton University, Canada
- Over 100 delegates participated in the Conference.
- About 11 speakers delivered lectures.

Academic partners of RESE 2015 were NITTTR, Karunya University and Periyar Maniammai Institute of Science and Technology. The Knowledge partner was Society for Educational and Entrepreneurship Development (SEED) and the media partner was THE HINDU who promoted the conference.

The three major objectives of the conference were

- To bring research scholars and eminent experts together to share their expertise in the fields of renewable energy and sustainable environment.
- To promote collaborations with industries for the mutual benefits of both.
- To explore and promote the possibilities of business incubations in these areas.



Advanced Micro Grids using Hybrid Renewable Energy Sources



Custom Analog IC design



Embedded Robotics using Advanced Microcontroller



Custom Digital IC design

INTERNATIONAL CONFERENCE ON RESE 2015



Presidential Address by Dr. M. Manickam, Chairman, MCET



Valedictory Ceremony

Shri.Tarun Kapoor, IAS, Joint Secretary, Ministry of New and Renewable Energy (MNRE), Govt. of India, New Delhi was Chief Guest of the function. In addition to workshops and guest lectures, an exhibition was organized where about 35 entrepreneurs and agencies had displayed their products and activities on the conference topic. Mr. C. Kannan Director (Finance), Solar Energy Corporation of India, New Delhi declared open the exhibition, which was conducted in parallel with the conference.

For the conference, more than 100 research scholars submitted their research articles. Out of which, 80 were selected after a peer technical review. Papers were solicited under six sub themes namely wind, solar, biogas/ biomass, energy and environment, sustainable environment and impact of industrialization on the environment.



Participants for a session



Release of conference proceedings



Keynote speaker for a session



Participants at inaugural function



Product display at Exhibitions