FACILITIES FOR ENERGY RESEARCH

RF Magnetron Sputtering System | DC Magnetron Sputtering System | Pulsed Laser Deposition (PLD) | E-Beam Evaporator

Thermal Evaporation | Chemical Vapor Deposition (CVD) | Spin Coater

Cutting Machine | Polishing Machine | Ball Mill Dual Mixer

- Stylus Profilometer
- Potentiostat/ Galvanostat with impedance analyser
- Hall Effect Measuring System
- Scratch Indenter
- Solar Stimulator
- UV-Visible-NIR Spectroscopy
- 50L Biodiesel Plant
- Biofuel Quality Control Laboratory
- Biofuel Engine & Emission Studies Laboratory
- Gas Chromatography- FID / TCD for Bio fuel analysis

CHIEF PATRON

Col. Dr. JEPPIAAR M.A.,B.L.,Ph.D.

Chancellor, Sathyabama University

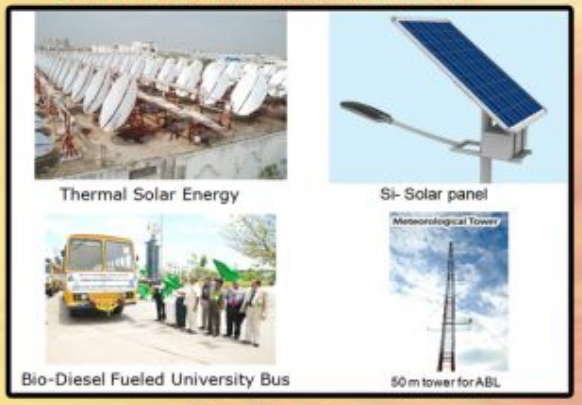
PATRONS

Dr. Marie Johnson B.E., MBA., M.Phil.,Ph.D.

Dr. Mariazeena Johnson B.E., MBA., M.Phil.,Ph.D.

Directors, Sathyabama University

EXISTING TECHNOLOGIES AT SATHYABAMA UNIVERSITY



Thermal Solar Energy | Si- Solar panel

Bio-Diesel Fueled University Bus | 50 m tower for ABL

Contact:

Dean & Centre Co-ordinator

Centre of Excellence for Energy Research

Sathyabama University

Rajiv Gandhi Road, Jeppiaar Nagar,

Chennai 600 119

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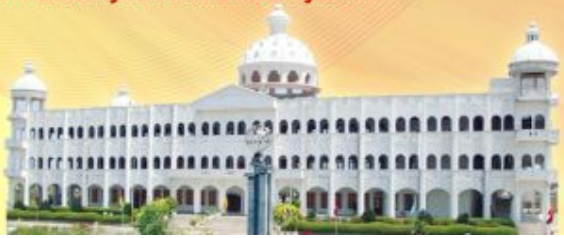
For further details visit: www.energyresearch.in

www.sathyabamauniversity.ac.in



SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Declared as Category 'A' University by MHRD, Government of India

ISO 9001 REGISTERED

CENTRE OF EXCELLENCE FOR ENERGY RESEARCH

Funded by MHRD, Govt. of India, New Delhi

MHRD Govt. of India

Information Brochure

CENTRE OF EXCELLENCE FOR ENERGY RESEARCH

The Ministry of Human Resource and Development (MHRD), Government of India has conferred Centre of Excellence for Energy Research under the Scheme of Establishment of Centre of Excellence in the Frontier Areas of Science and Technology (FAST) to our University in August 2014.The Centre was formally inaugurated by former President His Excellence Dr. A.P.J Abdul Kalam on 9th October, 2014 in the august presence of our honorable Chancellor Dr. JEPPIAAR and Directors Dr. Marie Johnson and Dr. Mariazeena Johnson. The Centre activities are initiated by an expert team comprising of Scientists and Engineers from various disciplines of science and engineering with an expectation to manage the challenging tasks in education, training, research and development programmes in the novel and newly emerging areas of energy research. The Centre will work in collaboration with private and governmental organizations in meeting the energy demand of the country. As an outreach initiative, the Centre will organize several national and international workshops / conferences to disseminate emerging technologies and collaboration with world leaders in the energy sectors.

RESEARCH AT THE CENTRE

The primary objective of the Centre is to provide sustainable energy solutions to the need for energy. Research at the Centre is taken up in four domains covering Solar Cells, Solar Thermal, Fuel Cells and Bioenergy. Research initiatives have been already taken up in the development of polycrystalline silicon thin film PN junctions ,Compound and Multi-junction photovoltaics, Solid oxide fuel cells, Proton Exchange Membrane (PEM) Fuel Cells, Algal Biodiesel, Bioethanol from macro algal rejects and Biohydrogen from food waste.

INDUSTRIAL COLLABORATORS

- Amara Raja Batteries Ltd., Andhra Pradesh
- HIND HIVACUUM Co., Karnataka
- MALNAD Industries, Karnataka
- Inovonz Engineering Private Limited, Chennai

COURSES OFFERED

Apart from the research, the Centre also focuses on the Development of Human Resources by offering Post Graduate Courses for Basic Science Graduates and Engineering Graduates. Certificate/Diploma Programmes for employed Professionals with the focus towards skill development in energy sector will also be offered.

Courses	Eligibility	Duration
Regular Programme		
M.Sc Energy Science	B.Sc (Physics, Chemistry, Microbiology, Biotechnology)	2 Years **Stipend will be provided to the top ten candidates on merit basis in each course as per University norms**
M.E. Energy Engineering	B.E./B.Tech(Mechanical, Chemical, Aero, Mech & Prod, EEE, ECE, Nano-Technology, Material Science& Engg.,) M.Sc, (Physics, Chemistry, Material Science)	
M.E. Material Science & Engineering	B.E./B.Tech(Mechanical, Chemical, Aero, Mech & Prod, Nano-Technology, Material Science& Engg.,) M.Sc, (Physics, Chemistry, Material Science)	
M.Tech Green Engineering & Technology	B.E./B.Tech (Civil/Chemical/ Geoinfomatics/Biotechnology/Industrial Biotechnology). B.Tech Energy and Environmental Engineering	
Diploma in Energy Engineering	10th, +2 with Maths, Physics, Chemistry, Biology	2 Years
Weekend Programmes		
Post Graduate Diploma in Sustainable Energy Technologies	M.Sc (Physics, Chemistry Material Science) B.E./B.Tech (Mechanical, Chemical, Aero Mechanical & Production Nano-Technology, Material Science& Eng.) B.E./B.Tech any branch with 3 years of relevant experience	1 Year
Post Graduate Diploma in Energy Management		
Energy Audit Certification	B.E./B.Tech in any branch with 3 years of relevant experience	6 Months

Application forms may be obtained from the University office or downloaded from the websites (www.energyresearch.in / www.sathyabamauniversity.ac.in)

For any further information of the aboveCourses contact: 044-2450 3065 / 3814

SCOPE OF POST GRADUATE COURSES

M.Sc Energy Science

The Curriculum envisages the basics of energy science and technology with focus on the fundamentals of both conventional energy sources such as oil, natural gas, coal, nuclear and hydroelectric. Sustainable energy technologies including wind, solar, biomass, geothermal, ocean will also be focused. It also provides scientific knowledge on energy production and distribution technologies, energy efficiency, assessment of environmental issues with the National energy policies.

M.E. Energy Engineering

Masters in Energy Engineering aims at delivering qualified engineers with advanced interdisciplinary skills to design, operate, optimize, and evaluate the technical and economic viabilities on power generation systems and managing energy resources in terms of production, processing, storage and distribution. This curriculum also addresses the need for the development of alternative sources of energy using cost effective renewable methods.

M.E. Material Science & Engineering

Materials science and Engineering encompasses a broad spectrum on manufacturing, processing and development of all classes of materials including metals, ceramics, semiconductors, polymers, and biomaterials for specialized applications and with energy, environmental, health, economic and manufacturing issues relating to material properties. The course provides opportunities for hands on experience in characterization of materials at nano level.

M.Tech Green Engineering & Technology

Green Engineering and technology symbolizes the fundamental building steps of sustainability, security and affordability. The curriculum would help to develop new and more sustainable industrial production processes and to achieve fossil- independent future with bioeconomy based on natural feedstock like biowaste and industrial byproducts. The green engineering and technology would play a vital role in the creation of sustainable and more environmental friendly society.