VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF ELECTRICAL ENGINEERING

- B.Tech (Electrical and Electronics Engineering)
- B.Tech (Electronics and Instrumentation Engineering)
- M.Tech (Power Electronics and Drives)
- M.Tech (Control and Automation)
- Ph.D and Integrated Ph.D

INFORMATION BROCHURE - 2021

School of Electrical Engineering (SELECT)

www.vit.ac.in/select/

'Develop skilled engineers to meet industry needs and thereby develop responsible citizens for our country and society'

The School of Electrical Engineering (SELECT) has over 93 faculty members who pursued their UG, PG and Doctoral degrees from top-notch universities. The faculty members are consistently performing well in teaching and research. Faculty members and students frequently receive awards, laurels and prizes for outstanding research contributions in their respective fields.

The school offers B.Tech. (Electrical and Electronics Engineering), B.Tech. (Electronics and Instrumentation Engineering), M.Tech. (Power Electronics and Drives) , M. Tech. (Control and Automation), Ph.D and Integrated Ph.D in Engineering. Both B.Tech. and M.Tech. programmes attract the Intelligent students from the country and abroad. The B.Tech. Electrical and Electronics Engineering and B.Tech. Electronics and Instrumentation Engineering Programmes are accredited by the Engineering Accreditation Commission of ABET. All UG & PG programmes of the school are accredited by the Institution of Engineering and Technology (IET), U.K.

The placement record of the school has always been impressive. Almost 100% of the students secure job from the campus placement and many of them are recruited in core companies. We encourage our students to carry out industry based projects during their B.Tech and M.Tech degrees. The School has state-of-the art laboratories in almost all the areas of Electrical, Electronics and Instrumentation Engineering. The School has the latest simulation tools to cater various specializations and is equipped with facilities for measurement, characterization and synthesis of experimental as well as theoretical results. SELECT has industry sponsored advanced laboratories for performing world class research and consultancy. Danfoss Advance Drives Lab, Schneider Electric Smart Energy Monitoring Lab, Fluke Testing and Calibration Lab, Q-Max Automated Test Engineering Lab (Alumni Sponsored Lab) and NxP Semiconductors, India, have established Centre of Excellence for students R&D activities under the guidance of faculty members and industry experts.

The students are encouraged to take advantage of the growing opportunities by incorporating an international internship experience in their final year undergraduate and postgraduate education. Students are also motivated to opt twin degree program with various reputed universities across the globe. Every year, students get scholarships to do their final year projects abroad under the Semester Abroad Program (SAP).

THRUST AREAS OF RESEARCH ACTIVITIES

- Smart Grid
- E-Mobility
- IIoT & Automation
- Augumented Reality
- Deep Learning / Machine Learning for Electrical Systems
- Renewable & Sustainable Energy
- Ultrafast Photonics
- Energy Monitoring
- Bio-Medical Instrumentation

Laboratories at SELECT

Our Laboratories have sufficient modern equipments to facilitate students for conducting UG and PG experiments. School has established Research labs with all advanced facilities. Some of the major industries have established their State-of-Art R&D facilities.


Electrical Machines Lab


Power Electronics Lab


M&I Lab


Industrial Automation Lab


Process Control Lab


Ultra Fiber Optics Lab


Digital Simulation Lab


Control System Lab


NXP Semiconductors Lab


Danfoss Advanced Drives Lab


Qmax Technology Lab


Schneider Electric Lab

Electrical and Electronics Engineering

World Ranking - 301 - 350
India Ranking - 10
2020

World Ranking - 451 - 500
India Ranking - 13
2019

QS WORLD UNIVERSITY RANKINGS by subject

❖More than 15 Adjunct Professors from various Universities across the globe.

❖On the whole of 20 Labs, 4 are Industry Sponsored Laboratory and 3 are started with government funding.

❖A net worth of 7.5 Crores of Equipment.

❖Successfully transferred two of our technologies to Industry partners.

❖Niche Area Labs such as Smart Grid Lab, Industrial Automation lab, Solar Research Lab, Ultrafast Photonics Lab, Virtual Reality & Energy Monitoring Lab.

❖Handful of successful entrepreneur from SELECT.

❖International Conference, Industrial Conclave, Make-A-thon, Energy Conservation and Code & Standards week are conducted every year.

❖14 Student Chapters and Clubs.

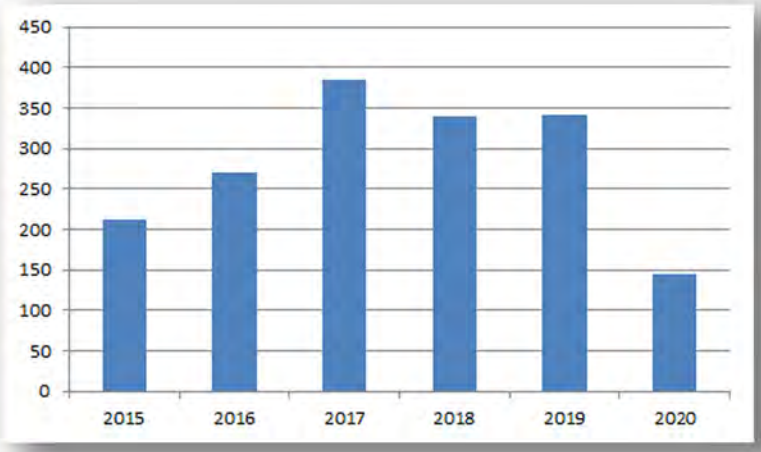
❖95% of our Faculty Members are Ph.D holders from reputed institutes within India and Abroad.

42
h-index

1693
Scopus Publications

2.152
Average Impact Factor

Scopus Publications



UG Publications

Year of Publications	Articles Published
2019	40
2018	41
2017	24
2016	20
2015	16

Highest Impact Factor Journal Publication

IEEE Trans. Power Electronics-7.224 | IEEE Trans. Power System – 6.807 | RSER (Elsevier) – 10.556 | Applied Energy – 8.2 | ECM (Elsevier) – 5.6 | Energy - 4.52 | Renewable Energy - 4.4 | Energy Policy & Energy and Buildings - 4.1| Solar Energy - 4

Books and Chapters

131 chapters | Wiley Publications
CRC Press | Alpha Science International Ltd., Oxford, U.K. | Lambert Academic Publishing, Germany | Narosa Publications, New Delhi.

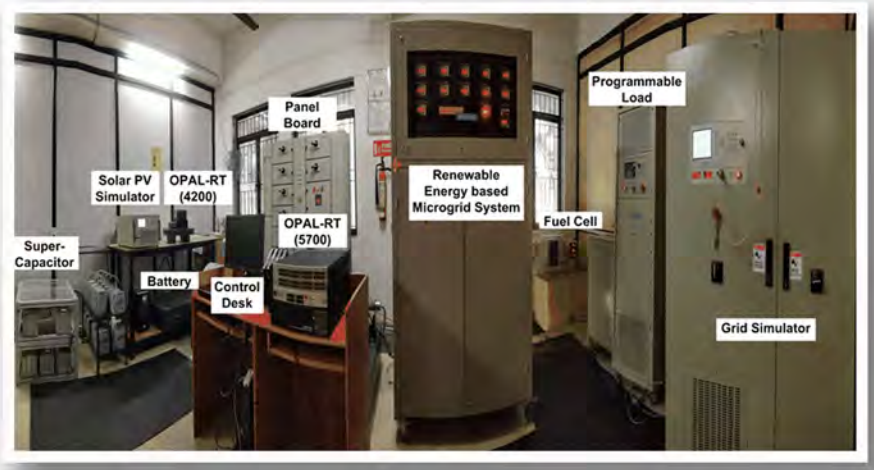
Highlights

Patent filed : 10 (5 Published) | Certified Energy Auditor, BEE, Govt. of India. | Fulbright-Nehru Postdoctoral Research Fellowship| Erasmus Mundus Scholars | Received best thesis award by USIEF | Reviewers in International reputed journals and Journal Editors

Publication with International Collaborations

- Stevens Institute of Technology, Hoboken, NJ, United States
- College of Engineering, Shantou University, Shantou, China
- Technische Universität München, München, Germany
- Sophia University, Japan
- Dunarea de Jos University of Galati, Galati, Romania
- Nottingham University, Nottingham, United Kingdom
- Airlangga University, Surabaya, Indonesia
- Naresuan University, Phitsanulok, Thailand
- Nanyang Technological University, Singapore
- University of Aberdeen, Scotland, UK
- Andrew and Erna Viterbi Faculty of Electrical Engineering, Technion, Israel
- Aalborg University, Aalborg, Denmark
- School of Engineering, Faculty of Science Engineering & Built Environment, Deakin, Australia
- KTH-Royal Institute of Technology, Stockholm, 10044, Sweden
- Universiti Tenaga Nasional, Malaysia
- University of Malaya, Malaysia
- University of Johannesburg, South Africa
- Tallinn University of Technology, Tallinn, Estonia
- Wroclaw University of Technology, Wyb. Wyspianskiego , Wroclaw, 50370, Poland

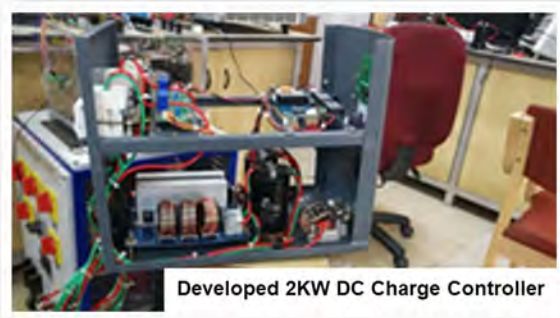
Centre for Smart Grid Technology



Equipment	Cost in INR
Smart grid	91,28,010
OPAL RT Power Amplifier	11,55,000
OPAL RT OP5707, OP4200	49,07,936

100 kVA rated microgrid test bench which consists of 100 kVA grid emulator, 10 kVA of solar PV emulator, 10 kVA of wind emulator, 1 kVA of Fuel cell, hybrid energy storage system with 5 kWh of lithium phosphate battery and 165 F of super capacitor and 5 kW of programmable load.

Solar Energy Research Cell


Developed 2KW DC Charge Controller

Established in 2015, Solar Energy Research cell (SERC) at SELECT, VIT focuses on:
1) Development of OFF/ON-grid PV systems, Fault diagnosis in PV power plants, and Renewable energy powered EV. 2) SERC till date has received funding of over 265 lakhs (INR) and members of SERC works collaboratively with both academia's like: NTU, Alborg, Deikin and industries like: EnArka, Mahika Energy. 3) To its honor, SERC has developed two indigenous products., filed a patent, produced 9 doctoral research students.

Electric Vehicle Research


Electric Bicycle


Universal Wireless Charger: Upto 100cm

1. 4 Patents (3 Published)
2. Product - Technology Transfer

1. Developing a four-wheeled electric vehicle for research, teaching and outreach in Tamil Nadu, India - funded by Royal Academy of Engineering, Collaboration with VIT, SMEC & Loughbourgh University , UK.
2. Fuel Cell Powered Electric Bicycles With Solar Generator Based Refueling Technique For Sustainable Transportation - funded by DST.

Insulation Diagnosis & Condition Monitoring

High Voltage Test Setup

A. 140 kV Lightning Impulse Voltage
B. 140 kV High Voltage DC
C. 100 kV High Voltage AC

Research Collaborations:

1. University of Peradeniya – Sri Lanka: DST India Sri Lanka Bilateral Collaborative Project - Lightning Protection of Heritage Monuments
2. Indian Institute of Tropical Meteorology (IITM), Govt. of India -Pune: Development Software System of Lightning Monitoring & Prediction
3. Hi-Volt Tekno Products- Bengaluru: Development of Low Power Range Portable High Voltage Test Kits

Research and Industry Sponsored Funds

₹352.67

Funds Received (Lakhs)

8

On-going Projects

11

Completed Projects
(DST, DRDO, ISRO, MHRD)

20

Submitted Research proposals
(DST, EMR, ECR)

On-going Projects

S.No.	Year	Project Title	Principal Investigator	State / National	Funding Agency	Total Project Cost
1	2020	Emotion Classification in Children's Speech By Humans and Machines: Cross -Cultural	Dr. N. Ruban	International	Department of Science & Technology - Indo-Russian Bilateral	Rs. 32,59,672
2	2017	Protection of Heritage Monuments and Landmarks of National and Landmarks of	Dr. S. Venkatesh	International	Department of Science & Technology - India Sri Lanka Bilateral	Rs. 34,10,000
3	2020	Computer aided diagnosis system for detecting the impact of COVID-19 on human using	Prof. Monica Subashini M	International	PSUSA	Rs. 10,00,000
4	2019	C3 Fields: Head mount Portable device for Visual Field Perimetry	Dr.P.Arulmozhivarman	National	DST	Rs. 44,47,872/-
5	2019	Development of a High-Speed, Compact OCT Imaging System	Dr.S. Balamurugan Dr.P.Arulmozhivarman	National	DST	Rs. 94,23,342/-
6	2018	Intelligent Off Grid System for Energy Sustainable Village	Dr. N. Rajasekar	National	Department of Science & Technology	Rs. 2,40,87,557
7	2020	Design and Development of fibre optic narrow band pass filter at infrared wavelength	Dr. S. Sivabalan	National	DST	Rs. 16,77,000
8	2017	Power hardware- in- loop simulation	HOD- Power Electronics & Energy	National	Department of Science and Technology - FIST	Rs. 1,00,00,000
9	2017	Development of a cost effective femtosecond fiber laser with variable output characteristics for nonlinear optical imaging	Dr. S. Sivabalan	National	Department of Science and Technology - Science and Engineering Research Board	Rs. 54,11,560

254 Seminars / Workshop Organized

320 Guest Lectures

34 Value Added Programs Conducted

45 Industrial Visits Organized

15 Makeathon/Hackathon/Circuitsthon

10 International Conference Organized

25 ISTE Workshop under MHRD (IITB & IITK)

Flagship Events

Academia-Industry Conclave

International Conference – IPACT 2019 & ICASIC 2020

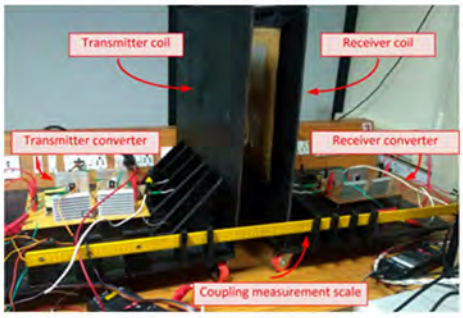
SELECT Make-A-Thon

Energy Conservation Week

Codes and Standards

Product/Prototype developed by UG/PG/Research

Saturable Absorber

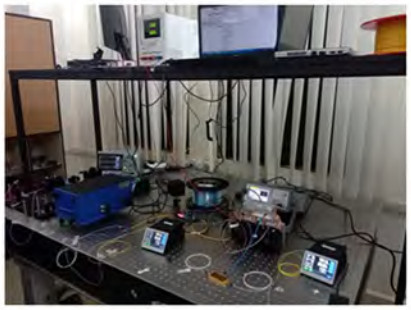


Wireless charging system
(Hindustan, Inox Ltd)

C3 Field Analyser

Faculty Achievements

Rural Electrification in Karnataka region by Dr. Rajasekar, 2020



Indigenously developed Femtosecond laser, 2020

Dr. Arulmozhivarman, Visited for collaborative discussion University of Sydney, Victoria University and RMIT Melbourne during Dec. 2016 – Jan. 2017

Dr. S. Vivekanandan , Asso. Prof received a Student Mentor Award of the year 2017 in Tampa Bay, Florida USA

Electrical Cycle developed by Dr. D. Elangovan and student team ,2019

MoU with

TAYLOR'S UNIVERSITY
Wisdom · Integrity · Excellence

University of Strathclyde Glasgow

汕頭大學 SHANTOU UNIVERSITY

Cinvestav

DEAKIN UNIVERSITY

RMIT UNIVERSITY

Australian National University

KTH VETENSKAP OCH KONST

ESIGELEC

CENTRALE NANTES

OKLAHOMA STATE UNIVERSITY

QUT

ROCHESTER INSTITUTE OF TECHNOLOGY R·I·T 1829

BANGKOK UNIVERSITY
THE CREATIVE UNIVERSITY

isep

UNIVERSITÉ PARIS SUD

TOKYO TECH Pursuing Excellence

UNIVERSITÉ Concordia UNIVERSITY

한국항공대학교 KOREA AEROSPACE UNIVERSITY 1952

KOOKMIN UNIVERSITY SINCE 1946 KMU 국민대학교

Hochschule Karlsruhe Technik und Wirtschaft
UNIVERSITY OF APPLIED SCIENCES

h_da
HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES

THE UNIVERSITY OF MISSISSIPPI

Lawrence Tech
Possible is everything.

มหาวิทยาลัยนเรศวร

ERUDIO ET MUST

UNIVERSITAS SEDIS SAPIENTIAE SOPHIA

Industry Collaborative Activities

Collaborative Research

Joint Project

Joint Funding Proposals

Challenging Lab Experiments

Curriculum Revision / Advisory Board

Adjunct Professorship

Value Added Training/ Workshop

Online Course Certifications

Industrial Visit / Internship Activities

Innovation Competetion

Professor Engagement Program

Joint publications

Patents

Contact Details:
Prof. Sivabalan S
Dean/SELECT
dean.select@vit.ac.in
0416-2202360
9894681056