VIT®
Vellore Institute of Technology
(Deemed to be University under section 3 of the UGC Act, 1956)

# School of Electrical Engineering (SELECT)

## Vision

To offer an education in electrical engineering that provides strong fundamental knowledge, skills for employability, cross-disciplinary research and creates leaders who provide technological solutions to societal and industry problems.

## Mission

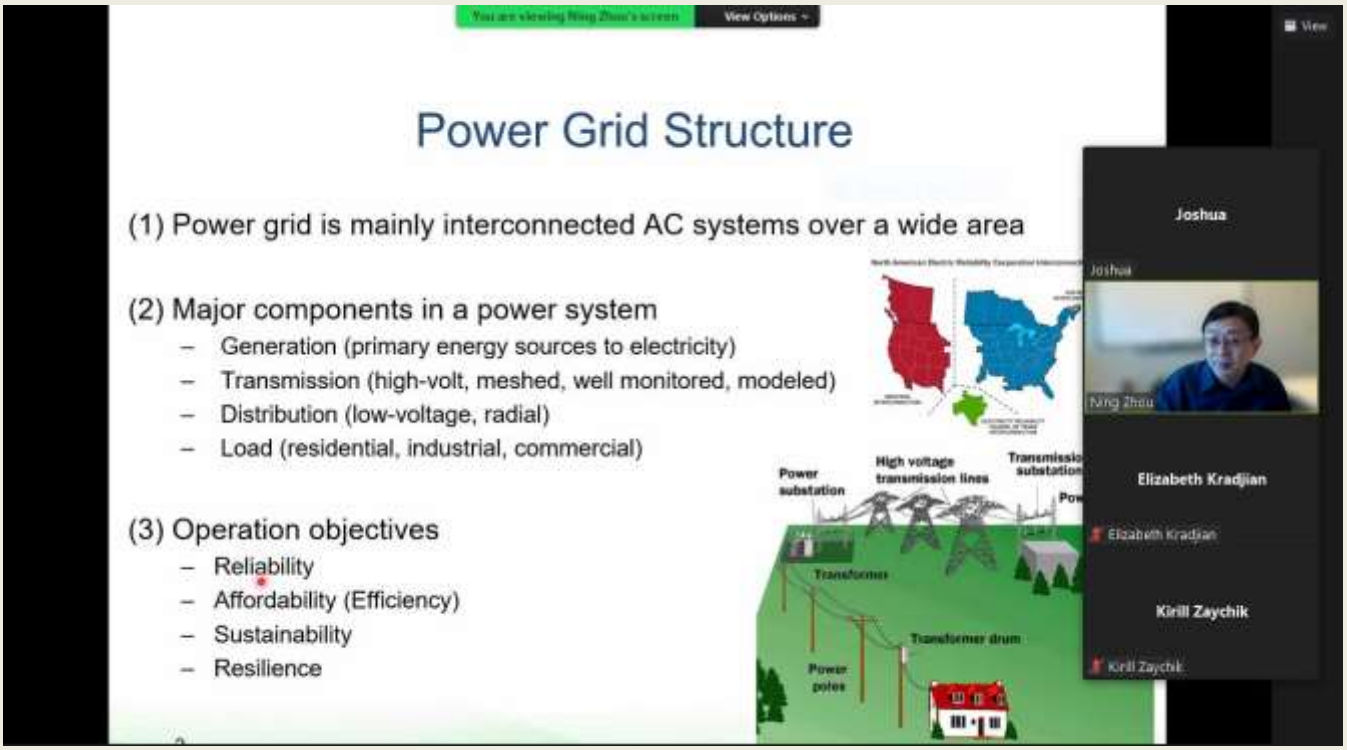
- Provide personalized experiential learning in industry sponsored labs to prepare students in electrical engineering with strong critical thinking and employability skills.
- Foster design thinking, creativity and cross-disciplinary research with highly qualified faculty to create innovators and entrepreneurs in the broad area of electrical engineering.
- Collaborate with national and international partners to provide innovative solutions to societal and industry challenges.

# Faculty Achievements

**1) VIT-Binghamton Joint Webinar Series:**

**Seminar 5**: Integrated Dynamic State Estimation of Marginally Observable States in Power Systems
**Speaker:** Dr. Ning Zhou, Associate Professor, Binghamton University

This lecture was the fifth in a joint webinar series between VIT University, Vellore and Binghamton University, USA. The speaker was Dr. Ning Zhou who is an Associate Professor at Binghamton University. Dr. Zhou presented his research on the topic "Integrated Dynamic State Estimation of Marginally Observable States in Power Systems". It was well attended by students, research scholars and faculty from both VIT and Binghamton University. The session was very interactive and there were many questions from Research scholars working in this area.



## 2) SELECT Fresher's Induction Program

The School level Fresher's Induction program was successfully conducted from 9th to 17th September, 2022 with excellent cooperation from the Faculty, Staff and Research Scholars. The program involved Technical Sessions, Hands-on Training and interaction with various Clubs and Chapters. During the 9 day program, the students had an enjoyable time as was evident in the good feedback that was received and

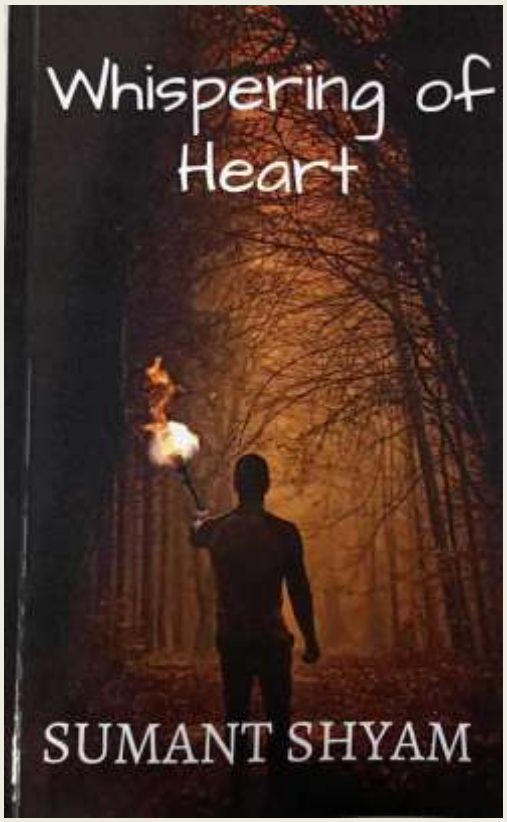




# Student Achievements

**1) "WHISPERING OF HEART "– Book written by Sumant Shyam (21BEI0043)**

Sumant Shyam (21BEI0043), a student of Electronics and Instrumentation Engineering has written and published a book titled "*WHISPERING OF HEART* ". It is a collection of 121 self-composed poems which he wrote in a span of 4 months. Each and every word in the book describes an incident in his life. The book was published by NOTION PRESS and is available on Amazon and Flipkart.




# Top Publications July 2022

1) Vamsi Krishna Reddy A.K., Venkata Lakshmi Narayana K., Investigation of a social group assisted differential evolution for the optimal PV parameter extraction of standard and modified diode models Energy Conversion and Management, **I.F.** 11.533

2) Shaik N.B., Benjapolakul W., Pedapati S.R., Bingi K., Thien Le N., Asdornwised W., Chaitusaney S., Recurrent neural network-based model for estimating the life condition of a dry gas pipeline, Process Safety and Environmental Protection, **I.F.** 7.926

3) Venkatasatish R., Dhanamjayulu C., Reinforcement learning based energy management systems and hydrogen refuelling stations for fuel cell electric vehicles: An overview, International Journal of Hydrogen Energy, **I.F.** 7.139

4) Dhanabalan S.S., R S., Madurakavi K., Thirumurugan A., M R., Avaninathan S.R., Carrasco M.F., Flexible compact system for wearable health monitoring applications, Computers and Electrical Engineering, **I.F.** 4.152

5) Saravanakumar T., Saravana kumar R., Design, Validation, and Economic Behavior of a Three-Phase Interleaved Step-Up DC–DC Converter for Electric Vehicle Application, Frontiers in Energy Research, **I.F.** 3.858

6) Sitharthan R., Madurakavi K., Jacob Raglend I., Palanisamy K., Belwin Edward J., Rajesh M., Dhanabalan S.S., Performance Enhancement of an Economically Operated DC Microgrid With a Neural Network–Based Tri-Port Converter for Rural Electrification, Frontiers in Energy Research, **I.F.** 3.858

7) Omar M.B., Ibrahim R., Mantri R., Chaudhary J., Selvaraj K.R., Bingi K., Smart Grid Stability Prediction Model Using Neural Networks to Handle Missing Inputs, Sensors, **I.F.** 3.847

8) Dhanamjayulu C., Rudravaram V., Sanjeevikumar P., Design and implementation of a novel 35-level inverter topology with reduced switch count, Electric Power Systems Research, **I.F.** 3.818

9) Divakar K., Kumar M.P., A Novel Efficacious PID Controller for Processes with Inverse Response and Time Delay, IEEE Access, **I.F.** 3.476

10) Natarajan S., Vairavasundaram S., Kotecha K., Indragandhi V., Palani S., Saini J.R., Ravi L., CD-SemMF: Cross-domain semantic relatedness based matrix factorization model enabled with linked open data for user cold start issue, IEEE Access, **I.F.** 3.476

11) Prasad D., Dhanamjayulu C., Reduced Voltage Stress Asymmetrical Multilevel Inverter With Optimal Components, IEEE Access, **I.F.** 3.476

## Top Publications
## July 2022

12) Aljafari B., Rameshkumar K., Indragandhi V., Ramachandran S., A Novel Single-Phase Shunt Active Power Filter with a Cost Function Based Model Predictive Current Control Technique, Energies, **I.F.** 3.252

13) Baranidharan M., Singh R.R., AI Energy Optimal Strategy on Variable Speed Drives for Multi-Parallel Aqua Pumping System, Energies, **I.F.** 3.252

14) Ramalingam S.P., Shanmugam P.K., Hardware Implementation of a Home Energy Management System Using Remodeled Sperm Swarm Optimization (RMSSO) Algorithm, Energies, **I.F.** 3.252

15) Mounica V., Obulesu Y.P., Hybrid Power Management Strategy with Fuel Cell, Battery, and Supercapacitor for Fuel Economy in Hybrid Electric Vehicle Application, Energies, **I.F.** 3.252

16) Girijaprasanna T., Dhanamjayulu C.
A Review on Different State of Battery Charge Estimation Techniques and Management Systems for EV Applications, Electronics (Switzerland) , **I.F.** 2.690

17) Matveev Y., Matveev A., Frolova O., Lyakso E., Ruban N., Automatic Speech Emotion Recognition of Younger School Age Children, Mathematics, **I.F.** 2.592

18) Shefali M., Fatima K., Uma Sathyakam P., Performance Analysis of CNT Bundle Interconnects in Various Low-k Dielectric Media, ECS Journal of Solid State Science and Technology, **I.F.** 2.483

19) Goyal J.K., Aggarwal S., Sachan A., Sahoo P.R., Ghosh S., Kamal S., An improved output feedback controller design for linear discrete-time systems using a matrix decomposition method, Asian Journal of Control, **I.F.** 2.444

18) Bharathidasan M., Indragandhi V., Design and implementations of high step-up non-isolated DC-DC converters for electric vehicles application, International Journal of Circuit Theory and Applications, **I.F.** 2.378

20) Santosh Kumar Reddy P.L., Obulesu Y.P., Design and Development of a New Transformerless Multi-port DC–DC Boost Converter, Journal of Electrical Engineering and Technology, **I.F.** 1.528

21) Job M.S., Bhateja P.H., Gupta M., Bingi K., Prusty B.R., Fractional Rectified Linear Unit Activation Function and Its Variants, Mathematical Problems in Engineering, **I.F.** 1.430

22) Bawdekar A.A., Prusty B.R., Selection of Stationarity Tests for Time Series Forecasting Using Reliability Analysis, Mathematical Problems in Engineering, **I.F.** 1.430

# Top Publications
# August 2022

1) Thomas P., Shanmugam P.K., A review on mathematical models of electric vehicle for energy management and grid integration studies, Journal of Energy Storage, **I.F.** 8.907

2) Dutta N., Kaliannan P., Shanmugam P., Application of machine learning for inter turn fault detection in pumping system,Scientific Reports, **I.F.** 4.996

3) Dhanamjayulu C., Sanjeevikumar P., Muyeen S.M., A structural overview on transformer and transformer-less multi level inverters for renewable energy applications, Energy Reports, **I.F.** 4.937

4) Bharathidasan M., Indragandhi V., Suresh V., Jasiński M., Leonowicz Z., A review on electric vehicle: Technologies, energy trading, and cyber security, Energy Reports, **I.F.** 4.937

5) Venugopal K., Shanmugasundaram V., Effective Modeling and Numerical Simulation of Triboelectric Nanogenerator for Blood Pressure Measurement Based on Wrist Pulse Signal Using Comsol Multiphysics Software, ACS Omega, **I.F.** 4.132

6) Parthiban R., Ponnambalam P., An Enhancement of the Solar Panel Efficiency: A Comprehensive Review, Frontiers in Energy Research, **I.F.** 3.858

7) Prasad D., Dhanamjayulu C., Solar PV-Fed Multilevel Inverter with Series Compensator for Power Quality Improvement in Grid-Connected Systems, IEEE Access, **I.F.** 3.476

8) Singh R.R., Banerjee S., Manikandan R., Kotecha K., Indragandhi V., Vairavasundaram S., Intelligent IoT Wind Emulation System Based on Real-Time Data Fetching Approach, IEEE Access, **I.F.** 3.476

9) Pandurangan R., Kaliannan P., Shanmugam P., Dynamic Online Grid Impedance Estimation and its Effects on DC Capacitor Lifetime in Variable Frequency Drive, IEEE Access, **I.F.** 3.476

10) Gopinathan N., Shanmugam P.K., Energy Anxiety in Decentralized Electricity Markets: A Critical Review on EV Models, Energies, **I.F.** 3.252

11) Bairabathina S., Balamurugan S., Design and Validation of a SEPIC-Based Novel Multi-Input DC-DC Converter for Grid-Independent Hybrid Electric Vehicles, Energies, **I.F.** 3.252

12) Aljafari B., Ramu S.K., Devarajan G., Vairavasundaram I., Integration of Photovoltaic-Based Transformerless High Step-Up Dual-Output–Dual-Input Converter with Low Power Losses for Energy, Storage Applications, Energies, **I.F.** 3.252

13) Kondaiah V.Y., Saravanan B., Short-Term Load Forecasting with a Novel Wavelet-Based Ensemble Method, Energies, **I.F.** 3.252

## Top Publications September 2022

1) Ramkumar A., Ramakrishnan M., Performance improvement of thermoelectric generator by drooping the cool side temperature with thermacool 0.3M coating, Case Studies in Thermal Engineering, **I.F.** 6.268

2) Laarabi B., Rajasekar N., Gopi N.P., Barhdadi A., Characterization of dust particles in South India and investigation on soiling image analysis for photovoltaic application, Environmental Science and Pollution Research **I.F.** 5.190

3) Velamuri S., Kantipudi M.P., Sitharthan R., Kanakadhurga D., Prabaharan N., Rajkumar A., A Q-learning based electric vehicle scheduling technique in a distribution system for power loss curtailment Sustainable Computing:, Informatics and Systems **I.F.** 4.923

4) Bharathidasan M., Indragandhi V., Implementation of radial basis function network-based maximum power point tracking for a PV-fed high step-up converter, Frontiers in Energy Research **I.F.** 3.858

5) Prasad D., Dhanamjayulu C., Solar PV integrated dynamic voltage restorer for enhancing the power quality under distorted grid conditions, Electric Power Systems Research**, I.F**. 3.818

6) M S., K S., Prasanth N., A novel framework for deployment of CNN models using post-training quantization on microcontroller Microprocessors and Microsystems**, I.F.** 3.503

7) Pangedaiah B., Santosh Kumar Reddy P.L., Obulesu Y.P., Venkata Reddy K., Alghaythi M.L., A Robust Passive Islanding Detection Technique With Zero-Non-Detection Zone For Inverter-Interfaced Distributed Generation, IEEE Access, **I.F.** 3.476

8) Reddy A.K.V.K., Narayana, K.V.L. Symbiotic Learning Grey Wolf Optimizer for Engineering and Power Flow Optimization Problems, IEEE Access**, I.F.** 3.476

9) Aljafari B., Loganathan A.K., Vairavasundaram I., Ramachadran S., Nagarajan A.P., Analysis of a Photovoltaic System Based on a Highly Efficient Single-Phase Transformerless Inverter Energies, **I.F.** 3.252

10) Priya M., Ponnambalam P., Circulating Current Control of Phase-Shifted Carrier-Based Modular Multilevel Converter Fed by Fuel Cell Employing Fuzzy Logic Control Technique, Energies**, I.F.** 3.252

11) Aljafari B., Devarajan G., Arumugam S., Vairavasundaram I., Design and Implementation of Hybrid PV/Battery-Based Improved Single-Ended Primary-Inductor Converter-Fed Hybrid Electric Vehicle, International Transactions on Electrical Energy Systems**, I.F.** 2.639

## Top Publications
## September 2022

12) Vasantharaj S., Indragandhi V., Implementation of hardware-in-loop for DClink voltage balancing in hybrid ac/dc microgrid using interlinking converter, International Journal of Circuit Theory and Applications**, I.F.** 2.378

13) Ushashree P., Kumar K.S., Power System Reconfiguration in Distribution System for Loss Minimization Using Optimization Techniques: A Review, Wireless Personal Communications, **I.F.** 2.017

14) Santosh Kumar Reddy P.L., Obulesu Y.P., A non-cascading DC/DC quadratic boost converter with high voltage gain for PV applications, International Journal of Electronics, **I.F.** 1.457

# Editorial Committee

**Prof. Joshua Reddipogu, Assistant Professor Sr.**