Dr. Lakshmi Srinivas Vedantham

Asst. Professor, Department of Electrical Engineering,
Indian Institute of Technology (Indian School of Mines) Dhanbad.
Office : Room No. 122, New Academic Complex, IIT (ISM) Dhanbad.
Email(s) : vlsrinivas@iitism.ac.in, vlsrinivas@iitdalumni.com

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Principal Interests

AC/DC Microgrid, Renewable Power Integration, Power System Stability and Dynamics, Electric Machines and Drives, Virtual Power Plant, Electric Vehicle Drive Systems, Battery Management System, Energy Management, Machine Learning, Research & Technical Writing.

Academic Background

Ph.D. Electrical Engineering 2015-2020
Indian Institute of Technology Delhi, Institute of Eminence, Govt. of India
- **Dissertation title :** Intelligent Control of Grid Interfaced and Off-Grid Solar PV Systems.
- **Recognition :** Recipient of POSOCO Power System Award (PPSA-2022).
- **Doctoral Presentation Date :** Date : 24th Jan 2020.
- **Merit :** 9.00 CGPA, Highest merit grade, Distinction.
- *After one year of M.Tech in Power Systems, the degree is converted into Ph.D. in Jun 2016.

B.Tech. Electrical Engineering 2011-2015
Indian Institute of Technology (BHU) Varanasi, Institute of Eminence, Govt. of India
- **Dissertation Title :** Moving window prony-analysis for power system disturbances.
- **Merit :** 8.26 CGPA, Highest merit grade, Distinction.

Board of Intermediate Education, A.P. 2009- 2011
- **Merit :** 95.4%, Highest merit grade, Distinction. *(Mathematics, Physics and Chemistry)*

Board of Secondary Education, A.P. 2009-2011
- **Merit :** 92%, Highest merit grade, Distinction.

Work Experience

Asst. Professor, Department of Electrical Engineering 2021-Present
Indian Institute of Technology (ISM) Dhanbad, Institute of Eminence, Govt. of India.

Postdoctoral Research Associate, School of Engineering 2020-2021
Cardiff University, Russell Group, United Kingdom
- **Phase-1 :** Review of ICT Infrastructure Supporting Cyber Physical Smart Local Energy Systems in the UK.
- **Phase-2 :** Parameter Identification of Distribution Network with Smart Meters and μ-PMUs.
- **Phase-3 :** State estimation of heat and electric network with SCADA and AMI data.

Projects & Funding

- ***Design and Analysis of Axial Flux Machine Technology for EV Motor Drives***
  Role : **PI**, R&D Grant of **INR 33,00,000**, SRG/2023/000410 from SERB, DST, Govt. of India, Period : 2023-2025
- ***Power Electronics Research Facilities for Modernization of Mining Infrastructure***
  Role : **Co-PI**, R&D Grant of **INR 2,04,00,000**, SR/FST/ET-II/2023/1230, Govt. of India, Period : 2023-2027
- ***Establishment of NSDC Skill Training Center of Excellence in Collaboration with ReNew Power***
  Role : **Head of Center & Coordinator**, Consultancy Grant **INR 1,00,00,000**, Period : 2024-2025
- ***Ultrabattery Technology for Renewable Intensive Electric Networks***
  Role : **PI**, R&D Grant of **INR 14,00,000** from SLE- Institute Fund of IIT (ISM) Dhanbad, Period : 2022-2025
- ***Use of Generative AI for Power Quality Management***
  Role : **Co-PI**, R&D Grant of **INR 8,67,300** from Capgemini Technology Servies India Limited, Period : 2025

Project Contributions

— *Projects Contributed as a Research Associate at Cardiff University* 2020-2021
Contribution to UKRI - smart local energy systems current landscape in Energy sector in the UK in order to inform policy makers to meet the UK Government 2050 carbon targets.
— Energy/REV -Next wave of local energy systems in a whole systems context, Funded by the EPSRC and University of Strathclyde.
— Supergen Energy Networks Hub 2018, Funded by EPSRC, via University of Newcastle.

— *Projects Contributed as a Researcher at IIT Delhi* 2015-2020
— UK-India Clean Energy Research Institute (UK-I CERI)
— Solar Energy Research Initiative (SERI)
— Joint Indo-US collaborative project SERI-II
— Joint UK-India Clean Energy Centre (JUICE)
— Fund for Improvement of Science and Technology (FIST)
— J. C. Bose fellowship, Government of India

— *Mini Projects* 2014-2015
Moving Window Analysis for Power System Disturbance.
Design, Simulation and Optimization of Substation Transformer Rating.

Awards/ Recognitions

— ***ISSS Young Scientist Award*** 2024
Recognition of work done in the field of renewable power integration and power electronic drives for electric vehicles.

— ***POSOCO Power System Award (PPSA-2021)*** 2021
Recognition from Power Grid Corporation of India Limited and Foundation for Innovation and Technology Transfer, Indian Institute of Technology Delhi 2021 (INR. 1,00,000).

— ***Distinction in Doctoral Research Award*** 2022
Awarded distinction in doctoral research for the year 2020, upon unanimous recommendation from the PhD Thesis Examiners.

— ***Research Excellence Travel Award*** 2019
Recognition from Indian Institute of Technology Delhi (INR. 1,50,000).

— ***International Research Grant*** 2019
Recognition from Indian Institute of Technology Delhi (INR. 1,50,000).

— ***National Research Grant*** 2015-2020
Recognition from Indian Institute of Technology Delhi (INR. 20,000 pa for five years).

— ***Ministry of Education Fellowship*** 2015-2020
Research Fellowship from Government of India (INR. 42,500 pm for five years).

Patents

6. B. Singh, S. Mishra, P. Shah and V. L. Srinivas, "Optimization of leakage current in a solar photovoltaic system and method thereof," *Indian Patent, Reference No. 202111002117*, Granted on Apr. 22, 2024, Status : **Granted**.
5. B. Singh, S. Mishra, V. L. Srinivas and P. Shah, "Ride-through operation of grid interfaced solar PV system under grid-side abnormalities", *Indian Patent, Reference No. 201911025465*, Granted on Mar. 21, 2024, Status : **Granted**.
4. B. Singh, S. Mishra, P. Shah and V. L. Srinivas, "A flexibly operated virtual synchronous machine for synchronizing three phase inverters with a grid", *Indian Patent, Reference No. 201911042199*, Granted on Mar. 05, 2024, Status : **Granted**.
3. K. C. Jana, G. Shankar, V. L. Srinivas, K. R. Khan, S. Kumar and R. K. Saket, "A system for voltage stabilization control with hybrid renewable power sources in DC microgrid", *Indian Patent, Reference No. 202431073196*, Filed on Sept. 27, 2024, Status : **Filed**.
2. B. Singh, S. Mishra, V. L. Srinivas and P. Shah, "Ultra-battery energy storage system for load frequency control in a multi-area power network", *Indian Patent, Reference No. 201911049727*, Granted on Dec. 26, 2023, Status : **Granted**.
1. B. Singh, S. Mishra, V. L. Srinivas and P. Shah, "A self-synchronizing microgrid system and method thereof", *Indian Patent, Reference No. 201811043809*, Granted on Oct. 23, 2023, Status : **Granted**.

Invited Talks

— *Talk on* ***"Role of Renewable Energy in Mining"*** 2025
Technical Talk, Refresher Training Program for CIL Executives, IIT(ISM) Dhanbad.

— *Talk on* ***"Connecting the Home Grid to the Public Grid : A Viable Solution through Virtual Synchronous Machines"*** 2024
Technical Talk, IEEE PELS/IAS/PES Joint Chapter, IEEE Vizag Bay Section.

— *Talk on* ***"Advances in Electrical Vehicle Propulsion Drives, Control and Battery Management Systems"*** 2022
High-End Workshop on 'Intelligent Mobile Hydraulics and Advanced Automation for Improved Motion Control of Off-highway Vehicles' at IIT(ISM) Dhanbad, sponsored by SERB (AVS), DST, Govt. of India.

— *Talk on* ***"Role of EVs in virtual power plant's ancillary service to the grid"*** 2022
AICTE-QIP sponsored Short Term Course conducted at NITTTR Chandigarh on 'Power Quality Issues in Grid Connected Electric Vehicles'.

— *Talk on* ***"AI/IoT Application in Power System"*** 2022
AICTE-MRSPTU sponsored Online Faculty Development Programme on IoT & Artificial Intelligence in Industry 4.0.

— *Talk on* ***"Virtual Synchronous Generators for Future Renewable Power Integration"*** 2022
Short term course conducted at NIT, Uttarakhand on 'Stability Issues, Challenges and Solutions in Renewable Integrated Power Systems'.

— *Talk on* ***"Challenges and Opportunities in Solar Energy Conversion System"*** 2022
Short term course conducted at MANIT, Bhopal on 'IoT and Intelligent Techniques for Electrical Engineering'.

Workshops

— ***Advances in Electric Vehicle Drive Systems, Charging Infrastructure and Battery Management Systems : A Step Towards Sustainable Transport Systems*** 2022
Organized with Electric Mobility Club of Naresh Vashisht Centre for Tinkering & Innovation (NVCTI) at IIT (ISM) Dhanbad, India.

Technical Skills

Simulation Skills

— Matlab Simulink — Open-DSS — DigSilent PowerFactory
— PLECS — PSS/E — PSCAD

Programming Skills

— Matlab coding — Python — LaTex
— Matlab GUI — MatPower

Real-time Controllers

— dSPACE — OPAL-RT — Typhoon-HIL

Management Skills

— Conference/project meeting coordination
— Preparing reports/deliverables, budget management, progress monitoring, risk assessment

Journal Articles

See also my google scholar page.

15. S. B. Mitikiri, V. L. Srinivas and M. Pal, Anomaly Detection of Adversarial Cyber Attacks on Electric Vehicle Charging Stations, *e-Prime - Advances in Electrical Engineering, Electronics and Energy*, 100911, ISSN 2772-6711, 2025. (https ://doi.org/10.1016/j.prime.2025.100911)
14. K. R. Khan, S. Kumar, V. L. Srinivas, R. K. Saket, K.C. Jana and G. Shankar, Voltage Stabilization Control with Hybrid Renewable Power Sources in DC Microgrid, *IEEE Transactions on Industry Applications*, Early Access. (doi : 10.1109/TIA.2024.3520087)
13. D. Dwivedi, S. B. Mitikiri, K. Babu, P. K. Yemula, V. L. Srinivas, P. Chakraborty, and M. Pal, Technological advancements and innovations in enhancing resilience of electrical distribution systems, *International Journal of Critical Infrastructure Protection*,Volume 46, no. 100696, 2024. (doi : 10.1016/j.ijcip.2024.100696)
12. V. L. Srinivas, J. Wu, B.Singh and S. Mishra, Hybrid state-estimation in combined heat and electric network using SCADA and AMI measurements, *International Journal of Electrical Power & Energy Systems*, vol. 156, no. 109726, February 2024. (doi : 10.1016/j.ijepes.2023.109726)
11. V. L. Srinivas and J. Wu, Topology and Parameter Identification of Distribution Network Using Smart Meter and micro-PMU Measurements, *IEEE Transactions on Instrumentation and Measurement*, vol. 71, no. 9004114, pp. 1-14, May 2022. (doi : 10.1109/TIM.2022.3175043)

10. V. L. Srinivas, Y. Zhou, J. Wu, Information and communications technology infrastructure supporting smart local energy systems: A review, *IET Energy System Integration*, pp. 1-13, March 2022. (doi : 10.1049/esi2.12063)
9. V. L. Srinivas, B. Singh and S. Mishra, Enhanced Power Quality PV Inverter With Leakage Current Suppression for Three-Phase SECS, *IEEE Transactions on Industrial Electronics*, vol. 69, no. 6, pp. 5756-5767, June 2022. (doi : 10.1109/TIE.2021.3090698)
8. V. L. Srinivas, B. Singh, S. Mishra and L. Xu, Harmonic Voltage Control in Distributed Generation Systems Using Optimal Switching Vector Strategy, *IEEE Systems Journal*, vol. 16, no. 2, pp. 1861-1872, June 2022. (doi : 10.1109/JSYST.2021.3070498)
7. V. L. Srinivas, S. Kumar, B. Singh and S. Mishra, A Normalized Adaptive Filter for Enhanced Optimal Operation of Grid-Interfaced PV System, *IEEE Transactions on Industry Applications*, vol. 57, no. 2, pp. 1715-1724, March-April 2021. (doi : 10.1109/TIA.2020.3046171)
6. V. L. Srinivas, B. Singh and S. Mishra, Self-Synchronizing VSM With Seamless Operation During Unintentional Islanding Events, *IEEE Transactions on Industrial Informatics*, vol. 16, no. 9, pp. 5680-5690, September 2020.(doi : 10.1109/TII.2019.2958735)
5. V. L. Srinivas, B. Singh and S. Mishra, Seamless Mode Transition Technique for Virtual Synchronous Generators and Method Thereof, *IEEE Transactions on Industrial Informatics*, vol. 16, no. 8, pp. 5254-5266, Aug. 2020.(doi : 10.1109/TII.2019.2954593)
4. V. L. Srinivas, B. Singh and S. Mishra, Fault Ride-Through Strategy for Two-Stage Grid-Connected Photovoltaic System Enabling Load Compensation Capabilities, *IEEE Transactions on Industrial Electronics*, vol. 66, no. 11, pp. 8913-8924, Nov. 2019. (doi : 10.1109/TIE.2019.2899546)
3. V. L. Srinivas, S. Kumar, B. Singh and S. Mishra, A Multifunctional GPV System Using Adaptive Observer Based Harmonic Cancellation Technique, *IEEE Transactions on Industrial Electronics*, vol. 65, no. 2, pp. 1347-1357, Feb. 2018. (doi : 10.1109/TIE.2017.2733493)
2. V. L. Srinivas, S. Kumar, B. Singh and S. Mishra, Partially Decoupled Adaptive Filter Based Multifunctional Three-Phase GPV System, *IEEE Transactions on Sustainable Energy*, vol. 9, no. 1, pp. 311-320, Jan. 2018. (doi : 10.1109/TSTE.2017.2731793)
1. V. L. Srinivas, S. Kumar, B. Singh and S. Mishra, Fuzzy logic gain-tuned adaptive second-order GI-based multi-objective control for reliable operation of grid-interfaced photovoltaic system, *IET Generation, Transmission & Distribution*, vol. 12, no. 5, pp. 1153-1163, 2018. (doi : 10.1049/iet-gtd.2017.0958)

Conference Contributions

16. V. Khemka, A. P. Sagar and V. L. Srinivas, "Fuzzy Logic Control for Regenerative Braking Energy Management in a Battery-Supercapacitor based Electric Vehicle", *International Youth Conference on Energy (IYCE)*, pp. 1-6, Colmar, France, 2024.
15. K. R. Khan, V. L. Srinivas, S. Kumar, K. C. Jana, R. Kumari and G. Shankar, "Power Management and Control Strategy for DC Microgrid in Standalone and Grid Connected Mode," *in Proc. IEEE International Conference on Cyber Physical Systems, Power Electronics and Electric Vehicles (ICPEEV)*, Hyderabad, India, 2023.
14. S. Paul, K. Chatterjee, S. Bhowmik, G. Shankar, S. Kumar and V. L. Srinivas, "Grid-Connected PV System Under Partial Shading Condition Using Flower Pollination Algorithm," *in Proc. IEEE International Conference on Cyber Physical Systems, Power Electronics and Electric Vehicles (ICPEEV)*, Hyderabad, India, 2023.
13. S. Kumar, G. Shankar, K. R. Khan, K. C. Jana and V. L. Srinivas, "Hybrid Renewable and Battery Energy Sources with Electric Vehicles in Islanded DC Micro-Grid," *in Proc. IEEE International Conference on Cyber Physical Systems, Power Electronics and Electric Vehicles (ICPEEV)*, Hyderabad, India, 2023.
12. S. Bhowmik, G. Shankar, S. Paul, K. Chatterjee, S. Kumar and V. L. Srinivas, "Maximum Power Point Tracking of Grid Connected PV System Under Partial Shading Condition Using Grey Wolf Algorithm," *in Proc. IEEE International Conference on Cyber Physical Systems, Power Electronics and Electric Vehicles (ICPEEV)*, Hyderabad, India, 2023.
11. H. Dakshinamoorthy and V. L. Srinivas, "Estimating Battery Temperature in Dynamic Driving Conditions Using Physics Informed Neural Networks," *in Proc. IEEE IAS Global Conference on Emerging Technologies (GlobConET)*, London, United Kingdom, 2023.
10. K. R. Khan, S. Kumar, V. L. Srinivas, R. K. Saket, K. C. Jana and G. Shankar, "Voltage Stabilization Control with Hybrid Renewable Power Sources in DC Microgrid," *in Proc. IEEE IAS Global Conference on Emerging Technologies (GlobConET)*, London, United Kingdom, 2023.

9. S. Kumar, K. R. Khan, V. L. Srinivas, G. Shankar, R. K. Saket and K. C. Jana, "Electric Vehicle Fast Charging Integrated with Hybrid Renewable Sources for V2G and G2V Operation," *in Proc. IEEE IAS Global Conference on Emerging Technologies (GlobConET)*, London, United Kingdom, 2023.
8. A. Ranjan, D. V. Bhaskar and V. L. Srinivas, "A Novel Control Approach for Grid-Integrated DFIG Driven Wind Energy Systems," *in Proc. IEEE IAS Global Conference on Emerging Technologies (GlobConET)*, London, United Kingdom, 2023.
7. V. L. Srinivas, B. Singh and S. Mishra, "Finite control-set model predictive control for leakage current suppression in grid interfaced solar PV system", *in Proc. IEEE International Conference on Computing Communication and Automation*, Delhi, India, pp. 675-680, 2020.
6. V. L. Srinivas, B. Singh and S. Mishra, "Finite control-set model predictive control for leakage current suppression in grid interfaced solar PV system", *in Proc. IEEE International Conference on Computing Communication and Automation*, Delhi, India, pp. 675-680, 2020.
5. V. L. Srinivas, B. Singh and S. Mishra, "Finite control-set model predictive control for leakage current suppression in grid interfaced solar PV system", *in Proc. IEEE International Conference on Computing Communication and Automation*, Delhi, India, pp. 675-680, 2020.
4. V. L. Srinivas, B. Singh and S. Mishra, "Adaptive generalized predictive control scheme for single phase GPV system", *in Proc. IEEE International Conference on Universal Village (UV)*, Boston, MA, USA, pp. 1-6, 2018.
3. V. L. Srinivas, B. Singh and S. Mishra, "Predictive optimal switching vector controller based microgrid enabling switching frequency constraint", *in Proc. IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IIT Madras, Chennai, India, pp. 1-6, 2018.
2. V. L. Srinivas, S. Kumar, B. Singh and S. Mishra, "A normalized adaptive filter for enhanced optimal operation of grid interfaced PV system", *in Proc. IEEE International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES)*, Delhi, India, pp. 522-527, 2018.
1. V. L. Srinivas, S. Kumar, B. Singh and S. Mishra, "RLMMN adaptive filtering based control scheme for multi-objective GPV system", *in Proc. IEEE International Conference on Computer Applications In Electrical Engineering-Recent Advances (CERA)*, IIT Roorkee, pp. 556-561, 2017.

Poster Presentation

— *Clean Energy for Sustainable Economy and Environment* 2018
Industry day at Indian Institute of Technology Delhi (IITD), India.

— *A Multifunctional PV-Inverter for Power Quality Improvement in Distribution Grid* 2017
Poster presentation at Indian Institute of Technology Delhi (IITD), India.

Book Chapters & Policy Reports

— V. L. Srinivas, N. Kumar,"Infrastructures for Wind Energy-Based Power Generation System - Modelling and Control", Power Quality : Infrastructures and Control. Singapore : *Springer Nature Singapore*, pp. 1-29, 2023.

— V. L. Srinivas, Y. Zhou and J. Wu, "ICT Infrastructure Supporting Smart Local Energy Systems", *Policy Briefing, Energy-REV Research Consortium, Prospering for Energy Revolution (PFER)*, UK, 2021.

Professional Activities

— ***Faculty In-Charge (FIC)*** 2022-Present
Electric Mobility Club at Naresh Vashisht Centre for Tinkering & Innovation (NVCTI), IIT (ISM) Dhanbad.

— ***Research Editor*** 2022-Present
Frontiers In Smart Grids (Smart Grid Technologies).

— ***Guest Editor*** 2022-Present
Energies : Advances in Application of Power Electronics to Utility Systems.

— ***Visiting Researcher*** 2022-Present
1. ReNew Power Private Limited, Renewable energy independent power producers, India.
2. Drone Power Private Limited, Pioneer EV Charger Manufacturers, India.

Research Expertise

Network Identification 2021

Development of method for identifying the distribution network topology and the line parameters using the measurements data from smart meters and PMUs, tested against standard IEEE-13 bus unbalanced feeder, IEEE-33 bus, IEEE-123 bus networks.

- Analysis of the impact of various measurement errors and system events.
- Analysis of critical points for installation of micro-PMU Measurements.
- Data-driven approach with iterative probabilistic (unscented Kalman filter based) and deterministic (Newton-Raphson based) methods.

Smart Local Energy Systems (SLES) 2021

Development of an iterative approach for investigating the optimal mix of technologies in electric energy and heat energy considering the interactions between these sectors, validated against Barry Island case study (UK).

- Review of the ICT infrastructure of SLES in the UK.
- Analysis of system observability SCADA and AMI measurements in power distribution systems and district heat systems.
- Hybrid deep neural network and the model-based approach for state estimation in SLES.

Electric-Vehicle (EV) and Battery Management System (BMS) 2021

Development of model-based EV drive systems, efficient and reliable battery pack design.

- Development, testing and comparison of PMSM, Induction motor and SyRM based EV drive systems.
- Closed loop bidirectional EV charger design.
- Kalman filter based state-of-charge and state-of-health estimation in EV BMS.

UBES and SMES Technology 2020

Development of ultrabattery energy storage (UBES) and the super magnetic energy storage (SMES) systems for load frequency control and renewable-intensive grid stabilization.

- Supervisory control for generation of appropriate power command for UBES/SMES for mitigation of inter-area oscillations.
- UBES/SMES applications for frequency control in renewable intensive power networks.

Virtual Synchronous Machine (VSM) 2019

An industry-level solution for providing virtual inertia in renewable dominated power network, is introduced capable to work under islanded and grid-connected mode.

- Self-synchronizing system without any phase locked loop.
- Seamless transition between 'grid-connected' and 'off-grid' operational modes.
- Automatic islanding detection (adhering IEEE-1547 standard) and eigen-value stability analysis.
- Robust system with respect to micro-grid communication delays and harmonic currents/voltages.

Cyber-Physical Microgrids 2019

Development of sensor-malfuntion and cyber-attack resilient renewable power network.

- Identify the attack signals from the receiver data and provides resiliency to the system.
- Analysis with catastrophic failure of the current sensors.

PV Leakage Current Suppression 2018

Issues with absence of galvanic isolation in grid-connected PV plants are tackled.

- Leakage current alleviation as per VDE-00126 standard.
- Development of different converter topologies and gating, to eliminate the common mode voltage and improve the power quality.
- Novel R-L filter and its design for system without any additional semiconductor switch.

Low-Voltage Ride-Through (LVRT) 2017

Development of ride-through strategy of the solar/wind energy conversion system, to comply with UK grid codes and the IEEE-1547 standard.

- Avoids the tripping of the grid-connected converter under faults in the grid-side network.
- Provides dynamic reactive power as per the country grid code.
- Indirect current control for grid frequency support and harmonic elimination.

Unified Power Quality Conditioner (UPQC) 2016

Development of reduced sensor based PV fed UPQC system for power quality improvement under various abnormal conditions in grid side and load side network.

- Power quality issues of grid currents balancing, harmonics elimination, compensation of reactive power, grid voltage sag and voltage swell mitigation.
- Adheres to the revised IEEE-519 and IEEE-1159 stds. under unbalanced/harmonic voltages/loads.

Damping control of DFIG based Wind Farm 2016

Development of a damping controller with adaptive dynamic programming approach for a doubly fed induction generator (DFIG) based wind energy conversion system.

- Model-free full-state feedback damping controller design.
- Effective stability improvement under weak grid condition.

Teaching

- ***Course Instructor IIT (ISM) Dhanbad***
  - **Electric and Hybrid Electric Vehicles** (70-80 students group- 39 hours/semester for B. Tech., M. Tech., Ph. D.).
  - **Renewable Energy and Energy Audit** (70-80 students group- 42 hours/semester for B. Tech., M. Tech., Ph. D.).
  - **Battery Management Systems** (15-30 students group- 39 hours/semester for B. Tech., M. Tech., Ph. D.).
  - **Power Quality** (10-15 students group - 39 hours/semester for M. Tech., Ph. D.).
  - **Basics of Electrical Engineering** (130-150 students - 39 hours/semester for B. Tech.).
  - **Power System Protection and Switchgear Lab** (160-170 students - 26 hours/semester).
  - **Digital and Analog Electronics Lab** (130-140 students - 26 hours/semester).
  - *Great student feedback letter of appreciation.*
- ***Graduate Teaching at IIT Delhi***
  - Lab demos in 4 courses (groups of 30) : i) Power Electronics and Machines Lab (M Tech, 45 hours/sem.), ii) Power System Protection Lab (B Tech, 30 hours/sem.), and iii) Basic Electronics Lab (B Tech, 45 hours/sem.).
  - Theory courses : Basic power electronics (B Tech) and Power system dynamics (M tech).
  - Tutorials in 2 courses (groups of up to 50) : Basic Electronics (B Tech), Power System Analysis (M Tech)
- ***New Courses and Laboratory developed at IIT (ISM) Dhanbad***
  - *EEC521* : Battery Management Systems.
  - *EED517* : Multivariable Control and Estimation
  - *Inverter-fed Microgrid for Advanced Power Systems Laboratory* : Study of virtual synchronous generators and their applications in renewable power sourced microgrids (M Tech)
- ***Proficient Courses***
  - Power System Analysis
  - Renewable Energy Systems
  - Smart Grid Technology
  - Adaptive and Learning Control
  - Open-DSS with MATLAB
  - Power System Dynamics
  - Electric Machines
  - Control System Engineering
  - Power Electronics
  - Scientific Writing for Research

Internships

- *Power System Operation Corporation (POSOCO), Power Grid Limited* Bangalore, 2014
  - Study of load dispatch activities of southern region electrical grid, and its data flow.
  - Examination of power flow charts of various southern regions
  - Analysis of power system disturbances like faults, load losses and generator tripping, using PMU and RTU data - Signal oscillation parameter estimation
- *Bharat Heavy Electricals Limited (B. H. E. L)* Hyderabad, 2013

  Examination of stage wise manufacturing process of turbo generators using vacuum pressure impregnation process : 2-pole cylindrical rotor turbo generators, directly driven by steam turbine running at rated speed (3000 rpm).

Reviewer Profile

- IEEE Trans. Sustainable Energy
- IEEE Trans. Power Electronics
- IEEE Trans. Industrial Electronics
- IEEE J. Emer. Sel. Pow. Electron.
- IEEE Trans. Power Systems
- IEEE Trans. Industrial Informatics
- IEEE Trans. Industry Applications
- Ind. National Acad. Engg. (INAE)
- IET Gen. Trans. Distr.
- IET Power Electronics
- IETE Journal of Research
- IEEE internat. conferences

And many more journals, **ORCiD id : 0000-0002-6376-8602**

Professional Membership

- IEEE Member, ID : 94268066
- IEEE Industry Application Society
- IEEE Industrial Electronics Society
- IEEE Power and Energy Society
- IEEE Young Professionals
- CIGRE UK NGN Member, ID : 319950043

Other Activities

- Talk on 'Generalized Predictive Control for single phase PV Inverter' at Massachusetts Institute of Technology (MIT), USA, 2019.
- Talk on 'Advantages of Predictive Controller for Optimal Switching of RES Inverters' at Indian Institute of Technology Madras (IITM), India, 2018.
- Talk on 'Power Quality Improvement of the Distribution Grid' at Indian Institute of Technology Roorkee (IITR), India, 2017.
- Talk on 'Finite control-set model predictive control for leakage current suppression in grid interfaced solar PV system', at NCR New Delhi, India, 2020.
- Secured All India Rank 2743 (<0.5% of total candidates) and cracked Joint Entrance Examination (JEE) for Indian Institutes of Technology, 2011 (2743 out of about 5 lakh candidates).
- Secured All India Rank 673 (l<0.5% of total candidates) in Graduate Aptitude Test Engineering (GATE) in Electrical Engineering stream, 2015 (673 out of about 1.25 lakh candidates).
- Secured a position in national level paper presentation competition, in the topic 'Power transmission capacity upgrade of overhead lines' in Prastuti-2013, held at Indian Institute of Technology (BHU), Varanasi.
- Secured scholarship in CAT My-TRIX exam and group discussion held by management services group, 2012

Student Supervision

- *Ph.D.* — 4-Ongoing
- *M.Tech./Interns* — 4-Completed, 2-Ongoing

Personal Information

Proficient Languages

- *English, Full professional proficiency*
- *Hindi, Native proficiency*
- *Telugu, Native proficiency*

Useful links

linkedin.com/in/lakshmi-srinivas-vedantham-2b4406159/
https://scholar.google.com/citations, *sites.google.com/view/dr-v-lakshmi-srinivas*
iitism.irins.org/profile/337094
cardiff.ac.uk/people/view/2502568-Srinivas-vedantham-lakshmi
@SrinivasVL

Administrative Responsibilities

- *Head of Center, Center of Excellence with ReNew Foundation, NSDC skill training center at IIT(ISM) Dhanbad.*
- *Department Post Graduate Committee (DPGC) Member, Electrical Engineering, IIT (ISM) Dhanbad*
- *Committee Member for Vision 2035, Electrical Engineering, IIT (ISM) Dhanbad*
- *Departmental Review Committee Member, Electrical Engineering, IIT (ISM) Dhanbad*
- *Committee Member for 'Maintaining research quality and ranking in Engineering', Electrical Engineering, IIT(ISM) Dhanbad*
- *Scrutiny member for Physical Registration of JEE Admitted Student*

References

- ***Prof. Sukumar Mishra*** *(Fellow, IEEE), Department of Electrical Engineering, Indian Institute of Technology Delhi, India. Email : sukumar@ee.iitd.ac.in*
- ***Prof. Bhim Singh*** *(Fellow, IEEE), Department of Electrical Engineering, Indian Institute of Technology Delhi, India. Email : bsingh@ee.iitd.ac.in*
- ***Prof. Jianzhong Wu*** *(Fellow, IEEE), School of Engineering, Cardiff University, United Kingdom. Email : Wuj5@cardiff.ac.uk*
- *Further References Available Upon Requirement.*

Declaration

I hereby declare that the information furnished above is true to the best of my knowledge.

V. L. Srinivas.

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