

FACULTY PROFILE

Name of the Staff : **Dr.S.SANKARAKUMAR**
Official Address with E-mail Id : Associate Professor ,
Department of EEE,
National Engineering College,
K.R.Nagar, Kovilpatti – 628 503
Thoothukudi Dist., Tamilnadu
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Mobile Number : 9659689890

1. Personal Details :

Age : 44
Date of Birth : 05.02.1982
Sex & Marital Status : Male & Unmarried
Citizenship : Indian
Qualification : M.E.,Ph.D.,

| Degree | Programme and Specialisation | Class /CGPA | Month & Year of Passing | Institute/University |
|-------------|--------------------------------------|-------------|-------------------------|--|
| Ph.D | Power Electronics | | January 2020 | Anna University, Chennai |
| M.E./M.Tech | Industrial Electronics | I Class | April 2006 | Maharaja Sayajirao University of Baroda, Gujarat |
| B.E/B.Tech | Electrical & Electronics Engineering | I Class | April 2003 | Manonmaniam Sundaranar University, Tirunelveli |

Date of joining : 09.06.08
Present status : Associate Professor Assistant Professor

(Sr.Grade)

Professional Experience :

| Designation | Institution/ Organisation | Period | Nature of Duties |
|-------------------------------|--|--------------------------|-----------------------|
| Associate Professor | National Engineering College | 01.04.2025 to till date | Teaching and Research |
| Assistant Professor(Sr.Grade) | National Engineering College | 10.07.2013 to 31.03.2025 | Teaching and Research |
| Lecturer/Assistant Professor | National Engineering College | 09.06.08 to 09.07.2013 | Teaching and Research |
| Lecturer | Pandian Saraswathi Yadav Engineering College | 2 Yrs | Teaching |

Courses taught:

| Course Title | U.G. or P.G. |
|--|--------------|
| Basic Electrical and Electronics Engineering , Electron Devices, Electric Circuits, Electrical Machines –I ,Electrical Machines –II, Power Electronics, Solid State Drives, Electrical Engineering, Design of Electrical Machines, Environmental Science and Engg., Measurements and Instrumentation, Electronic Devices & Circuits, Electromagnetic interference and Electromagnetic Compatibility, Power Electronics for Renewable Energy Systems, Protection and Switchgear, Advanced Switchgear, Special Electrical Machines, Fibre Optics and Laser Instruments, Automotive Electrical and Electronics, Earthing Design, Electrical Energy Conservation and Auditing, Electric Vehicle Machines and Drives, AC Rotating Machines, DC Machines and Transformers. Electrical Machine Design | U.G |

2. Honors / Awards :**3. Academic Achievements****3.1 Short term Courses / Seminars / Conference/ Workshops organized:**

| Sl. No | Title | Period | No. of Participants | venue |
|--------|--|--------|---------------------|------------------------------------|
| 1. | A two day workshop on “Smart Protection and Control using Numerical Relays” on 06 th and 7 th April, 2026. | 2026 | 31 | National Engg. College, Kovilpatti |
| 2. | A two day National Level Inter College Technical Symposium ALTANZIA2k24 | 2024 | 126 | |
| 3. | A two day National Level Inter College Technical Symposium ALTANZIA2k23 | 2023 | 390 | |
| 4. | One Day National level Workshop and Technical Symposium – ALTANZIA2k22 | 2022 | 110 | |
| 5. | A two day online workshop on “Smart Protection and Control using Numerical Relays” | 2021 | 64 | |
| 6. | A Two Day National level Workshop and Technical Symposium – ALTANZIA2k19 | 2019 | 180 | |
| 7. | Relay workshop for the symposium participants | 2019 | 20 | |
| 8. | PSIM workshop for the symposium participants | 2019 | 20 | |
| 9. | A Two Day National level Workshop and Technical Symposium – ALTANZIA2k18 | 2018 | 130 | |
| 10. | Two day Relay workshop for final year students | 2018 | 20 | |
| 11. | Intra College Technical Symposium TESLA’2 k17 | 2017 | 60 | |
| 12. | Three days workshop on “Hands on Training in Electrical Maintenance” | 2015 | 28 | |

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| 13. | Hands on Training on Simulation tool for Power Electronics during odd | 2015 | 30 | |
| 14. | MNRE Sponsored One Day National Conference ELCON-13 | 2013 | 50 | |
| 15. | DRDO Sponsored National Workshop FPGA-PED'11 | 2011 | 55 | |
| 16. | CSIR Sponsored One Day National Level Seminar- RADIE'11 | 2011 | 50 | |
| 17. | National Level One Day Workshop REHIVE'08 | 2008 | 50 | |

3.2 Short term Courses / Seminars / Conference/ Workshops Attended:

| S. No | Title | Period | No. of Participants | Venue |
|-------|---|---|---------------------|--|
| 1. | One Week Faculty Development Program “Smart Grid Resilience: Integration of Inverter-Based RESs, EVs and Cyber security Measures” | 08 th to 12 th September 2025 | 60 | National Institute of technology, Tiruchirappalli |
| 2. | Power Electronics Applications in Renewable Systems & E-Vehicles” | 22 nd to 27 th April 2025 | 50 | Indian Institute of Information Technology Design and Manufacturing (IIITDM), Kancheepuram |
| 3. | Trends and Challenges in EV Train Design and Control | 19 th - 23 rd June 2023 | 50 | National Institute of technology, Tiruchirappalli |
| 4. | Evolution of Power Electronics for Electric Vehicles Charging Infrastructure (Online) | 2 nd to 6 th January, 2023 | 60 | Malaviya National Institute of Technology Jaipur(MNIT), Rajasthan |
| 5. | AICTE – Two Weeks Training Program on Student Learning Assessment | 10 th to 23 rd January,2022 | 120 | STTP-PARAKH in collaboration with Construction Industry Development Council (CIDC) |
| 6. | Electrical Power Systems - Design & Analysis using ETAP | 24.01.2022 to 03.02.2022 | 80 | MSME - Online Training Program |
| 7. | AICTE Margadarshan FDP on “Technologies for Smart Electrical Power Grid” | 24 th to 28 th May 2021 | 30 | Online – National Institute of Technology, Tiruchirappalli |

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| 8. | MATLAB training Course on “State flow for Logic Driven System Modeling, Modeling Physical Systems with Simscape, Customized Course” | 04 th to 7 th January 2021 | 60 | Online Course organised by Mathworks. |
| 9. | AICTE Margadharshan Scheme, Five days FDP on “Research Opportunities, Challenges in Power Electronics for EV and its impact on Smart Grid” | 14 th to 20 th December 2020 | 50 | Online – National Institute of Technology, Tiruchirappalli |
| 10. | AICTE (ATAL) Sponsored Short Term Course on "Power Electronic converters and Controllers for EV and Smartgrid" | 18/12/2019 to 22/12/2019 | 90 | Indian Institute of Information Technology Design and Manufacturing (IIITDM), Kancheepuram |
| 11. | QIP STC on "Power Semiconductor Devices for Power Electronic Converters" | 23-27 th July 2018 | 60 | IISC, Bangalore |
| 12. | GIAN Course on Multi-Phase Drive and Generation systems for Advanced Industrial Applications | 12-16 th February 2018 | 60 | VNIT, Nagpur |
| 13. | AICTE sponsored Two Week FDP on “Recent Trends and Applications on High Voltage Engineering” | 06.11.2017 to 19.11.2017 | 30 | National Engineering College |
| 14. | Two Days Training on Protection Relay-P14D | 24.10.2017 – 25.10.2017 | 15 | National Engineering College |
| 15. | One Week AICTE sponsored QIP Short term course on “Real – time Simulation for Power Electronics and Power Systems Applications” | 10.7.2017 - 14.7.2017 | 60 | IISC, Bangalore |
| 16. | Two weeks Faculty Internship Training (Industrial Knowhow) at EPCOS India PVT LTD, Nasik | 16 th May to 26 th May, 2017 | 7 | EPCOS India PVT LTD, Nasik |
| 17. | Three Days Quality improvement Programme on “Technology Enabled Teaching Learning Process” conducted by NITTTR, Chennai. | 27.05.2017 – 29.05.2017 | 60 | National Engineering College |
| 18. | One Week AICTE sponsored QIP Short term course on “Pulse width modulation Techniques for voltage source inverters | 21.11.2016 - 25.11.2016 | 60 | IISC, Bangalore |

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| 19. | National Level Workshop on “Simulation of IEEE Transaction Papers on Multilevel Inverters” | 19 th December,2015 | 30 | Karpagam College of Engineering, Coimbatore |
| 20. | Three Days National Level Workshop on “Formulation of Research and Development Grant Proposals by Scientists | 18-20, November, 2015. | 35 | National Engineering College |
| 21. | Short term course on “Digital Signal Processor Controlled Power Electronic Converters & Drives (DSPEC-2015)” | September 28-30, 2015 | 60 | National Institute of Technology, Warangal |
| 22. | One-day workshop on Innovations in Cable Technology(IICT) | 06.05.2015 | 40 | PSG college of Technology, Coimbatore |
| 23. | 2 days workshop on Advanced Controller Design for Power Electronic Converters Renewable Energy System using MATLAB & DSPACE | 09.09.2014 & 10.09.2014 | 45 | Kongu Engineering College,Erode |
| 24. | Short Term Course on Advanced Solar Energy Technologies | 09.05.2014 To 15.05.2014 | 90 | IIT,New Delhi |
| 25. | One day seminar on SCADA and its Recent Trends | 18 th April,2014 | 30 | National Engg. College, Kovilpatti |
| 26. | Hands on Training in PSIM | 9 th and 10 th august 2013 | 50 | CIT, Coimbatore |
| 27. | 3 Days Work Shop on Implementation of Soft Computing Techniques Using | 18 th to 20 th October 2012 | 70 | National Engg. College, Kovilpatti |
| 28. | DRDO sponsored Two Day National Level Seminar on Energy Efficient Artificial Intelligennt Drives-Recent Trends and perspective-EEDRTP’12 | 14 th & 15 th September 2012 | 50 | National Engg. College, Kovilpatti |
| 29. | DRDO sponsored Two Day National Level Seminar on Soft Computing and its Applications to Electrical Engineering-SCTAEE’11 | 5 th and 6 th August 2011 | 50 | National Engg. College, Kovilpatti |
| 30. | CSIR Sponsored One day Seminar on Recent Advancement in the field of Dielectrics allied to high | 18 th February 2011 | 55 | National Engineering College, Kovilpatti |
| 31. | MHRD & IIT Bombay Sponsored Five days workshop | 20.12.10 to 24.12.10 | 75 | Sardar Patel Institute of Tech,Mumbai |
| 32. | Two Days Workshop on Graphical System Design for Engineering Applications using LABVIEW | 25.11.2010 & 26.11.2010 | 60 | National Engg. College, Kovilpatti |

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| 33. | AICTE Sponsored Two days Seminar on Artificial Intelligence based Power system Restoration –AIPSR’10 | 13.05.10 to 14.05.10 | 50 | National Engineering College, Kovilpatti |
| 34. | One day Seminar on Recent Trends in Renewable power Generation | 08.01.10 | 40 | National Engineering College, Kovilpatti |
| 35. | AICTE Sponsored SDP on Advanced Machines For Electric Propulsion Systems | 16 th To 29 th 2009 14 Days | 80 | Arunai Engineering College, Thiruvannamalai |
| 36. | AICTE Sponsored SDP on Recent Trends and Developments in Design, Operation and Testing of EHV | 06.07.09 to 20.07.09 | 60 | VNS Institute of technology, Bhopal |
| 37. | DRDO Sponsored Seminar on Artificial Intelligence Based Electrical Machines & Drives-AIEMD’09 | 19 th & 20 th February 2009,2 Days | 50 | National Engg. College, Kovilpatti |
| 38. | Two days Seminar on Emerging Research Trends in Power Electronics & Power systems-ERTPEPS’08 | 16.10.08 to 17.10.08 | 40 | National Engineering College, Kovilpatti |
| 39. | One day workshop on Modern Trends in Power Electronics | 23.08.08 | 50 | Franics Xavier EnggCollege, |
| 40. | Two day workshop on Micro Teaching | 18.07.2008 & 19.07.08 | 50 | National Engineering College, Kovilpatti |
| 41. | Recent Advances In Power Electronics & Drives | 15 th To 17 th March 2007,3 Days | 60 | Thiagarajar College of Engineering, Madurai |

Industrial Training:

| S. No | Name of the Industry | Period | Area |
|-------|--|---|---|
| 1. | Ohm Energy Management Systems PVT Ltd., Sriperumbudur | 29 th January – 02 nd February 2024 | MV/LV Switchgear panels, Control Relay panels, MV/LV Bus ducts, Fabricated panels |
| 2. | Enthu Technology Solutions Private Limited, Coimbatore | 07.02.2023 to 11.02.2023 | Product development, consultancy services, and End to End IoT Solutions development for Smart city, |
| 3. | VIPE Equipments, Chennai | 21.02.22 to 25.02.2022 | Silica Gel Breather, various types of Temperature Indicator Meter, Marshalling |
| 4. | Calibre Telecom Services India PVT LTD | 08.03.2021 to 12.03.2021 | Power Modules, Telecom Products |
| 5. | Easun-MR tap Chngers (P) Ltd,Thiruninravur, Chennai | 26.11.2018 to 30.11.2018 | OLTC manufacturing |
| 6. | L&T Rubber Processing Machinery, Chennai | 09.11.2017 | Tyre machinery |

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| 7. | EPCOS India Pvt.Ltd, Nasik (A TDK group of company) | 16.05.2017 to 26.05.2017 | LV & MV capacitors, Power factor Controllers, PFC panels, Anti-resonance detuned harmonic filter reactors etc.. |
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Online Courses Attended:

| S.No | Title of the Course | Name of organizer | Month & Year |
|------|--|--|---|
| 1. | Facts Devices | NPTEL Course, IIT Roorkee | Jan – March 2026 (8 Week Course) – Elite |
| 2. | Advanced Power Electronics and Control | NPTEL Course, IIT Roorkee | July to September 2024 (8 Week course) - Elite Silver + 5% Topper |
| 3. | Design Thinking - A Primer | NPTEL Course, IIT Madras | Jul-Aug 2023 (4 week course) Elite Silver |
| 4. | Digital Protection of Power System | NPTEL Course, IIT Madras | Jan-Mar 2024 (8 Week Course) |
| 5. | DC Micro Grid and Control Systems | NPTEL Course, IIT Roorkee | July-Sep 2022, (8 Week Course) – Elite |
| 6. | Introduction to Smart Grid | NPTEL FDP Course, IIT Madras | July-Sep 2021, (8 Week Course) – Elite |
| 7. | Electrical Machines | NPTEL Course, IIT Madras | Jan-April 2021, (12 Week Course) – Elite |
| 8. | Power Electronics | NPTEL Course , IIT Delhi | July-October 2019(12 Week Course) – Elite Silver + Topper |
| 9. | Basic Electronics | NPTEL Course , IIT,Bombay | Jan-April 2018 (12 Week Course) – Elite |
| 10. | Introduction to Research | NPTEL Course , IITM Madras | Jan-Feb 2016 (10 hours course) - |
| 11. | Motors and Motor Control Circuits | Coursera - University of Colorado Boulder | 5 Weeks Course |
| 12. | Photovoltaic solar energy | Coursera -École Polytechnique | 3 Weeks Course May 18, 2020 |
| 13. | Introduction to Power Electronics | Coursera - University of Colorado Boulder | 3 Weeks Course September 15, 2020 |
| 14. | Electric Utilities Fundamentals and Future | Coursera – University of Colorado Boulder | 5 Weeks Course July13, 2020 |
| 15. | Wind Energy | Coursera – University of Denmark | 5 Weeks Course July , 2020 |
| 16. | Introduction to Electronics | Coursera – Gerogia Institute of Technology | 3 Weeks Course September 15, 2020 |

3.3 Membership in Professional bodies :

| Name of Society | Grade of Membership |
|---|---------------------|
| Indian Society of Technical Education(ISTE) | LifeTime(LM49970) |

Research Achievements

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International Journal Publications

| S.No | Title of the Paper | Name of the Journal | Vol.No & Page No. | Month & Year |
|------|---|--|---|---------------|
| 1. | Optimizing power quality and placement of EV charging stations in a DC grid with PV-BESS using hybrid DOA-CHGNN approach | Electric Power Systems Research (SCI)(IF- 4.2) ISSN: 1873-2046 | Volume 245, 111595 | August 2025 |
| 2. | Energy forecasting of the building integrated photovoltaic system based on deep learning dragonfly-firefly algorithm | Energy (SCI)(IF- 9.4) ISSN: 1873-6785 | Volume 308, 132926 | November 2024 |
| 3. | Hybrid technique for optimizing charging-discharging behaviour of EVs and demand response for cost-effective PV microgrid system | Journal of Energy Storage (SCI) (IF- 9.8) ISSN: 2352-152X | Volume 96, 15 | August 2024 |
| 4. | Design of Single Input Dual Output DC-DC Converter for Electric Vehicle Application | Mathematical Problems in Engineering (Scopus Indexed) | Volume 2023 pp.1-13 | November 2023 |
| 5. | Performance estimation of chaos embedded gravitational search algorithm for power converter applications. | Journal of Electrical Engineering (Annexure-I, ISSN. 1582-4594) | 23, vol.19, no.4, pp. 202-211 | August 2019 |
| 6. | Evolutionary algorithm based selective harmonic elimination for three-phase cascaded H-bridge multilevel inverters with optimized input sources | Journal of Power Electronics (ISSN 1598-2092) (SCI) (IF-1.3) | 20, pp.1172-1183 | June 2020 |
| 7. | Power Quality Analysis and Monitoring of EEE Department in Academic Institution | International Journal of Innovative Technology and Exploring Engineering (Scopus Indexed) | ISSN: 2278-3075 (Online), Volume-9 Issue-6, Page No. 224-229. | April 2020, |
| 8. | Power Quality Analysis Of Various Electrical Equipments In An Educational Institution | International Journal of Scientific & Technology Research (Scopus Indexed) | ISSN 2277-8616 VOLUME 9, ISSUE 04, Page No. 2434-2439. | April 2020 |

National Journal Publications

| S.No | Title of the Paper | Name of the Journal | Vol.No & Page No. | Month & Year |
|------|---|--|--|--------------|
| 1. | P.S.Diwakar, S.Sankarakumar “Investigation of Inter-turn Fault in Transformer Winding under Impulse Excitation”, | International Journal of Computer Applications, No.4 | PP. 0975 – 8887, (ISBN: 973-93- 80878-84-0), (Others) | 2014 |

3.4 International Conference Publications

| S.No | Title of the Paper | Name of the Conference | Organizer | Month & Year |
|------|---|---|--|--------------------|
| 1. | MISO SEPIC for Enhanced Efficiency in Renewable Energy Systems Using AIML Algorithms | 2025 11th International Conference on Communication and Signal Processing (ICCSP) | Adhiparasakthi Engineering College Melmaruvathur, Chennai | 5-7 June 2025 |
| 2. | Fire Fighting Robotic Vehicle using Arduino | 2022 3rd International Conference on Electronics and Sustainable Communication Systems (ICESC) | Hindusthan Institute of Technology. Coimbatore, India | 17-19, August 2022 |
| 3. | Design of Earthing Grid using ETAP | IEEE sponsored - 6th International Conference on Trends in Electronics and Informatics (ICOEI) | SCAD college of Engg. And Tech, Cheranmahadevi Tirunelveli | 28-30 April 2022 |
| 4. | Density Based Traffic Light Control using Arduino and IR sensors with spike and Emergency Protection (Best Paper Award) | 9 th International Conference on Contemporary Engineering and Technology 2021 | Prince Shri Venkateshwar Padmavathy Engineering College | April 2021 |
| 5. | Load Flow Analysis, Short Circuit Analysis and Relay Protection and ETAP | 9 th International Conference on Contemporary Engineering and Technology 2021 | Prince Shri Venkateshwar Padmavathy Engineering College | April 2021 |
| 6. | Modeling and Tracking of Maximum Power Point in Solar Cells using P&O Algorithm | IEEE sponsored 2 nd International conference on Electronics, Communication and Aerospace Technology (ICECA 2018) | RVS Technical Campus, Coimbatore | March 2018 |
| 7. | Design Optimization of 3 phase squirrel cage induction motor using evolutionary algorithm | IEEE international conference on Recent Advances in Energy efficient computing and communication | St.Xavier’s Catholic College of Engineering, Nagercoil | March 2019 |

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| 8. | Performance analysis of multicarrier sine PWM based cascaded H-Bridge Multilevel inverter | IEEE international conference on Trends in Electronics and Informatics(ICOEI 2018) | SCAD college of Engg. And Tech, Cheranmaha devi | May 2018 |
| 9. | Optimal Design of Grading Ring and Analysis of Electric Field of 800kV Bushing “Analysis of Electric field of 800kV UHVDC Bushing” | <i>DRDO sponsored IEEE International Conference on Innovations, Information, Embedded and Communication systems (ICIECS'15</i> Karpagam College of Engineering, Coimbatore. | | 19 th and 20 th March 2015 |
| 10. | Optimal Design of Grading Ring and Analysis of Electric Field of 800kV UHVDC Bushing”, | <i>IEEE International Conference on Electrical, Computer and Communication Technologies(IEEEICECCT)</i> SVS College of Engineering, Coimbatore. | | 5-7 th , March 2015 |
| 11. | Ageing Analysis of Insulating Oil under various Atmospheric conditions” | <i>IEEE International Conference on Circuit, Power and Computing Technologies-2014(ICCPCT-2014),</i> Noorul Islam University, Kumaracoil, Kanyakumari District. | | 20 th & 21 st March 2014 |
| 12. | Investigation of Interturn Fault in Transformer Winding under Impulse Excitation | International Conference on Innovations in Intelligent Instrumentation, Optimisation and Signal Processing ICIIOS'13, Karunya University, Coimbatore | | March 2013 |
| 13. | A high Efficiency Synchronous Power Converter for Photovoltaic Applications | International Conference on Advances in Engg. Science & Management-ICAESM-2012, | | March 2012 |

National Conference Publications

| S.No | Title of the Paper | Name of the Conference & Organizer | Month & Year |
|------|--|---|---------------|
| 1. | Charecterisation of Enamelled Copper Wire with Carbon Nano Tubes | National Conference on New and Renewable Energy | February 2011 |

3.4 Additional Responsibilities held :

- i. One of the Tutor and Class incharge for II EEE Students.
- ii. FDP Cell Member
- iii. Associate Coordinator - Alumni Association
- iv. Department Exam Wing Incharge
- v. EEE Association Incharge (till 2024)
- vi. Smart Protection and Control Lab Incharge
- vii. Department Budget file incharge
- viii. Department Result Analysis file incharge

- ix. Electrical Maintenance Incharge & Asst.(2011-2017)
- x. Institution of Engineers(I) Staff Chapter Incharge (till 2023)
- xi. ICT academy Department Level Incharge (till 2022)
- xii. Industry Institute Partnership Cell (IIPC) – Department member (till 2023)
- xiii. National Accreditation and Assessment Council – Report preparation committee Member for the Department - 2020
- xiv. Time Table Committee Asst.(2011-2014)
- xv. Electrical Workshop Asst.-2019
- xvi. Anna University Magazine- Report preparation committee Member for the Department
- xvii. NBA, Anna University, AICTE Report Preparation Committee Member-2018
- xviii. Staff Recruitment Process Asst. in the year 2009-2011
- xix. NCC Care Taker in the year 2008
- xx. Staff club Executive Committee Member in the year 2012-13