Sri Sai Ram Engineering College

Department of Electronics and Instrumentation Engineering

Name: K.THIRUPURA SUNDARI	
Designation:	Associate Professor
Qualification:	M.E, Ph.D
Area of Specialization:	Control and Instrumentation
Experience:	Teaching- 21 yrs
	Industry/Polytechnic: NA
Number of Workshops/ Conferences/ FDP Attended:	Workshops-20, Seminars-4, FDP-28, NPTEL Courses-26, NITTT Modules-8

Publication:	Journal:
	    National: 5
	    International: 11

	Conference:
	    National: -4
	    International: 13

	Book chapters:2
Research Guidance:	Guided 19 UG projects till date and 3 PG projects
General:	- Member of Institution of Engineers India(M- 1673216) - Senior Member, IEEE(97595399) - Member of ISTE(LM131500) - Life Member of ISOI (LM1940) - NAAC-C2 Coordinator - NBA Coordinator - NIRF criteria coordinator - Department PAC coordinator - Acted as Department Coordinator for conducting project exhibitions, workshop and guest lectures - Have won Cash awards for producing 100% results - Awarded Elite with Gold Medal for the NPTEL Course on Fuzzy sets, logic and

		systems & applications • Awarded Elite with Gold Medal for the NPTEL Course Automatic Control and received four elite awards • Attended 7 days industrial training at GH Induction India Pvt Ltd from 20.06.2022 to 26.06.2022. • Was part of a team which established the Industrial Automation Lab in the EIE department. • Established CDAC IoT Research Laboratory

Ph.D. Thesis Title

INVESTIGATIONS ON MODULAR THREE PHASE POWER FACTOR CONTROL SCHEMES USING DC-DC QUADRATIC BOOST CONVERTER IN LOW POWER WIND ENERGY CONVERSION SYSTEM

Experience:

S. No	Name of the Institution	Designation	Department	Period of Experience	Years of Experience
1	Sri Sairam Engineering College, West Tambaram, Chennai	Associate Professor (June 2017 – Till date)	Electronics and Instrumentation Engineering	15.06.09- till date	16 years
2	Hindustan Institute of Technology and Science, Padur, Chennai	Senior Lecturer	Electrical and Electronics Engineering	June'08-May'09	11 months
3	Hindustan college of Engineering, Padur, Chennai.	Lecturer	Electrical and Electronics Engineering	June'04-June'08	4 years

Theory Subjects Handled:

- Power Electronics
- Control Systems
- Process Control
- Measurements and Instrumentation
- Electrical Drives and Control
- Transducer Engineering
- Electric Circuit Analysis
- Electrical Machines
- Digital Control Systems
- Basic Electrical Electronics and Instrumentation Engineering
- Applied Soft computing
- Neural Networks and Fuzzy Logic control
- Microprocessors and Microcontroller
- Logic and distributed control systems
- Digital Logic circuits

UG projects Guided:

Sl. No	Title of the Project work	Year of Guidance
1.	IoT BASED PIPELINE INSPECTION ROBOT	June 2025
2.	IoT Monitored Portable Wind Energy Based Energy Generation for Charging Applications	June 2025
3.	Design of Efficient Emergency Light, Blower And An USB	June 2024
4.	Detection of muscular fatigue by using Surface EMG electrode	June 2024
5.	IoT based Pipeline Inspection Robot	June 2023
6.	Electrolytic disinfected and purified water supply system	June 2022
7.	Solar power based air pollution monitoring system	June 2021
8.	Prevention of accidents using RSSI	June 2020
9.	Optimizing the performance of PID controller for a two tank interacting process and online monitoring of parameters using IoT	April 2019
10.	Detection of muscular fatigue on longer usage of smart phones by using surface EMG electrode	April 2018
11.	Design of robust PI controller for a bioreactor	April 2017
12.	Maturity detection of fruits and vegetables using image processing	April 2017
13.	Automatic ingestion monitor	April 2016
14.	Grid frequency based load control	April 2015
15.	A novel method for efficient face recognition in surveillance system using image processing techniques	April 2015

16.	Modeling and analysis of automatic storage and retrievable system using timed petrinet	April 2014
17.	Intelligent sea boundary detection and protection system using GPS and GPRS	April 2013
18.	Gesture recognition for physically challenged using MEMS technology	April 2012
19.	Black box for industrial equipments monitoring	April 2011

Workshops Attended:

Date	Venue	Title	Duration
16.08.23-18.08.23	Sri SaiRam Engineering College	NITTTR- Curriculum audit training	3 days
21.12.22-22-12..22	Vel Tech Multi Tech Dr. Rangarajan Dr. Sakunthala Engg College	Simulation of Smart Grid	2 days
26.9.22-29-9.22	Online Workshop	Renewable Energy	2 days
28.10.21-29.10.21	Online Workshop	Modern concepts of Wind power generation	2 days
19.06.20-21.06.20	Online Workshop	Industrial Automation by Microwin Automation, Trichy	3 days
13.02.20-14.02.20	SSN College of Engineering	Industrial Automation using PLC and SCADA	2 days
12.11.18-14.11.18	Sri SaiRam Engineering College	Rapid prototyping-IoT and Embedded System Design	3 days
23.7.18-25.7.18	Sri SaiRam Engineering College	IoT for Instrumentation Applications	3 days
30.8.17& 31.8.17	Madras Institute of Technology, Chromepet	Soft computing and Bio inspired optimization using MATLAB	2 days
16.9.16& 17.9.16	Madras Institute of Technology, Chromepet	PID controller	2 days
28.2.12& 29.2.12	Sri SaiRam Engineering College	PIC microcontroller based embedded system design	2 days
23.2.12& 24.2.12	B.S.Abdur Rahman University	Instrumental techniques in chemical research	2 days
19.1.12	Sri SaiRam Engineering College	Art of journal and thesis writing	1 day
06.09.11 07.09.11	Sri SaiRam Engineering College	Industrial Automation	2 days

24.06.11& 25.06.11	Sri SaiRam Engineering College	Virtual Instrumentation in industrial automation	2 days
2.11.09 - 6.11.09	Sri SaiRam Engineering College	Mission10x workshop	5 days
23.10.09	MIT,chromepet	High speed digital design and testing	1 day
13.03.09	HITS,padur	MATLAB for engineers	1 day
20.06.07& 21.06.07	College of Engineering, Anna University, Guindy	Major aspects of energy research in India and Germany	2days

FDP:

Date	Venue	Title	Duration
23.02.2026-27.02.2026	CDAC-MEPZ	INTERNET OF THINGS-SYSTEM ENGINEERING	5 DAYS
26/02/2024 02/03/2024	SSN COLLEGE OF ENGINEERING	UNLEASHING THE POTENTIAL OF AI IN POWER QUALITY	6 DAYS
03/06/2024 07/06/2024	NITTTR CHENNAI	CIRCUIT CREATION ANALYSIS SIMULATION AND PCB DESIGN USING MULTISIM	5 DAYS
November 2022	NITTT	Modules 2,6,7,8	2 Months
JULY 2022	NITTT Online Mode	MODULES 1,3,5	2 months
SEPTEMBER 2021	NITTT Online Mode	MODULE 4	2 months
05.07.21-09.07.21	ATAL Academy, Online Mode	Microgrid An Opportunity: Electric Vehicles and Renewable Energy Resources	5 days
21.06.21-25.06.21	ATAL Academy, Online Mode	Data Science with Statistical Methods using R Programming- Basic Course	5 days
12.06.21-16.06.21	ATAL Academy, Online Mode	Inculcating Universal Human Values in Technical Education	5 days
04.01.21-08.01.21	ATAL Academy, Online Mode	Robotic Process Automation	5 days
11.12.20-15.12.20	ATAL Academy, Online Mode	Advances in Power Electronics for Hybrid Electric Vehicle-2020	5 days

10.09.20-14.09.20	ATAL Academy, Online Mode	Electric Vehicle	5 days
17.08.20-24.08.20	Short Term Training Programme, RMD Engineering	Mitigation of Power Quality Issues in Distributed Generation Systems using Custom Power Devices- II	6 days
31.08.20-04.09.20	ATAL Academy, Online Mode	Blended Learning and Flipped Classroom	5 days
26.05.20-30.05.20	ATAL Academy, Online Mode	Data Sciences	5 days
16.05.20-20.05.20	ATAL Academy, Online Mode	Artificial Intelligence	5 days
05.12.19-11.12.19	Sri SaiRam Engineering College	Artificial Intelligence	5 days
30.10.19-06.11.19	Sri SaiRam Engineering College	Machine Learning and data manipulation using R and SQL	6 days
22.7.19-26.7.19	Sri SaiRam Engineering College	Renewable Energy Systems	5 days
18.01.18-20.01.18	Tagore Engineering College	Power Electronics for Renewable Energy Systems	3 days
16.12.16-23.12.16	Sri SaiRam Engineering College	Process Control	7 days
20.6.16-27.6.16	Sri SaiRam Engineering College	Microcontroller Based system design	7 days
1.6.15-8.6.15	Sri SaiRam Engineering College	Power Electronics	7 days
7.1.13-11.1.13	Sri SaiRam Engineering College	DCS and field instruments training programme conducted by Yokogawa Technical School	5 days
12.12.12	Sri SaiRam Engineering College	Role of academic excellence in developing world class higher learning institutions and faculty	1 day
13.11.04	Hindustan college of Engineering	Instructional design and delivery	1 day

Seminar:

Date	Venue	Title	Duration
8.10.13& 9.10.13	Sri SaiRam Engineering College	Current trends and future role of renewable energy	2 days
26.9.13& 27.913	Easwari Engineering College	Development of sensors in industrial applications	2 days
17.03.09	Hindustan college of Engineering	Harnessing wind energy	1 day
10.03.06	Hindustan college of Engineering	Engineering education	1 day

Publications: National Journal

S. No	Paper Title	Journal Details	Publication details (Vol/Edition/Year and month of
1	IoT Monitored Portable Wind Energy Based Energy Generation for Charging Applications	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN TECHNOLOGY	11 (11)
2	A Novel Method For Prevention of Accidents At High Alert Zones	Ilkogretim Online - Elementary Education Online, http://ilkogretim-online.org.	2021; Vol 20 (Issue 1): pp. 5101-5108 doi:10.17051/ilkonline. 2021.01544
3	Automated storage/retrieval using Petrinets	Journal of Gujarat research society	ISSN: 0374-8588 Volume 21 Issue 17, December 2019
4	Robust PI controller design for a bioreactor	Journal of Emerging Technologies and Innovative Research	ISSN-2349-5162 Volume 6, May 2019
5	Battery powered electric auto rickshaw-a feasibility analysis	Journal of Institution of Engineers (India)	Vol. 88, May 2007

International Journal Publications

S. No	Paper Title	Journal Details	Publication details (Vol/Edition/Ye
1	Predictive riccati control for enhancing power quality using extended pq theory in wind energy-based conversion systems	Scientific Reports	15 (1), 34016
2	Design of optimal LMI-LQR based PI controller for modular three-phase quadratic boost converters in wind energy conversion systems to mitigate current harmonics	ISA transactions	Volume 166, November 2025, Pages 496-515
3.	Linear Quadratic Regulator-Based PI Control of a Non-Ideal Quadratic Boost PFC Converter for LowPower Wind Energy Conversion Systems Supplying Uninterruptible DC Power	IETE Journal of Research, Taylor and Francis	September 2023, Vol 69- Issue 8 https://doi.org/10.1 080/03772063.20 2 2.2048704, pp 5219-5237
4.	A Novel Approach of Chemical Process for Regulation, Control and Conversion of Greenhouse Gas	Journal of Chengdu University of Technology	ISSUE 9 2021 ISSN-NO-1671-9727
5.	Prevention of Accidents Using RSSI	International journal of Advances in Engineering and Management (IJAEM)	ISSN: 2395-5252,Volume no.: 02 Issue No.: 01,125-129
6.	International Nautical Peripheral Observer	International Journal of Psychosocial Rehabilitation	Issue 8, June 2020,685-691
7.	Tuning PID Controller for a Two Tank Process and Its Parameter Monitoring using IoT	International Journal of Recent Technology and Engineering (IJRTE)	ISSN: 2277-3878, Volume-8, issue-3, September 2019
8.	Fuzzy classifier based ingestive monitor.	International Journal of Engineering & Computer Science,	12-19. https://doi.org/10 .31295/ijecs.v2 n1. 61

9.	Maturity detection of fruits and vegetables using K-means clustering technique	International Journal of Engineering Technology Science and Research	Volume 4, November 2017
10	Human area network at defense	Transactions on engineering and sciences	Volume 2, May 2014
11	Self charging techniques for cellular phones	World Academy of Science and Technology	Volume 69, October 2010

Conference proceedings National

S. No	Title of the paper	Conference Details	Month/Year of publication
1.	Detection of muscular fatigue on longer usage of smartphone using emg electrode	National Conference in Instrumentation and automation at Velammal Engg college, Chennai	April 2017
2.	Design of robust PI controller for bioreactor	National Conference Innovative techniques in power engineering and drives at Velammal Engg college, Chennai	March 2017
3	FPGA implementation of area efficient FIR filters for high speed applications	National Conference on optimization techniques in engineering and technology at Vinayaka Missions University, Salem	March 2008
4	DSPIC control based solar powered three wheeler vehicle	National conference on demand side management options for energy sustainability at Pondicherry Engineering College.	October 2007

International Conferences

S. No	Title of the paper	Conference Details	Month/Year of publication
1.	Roving Crabber in Aquatics	2025 International Conference on Intelligent Control, Computing and Communications (IC3)	2025
2.	Pipe Inspection and Cleaning Robot	2024 International Conference on Power,	2024

		Energy, Control and Transmission Systems (ICPECTS)	
3.	Smart Menu Ordering System	2024 International Conference on Power, Energy, Control and Transmission Systems (ICPECTS)	2024
4.	A Smart Solar Monitoring system using IOT	2024 International Conference on Communication, Computing and Internet of Things, IC3IoT 2024 - Proceedings, 2024	2024
5.	Tech Trash-A Smart Dustbin	2023 Intelligent Computing and Control for Engineering and Business Systems (ICCEBS)	2023
6.	A Novel technique for automatic blackboard cleaning system	3rd International Conference on Power, Energy, Control and Transmission Systems, ICPECTS- Proceedings,	2022
7.	Controller optimization for a single tank liquid level system	3rd International Conference on Power, Energy, Control and Transmission Systems, ICPECTS- Proceedings,	2022
8.	Detection and Classification of Muscular Fatigueness on Upper Extremities using Surface EMG Electrode Interfaced with Labview	1st International Conference on Computational Science and Technology, ICCST - Proceedings,	2022
9.	Design of an Efficient LED Driver using Non-Ideal Boost Converter for Lighting Applications	International Conference on Future Trends in Smart Communities, ICFTSC	2022
10.	Gain Scheduled Adaptive PI Controller for a Hybrid Three Tank System	2nd IEEE International Conference on Power Electronics and IoT Applications in Renewable Energy and its Control, PARC	January 2022

11.	IOT Based Assistive System for Visually Impaired and Aged People	2nd IEEE International Conference on Power Electronics and IoT Applications in Renewable Energy and its Control, PARC	January 2022
12.	Fuzzy Logic Control of Liquid Level in a Single Tank with IoT based Monitoring System	3rd International Conference on Data Sciences, Machine Learning and Applications	ICDSMLA 2021 December 2021
13.	Smart energy metering for cost and power reduction in house hold applications	Proceedings of the 7th IEEE International Conference on Electrical Energy Systems, ICEES 2021	2021, pp. 428–432, 9383725

Book Chapters

S. No	Title of the chapter	Details	Month/Year of publication
1.	Fuzzy Logic Control of Liquid Level in a Single Tank with IoT based Monitoring System	Lecture Notes in Electrical Engineering, pp 401-414	February 2023
2.	Smart power strip for household power outlet control and energy conservation using IoT	Smart Grids for Smart Cities, pp 175-186	February 2023

Online Courses -NPTEL

S. No	Title of the Course	Completion Status	Month/Year of Completion
1.	Ethical Hacking	Elite	Jul-Oct 2025
2.	Introduction to Operating Systems	Elite	Jul-Sep 2025
3.	Ethics in Engineering Practice	Elite+Silver	Feb-Apr 2025
4.	Integrated Circuits and Applications	Elite+Silver	Jan-Apr 2025
5.	Microprocessors and Interfacing	Elite+Silver+Topper of 2%	Jan-Apr 2025

6.	Introduction On Intellectual Property To Engineers And Technologists	Elite	Jan-Mar 2025
7.	Effective Engineering Teaching In Practice	Gold	Jan-Feb 2025
8.	Basic Electrical Circuits	Elite	Jul-Oct 2024
9.	Technical Communication for Engineers	Gold Medal +Topper of 5%	Jul-Aug 2024
10.	Patent Drafting for Beginners	Elite	Jul-Aug 2024
11	Digital Electronic Circuits	Elite	Jan-Apr 2024
12	Microprocessors and Microcontrollers	Elite +Topper of 5%	Jan-Apr 2024
13	Analog Circuits	Elite	Jan-Mar 2024
14	Teaching And Learning in Engineering (TALE)	Silver medal	Jan-Feb 2024
15	Accreditation And Outcome Based Learning	Silver medal	Aug-Oct 2023
16	Introduction To Industry 4.0 And Industrial Internet Of Things	Elite+Gold Medal	Jul-Oct 2023
17	Fuzzy sets Logic , Systems and Applications	Elite+Gold Medal	Jan- April 2023
18	Non conventional Energy resources	Elite	Jan- April 2023
19	Python for Data Science (8 week course)	Elite	Jan-February 2022
20	Introduction to Internet of Things (12 week course)	Successfully Completed	Jan- April 2020
21	Advanced linear continuous control system applications with MATLAB programming and simulink (8 week course)	Elite+Silver	July-Sep 2019
22	Automatic Control (8 week course)	Gold Medal +Topper of 5%	Jan-Mar 2019
23	Digital Circuits (12 Week Course)	Elite	July-Oct 2018
24	Outcome based pedagogic principles for effective teaching (4 week)	Elite	Aug-Sep 2018

25	Control Engineering (12 week)	Topper of 5%	Jan-Apr 2018
26	Optimal Control (8 weeks)	Successfully completed	July-Sep 2017

- Awarded as NPTEL Discipline Star, NPTEL Believer, NPTEL Enthusiast and NPTEL Motivated Learner
- Awarded as NPTEL Domain Scholar for the domains- VLSI Design and Faculty(Advanced)
- Completed 52 courses in Coursera platform
- Completed Remote Sensing Applications in Agricultural Water Management a course conducted by Indian Institute of Remote Sensing (IIRS), during 03-08-2020 to 07-08-2020
- Completed five FDP courses in NASSCOM platform.

Patent Details
- Granted with a patent titled THE SMART SYSTEM FOR PRE-DETECTION OF CARDIAC ISSUES(Application No.202041047200 A)
- Published a patent titled " Carieteeth-A Handheld device for tooth cavity detection" (Application No.202041047231 A- Published on 6.11.2020)

Reviewer –International Journals (Scopus and SCI Indexed Journals)
- Electrical Engineering (Springer)
- Software X (Elsevier)
- Reviewer in the Journal of Applied Artificial Intelligence, Applied Energy, Engineering Research Express, Environmental Research Communications
- Reviewer in the International Journal of Power Electronics and Drive Systems
- Reviewer for Fourth International Conference on Power Electronics & Renewable Energy Systems (ICPERES - 2024).

Resource person/Coordinator:

- Conducted two days workshop on Raspberry Pi unleashed- Workshop for Second year students of EIE from 16.02.2026 to 17.02.2026
- Conducted a Workshop on Arduino, ESP32 programming for third year students on 24.10.2025
- Conducted two days workshop on Building the future-Hands on IOT with python programming for third year students of EIE from 12.09.2024 to 13.09.2024
- Conducted five day FDP on Industrial Internet of things and connected devices from 01.02.2024 to 06.02.2024
- Conducted one day workshop on Hands on training with ki-cad tools for third year students of EIE on 22.12.23
- Delivered a hands on session on CDAC IoT modules for faculty on 30.06.23 at Sri Sairam Engineering College.
- Delivered a hands on session on IoT and Robotics for third year students at SIT, 03.05.23.

- Conducted two days hands on training session for third years of all the disciplines on CDAC IoT research kits from 24.3.2023 to 25.3.2023.
- Conducted two days hands on training session "ELECTRONIC CIRCUIT DESIGN AND ITS HARWARE IMPLEMENTATION" on 15.12.2022 & 16.12.2022 for the second year students of EIE.
- Delivered a session on "EOMS (Educational Organization Management Systems) "in the orientation program Organized by Department of Artificial Intelligence and Data Science on 16.09.2022, Sri Sairam Engineering College
- Organized and delivered a Two day workshop on "Design of controllers for Electrical and Process control applications using MATLAB "For Third Year Students On 19.09.2022 & 20.9.2022
- Conducted Two days workshop on Programming Arduino processor for IoT applications from
07.06.22   o 08.06.22
- Session chair for National Conference ARICE 2023, on 5th April 2023(05.04.2023 - Wednesday) organized by Sri Sai Ram Institute of Technology.
- Conducted weekly one session on Personal Values for first years from November 2021 to March 2022.
- Conducted Project Idea submission- Ideathon contest for second years on 30.3.2021.
- Conducted two days hands on training session for third years of all the disciplines on MATLAB and its applications from 28.9.2021 to 29.9.2021.
- Delivered a talk on AI using MATLAB Simulink in AICTE sponsored STTP on 16.02.2021
- Conducted a training session on R programming as a skill enhancement course for second years from July 2021 to October 2021.
- Conducted a webinar on Overview of SCADA in Power transmission network on 04.09.2020
- Acted as Judge for Project contests and Hackfest contest on 31.10.2020.
- Acted as Internal auditor for auditing files according to ISO standards.
- In association with ISTE & MICROWIN AUTOMATION organized Virtual Hands on Workshop on Industrial Automation Using PLC and SCADA for III Year Students from 7th OCT to 9th OCT 2020 on Google Meet.
- Organized Mini Project Contest/Exhibition on 27th February 2019 for third years.