


**Sri Sai Ram Engineering College**  
**Department of Electronics and Instrumentation Engineering**

<b>Name: K.THIRUPURA SUNDARI</b>	
<b>Designation:</b>	Associate Professor
<b>Qualification:</b>	M.E (Ph.D)
<b>Area of Specialization:</b>	Control and Instrumentation
<b>Experience:</b>	Teaching- 19 yrs
	Industry/Polytechnic: NA
<b>Number of Workshops/ Conferences/ FDP Attended:</b>	Workshops-19, Seminars-4, FDP-28, NPTEL Courses-10, NITTT Modules-8
<b>Publication:</b>	<b>Journal:</b> National: 4 International: 9
	<b>Conference:</b> National: -4 International: 8
	Book chapters:2
<b>Research Guidance:</b>	Guided 19 UG projects till date and 3 PG projects
<b>General:</b>	<ul style="list-style-type: none"> <li>• Member of Institution of Engineers India(M-1673216)</li> <li>• Senior Member, IEEE(97595399)</li> <li>• Member of ISTE(LM131500)</li> <li>• Life Member of ISOI (LM1940 )</li> <li>• NAAC-C2 Coordinator</li> <li>• NBA Coordinator</li> <li>• NIRF criteria coordinator</li> <li>• Department PAC coordinator</li> <li>• Acted as Department Coordinator for conducting project exhibitions, workshop and guest lectures</li> <li>• Have won Cash awards for producing 100% results</li> <li>• Awarded Elite with Gold Medal for the NPTEL Course on Fuzzy sets, logic and systems &amp; applications</li> <li>• Awarded Elite with Gold Medal for the NPTEL Course Automatic Control and received four elite awards</li> <li>• Attended 7 days industrial training at GH Induction</li> </ul>

	India Pvt Ltd from 20.06.2022 to 26.06.2022. <ul style="list-style-type: none"> <li>• Was part of a team which Established Industrial Automation Lab in EIE department.</li> <li>• Established CDAC IoT Research Laboratory</li> </ul>
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**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	14 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
- Process Control
- Electrical Drives and Control
- Electric Circuit Analysis
- Electrical Machines
- 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
- Control Systems
- Measurements and Instrumentation
- Transducer Engineering
- Digital Control Systems

**UG projects Guided:**

Sl. No	Title of the Project work	Year of Guidance
1.	IoT based Pipeline Inspection Robot	June 2023
2.	Electrolytic disinfected and purified water supply system	June 2022
3.	Solar power based air pollution monitoring system	June 2021
4.	Prevention of accidents using RSSI	June 2020
5.	Optimizing the performance of PID controller for a two tank interacting process and online monitoring of parameters using IoT	April 2019

6.	Detection of muscular fatigue on longer usage of smart phones by using surface EMG electrode	April 2018
7.	Design of robust PI controller for a bioreactor	April 2017
8.	Maturity detection of fruits and vegetables using image processing	April 2017
9.	Automatic ingestion monitor	April 2016
10.	Grid frequency based load control	April 2015
11.	A novel method for efficient face recognition in surveillance system using image processing techniques	April 2015
12.	Modeling and analysis of automatic storage and retrievable system using timed petrinet	April 2014
13.	Intelligent sea boundary detection and protection system using GPS and GPRS	April 2013
14.	Gesture recognition for physically challenged using MEMS technology	April 2012
15.	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 Engg 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 Engg college	Art of journal and thesis writing	1 day

06.09.11 07.09.11	Sri Sairam Engg college	Industrial Automation	2 days
24.06.11& 25.06.11	Sri Sairam Engg college	Virtual Instrumentation in industrial automation	2 days
2.11.09 - 6.11.09	Sri Sairam Engg 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
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 Institute of Technology	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&27.9.13	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	A Novel Method For Prevention of Accidents At High Alert Zones	Ilkogretim Online - Elementary Education Online, <a href="http://ilkogretim-online.org">http://ilkogretim-online.org</a> .	2021; Vol 20 (Issue 1): pp. 5101-5108 doi:10.17051/ilkonline.2021.01544
2	Automated storage/retrieval using Petrinets	Journal of Gujarat research society	ISSN: 0374-8588 Volume 21 Issue 17, December 2019
3	Robust PI controller design for a bioreactor	Journal of Emerging Technologies and Innovative Research	ISSN-2349-5162 Volume 6, May 2019
4	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/Year
1	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 <a href="https://doi.org/10.1080/03772063.2022.2048704">https://doi.org/10.1080/03772063.2022.2048704</a> , pp 5219-5237
2	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
3.	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
4.	International Nautical Peripheral Observer	International Journal of Psychosocial Rehabilitation	Issue 8, June 2020,685-691
5.	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
6.	Fuzzy classifier based ingestive monitor.	International Journal of Engineering & Computer Science,	12-19. <a href="https://doi.org/10.31295/ijecs.v2n1.61">https://doi.org/10.31295/ijecs.v2n1.61</a>
7.	Maturity detection of fruits and vegetables using K-means clustering technique	International Journal of Engineering Technology Science and Research	Volume 4, November 2017

8.	Human area network at defense	Transactions on engineering and sciences	Volume 2, May 2014
9.	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.	A Novel technique for automatic blackboard cleaning system Priyadharshini, V., Vaishnavi, M., Sundari, K.T., ...Mahalakshmi, P., Vaitheeswari, R.	3rd International Conference on Power, Energy, Control and Transmission Systems, ICPECTS- Proceedings,	2022
2.	Controller optimization for a single tank liquid level system	3rd International Conference on Power, Energy, Control and Transmission Systems, ICPECTS- Proceedings,	2022

3.	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
4.	Design of an Efficient LED Driver using Non-Ideal Boost Converter for Lighting Applications	International Conference on Future Trends in Smart Communities, ICFTSC ,	2022
5.	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
6.	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
7.	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
8.	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.	Fuzzy sets Logic , Systems and Applications	Elite+Gold Medal	Jan- April 2023
2.	Non conventional Energy resources	Elite	Jan- April 2023
3.	Python for Data Science (8 week course)	Elite	Jan-February 2022
4.	Introduction to Internet of Things (12 week course)	Successfully Completed	Jan- April 2020
5.	Advanced linear continuous control system applications with MATLAB programming and simulink (8 week course)	Elite+Silver	July-Sep 2019
6.	Automatic Control (8 week course)	Gold Medal +Topper of 5%	Jan-Mar 2019
7.	Digital Circuits (12 Week Course)	Elite	July-Oct 2018
8.	Outcome based pedagogic principles for effective teaching (4 week)	Elite	Aug-Sep 2018
9.	Control Engineering (12 week )	Topper of 5%	Jan-Apr 2018
10.	Optimal Control (8 weeks)	Successfully completed	July-Sep 2017

- 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 Filed

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

### Reviewer –International Journals (Scopus and SCI Indexed Journals)

- Electrical Engineering (Springer)
- International Journal Power electronics and Drives
- Software X (Elsevier)

**Resource person/Co-Ordinator:**

- 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 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.
- Conducted weekly one session on Personal Values for first years from November 2021 to March 2022.