

Dr.Kalpana H M

Affiliation (Professor, Dept of Electronics and Instrumentation engineering, SIT)

Contact: 9480784395

Email: kalpanahm@sit.ac.in

Vidwan ID:90963

Scopus ID:56143409400

OrcID:0000-0001-2345-6789

Faculty ID:SIT0082

Education

	Degree	Year	Institute	Specialization
1	Ph.D	2015	Siddaganga Institute of Technology, VTU-Belgaum.	Electrical and Electronics Engineering Sciences “Design and Development of Thin Film Strain Gauge Pressure Sensors using Invar36 Alloy”
2	MTech	1998	Sri Jayachamarajendra College of Engineering, Mysore. Mysore University.	Industrial Electronics
3	B.E.	1988	Siddaganga Institute of Technology, Tumkur, Bangalore University.	Instrumentation Technology

Professional Experience

	Date (from-to)	Designation	Organization
1	2024-Till date	Professor	Siddaganga Institute of Technology,Tumkur
2	2016-2024	Professor & Head	Siddaganga Institute of Technology,Tumkur
3	2015-2016	Professor	Siddaganga Institute of Technology,Tumkur
4	2011-2015	Associate Professor	Siddaganga Institute of Technology,Tumkur
5	2008-2011	Associate Professor	Siddaganga Institute of Technology,Tumkur
6	2005-2008	Selection Grade Lecturer	Siddaganga Institute of Technology,Tumkur
7	2000-2005	Senior Lecturer	Siddaganga Institute of Technology,Tumkur
8	1991-2000	Lecturer	Siddaganga Institute of Technology,Tumkur

Positions held

HOD of Electronics and Instrumentation Engineering
PG coordinator of VLSI Design and Embedded Systems
International society of automation-ISA Faculty advisor
International society of automation-ISA Bangalore EC member
Residential warden-SIT Ladies hostel (Akkamahadevi)
Joint secretary- Siddaganga Institute of Technology Alumni Association (SITAA)
Treasurer- Siddaganga Institute of Technology Alumni Association (SITAA)
Member of college sexual harassment committee
Member of college Sports committee
Member of college cooperative society
Member of college squad team
Halcyon-summer fest of SIT-event coordinator
Spandana-Kannada fest of SIT- event coordinator
Member of the Project Review Committee of 'Multicentric Gas Turbine Enabling technologies (GATET) Initiative, GTRE, Bangalore.
VTU valuation centre coordinator
VTU BOE member
VTU BOS member
Organizing committee member of educators day conducted by National Instruments.
Coordinator TECHNISIUM-15
President, TECHNISIUM-19
Sponsorship Chair ICSSSES-24 IEEE international conference conducted at SIT campus
Organizing committee member ICSSSES-25 IEEE international conference conducted at SIT
Editorial team member ICRDM-22-International conference conducted at SIT
Department coordinator- Siddaganga Institute of Technology Alumni Association (SITAA)
Department Research committee coordinator
Department Major project coordinator
Department hobby project coordinator
Department Mini project coordinator
Department Math exhibition coordinator
Department Time table coordinator
Department lab coordinator
Department ISO coordinator
Department Technical Seminar coordinator
Department Test coordinator

Affiliations of Professional organizations

- **Member of ISA** (International Society of Automation)
- **Life member of ISTE** (Indian Society for Technical Education)
- **Life member of ISOI** (Instrument Society of India)
- **Fellow of Institute of Engineers India (FIE)**

Awards and Honors

- ISA Best Faculty Advisor award

Courses Taught

Undergraduate Courses

- Lasers
- Data Handling & Telemetry
- Mechanical Measurements
- Measurement Techniques
- Pneumatic Instrumentation
- Optical Instrumentation
- Instrumentation & Transducers
- Digital Signal Conditioning and Devices
- Instrumentation & Electronics
- Electronic Instrumentation
- VLSI Design
- Digital Integrated Circuit
- Digital Circuits & Wave Shaping
- Logic Design
- Computer Organization
- Process control
- Transducers & Applications
- Optical communications

Postgraduate Courses

- Digital system design using verilog
- SoC Design
- Static timing analysis

Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion
1	Kishanchand T.R 1SI17PEA02	Development of alloy based thin film Strain gauge pressure sensor	2024
2	Chaitra.C 1SI19PIT04	Design and development of tin dioxide (sno ₂) based thin film carbon dioxide gas sensor.	2024

Research Areas

- Thin film sensor development

Sponsored Projects

Completed Projects:

1. Title: Development of Thin film sensors
Funding Agency: VGST, Govt, of Karnataka
Amount: 30 Lakhs
Duration: 3 yrs
Role: Co-investigator
2. Title: Development of Thin Film RTD element for Engine Inlet temperature measurement
Funding Agency: GTRE, Bangalore
Amount: 9.76 Lakhs
Duration: 2 years
Role: Co-investigator

Publications

International journal:

1. **Chaitra Chandraiah , Hullekere Mahadevaiah Kalpana , Challaghatta Muniyappa Ananda and Madhusudan B. Kulkarni Preparation of Antimony Tin Oxide Thin Film Using Green Synthesized Nanoparticles by E-Beam Technique for NO₂ Gas Sensing Micro 2024, 4, 401–411.**
<https://doi.org/10.3390/micro4030025>
2. **T.R. Kishan Chand, H.M. Kalpana Study on influence of thickness and annealing on electrical characteristics of iron-doped vanadium oxide (Fe:V₂O₅) thin films for sensor application The European physical journal plus(Springer) (2024) 139:233,**
<https://doi.org/10.1140/epjp/s13360-024-05037-x>
3. **T.R. Kishan Chand, H.M. Kalpana and T.N Sateesh, Effect of thickness and annealing on electrical characteristics of cerium oxide-doped vanadium oxide (CeO₂:V₂O₅) thin film for sensor application J Mater Sci: Mater Electron, 20th march (2024) 35:616**
4. **C Chaitra, H.M. Kalpana, H.S. Lalithamba & C.M. Ananda Structural, optical and electrical properties of ATO nanoparticles synthesized by combustion method Journal of Mines, Metals and Fuels Aug 2022**
5. **T.R. Kishan Chand, H.M. Kalpana & H.S. Lalithamba Green synthesis, characterization and electrical properties of Iron (Fe) doped vanadium oxide (V₂O₅) for strain gauges Journal of Mines, Metals and Fuels Aug 2022**
6. **C Chaitra, H.M. Kalpana, C.M. Ananda & H.S. Lalithamba Green synthesis of tin oxide based nanoparticles using Terminalia bellirica seed extract: impact**

of operating temperature and antimony dopant on sensitivity for carbon dioxide gas sensing application **Materials Technology: Advanced performance materials** October 2022, [10.1080/10667857.2022.2035143](https://doi.org/10.1080/10667857.2022.2035143) (Q2)

7. T.R. Kishan Chand, H.M. Kalpana, H.S. Lalithamba,(2022) Study on green synthesis characterization and electrical properties of cerium oxide (CeO₂)

doped vanadium pentoxide (V₂O₅) **Journal of material science: Materials in electronics** 25th June 2022

8. Nikhil R & Dr. H M Kalpana (2021) IOT Based Pollution Monitoring System IN Urban area **International Journal of engineering research & technology** 05/09/2021
9. H M Kalpana ,V Siddeswara Prasad and T.N Satesh “Effect of Annealing on Hardness and Elastic Modulus of Invar36 Thin Films Deposited by Direct Current Sputtering for Strain Gauge Applications ” **International Journal of Thin Films Science & Technology**, Vol. 8, pp. 9-19, 1 Sep. 2019.
10. H M Kalpana ,V Siddeswara Prasad (2014) “Development of the invar36 thin film strain gauge sensor for strain measurement”, **Measurement Science and Technology(IOP Publishing)**,Vol.25,pp.1-7, 2014
11. H M Kalpana ,V Siddeswara Prasad and M.M Nayak(2013) “Influence of annealing and thickness on the electrical properties of invar36 thin film for Strain guage applications” **International Journal of Thin Films Science & Technology**, Vol. 3, pp. 155-161, 2013.

National journal:

1. C Chaitra, H.M. Kalpana, H.S. Lalithamba & C.M. Ananda(2020) Synthesis of tin oxide nanoparticles using combustion method for gas sensing applications **Journal of the Instrument Society of India** dec 2020
2. H M Kalpana and Vandana(2019) Temperature Monitoring System for Automotive batteries during initial charging.**Journal of the instrument society of India**, Vol.49 No.3 PP97-100, September 2019
3. H.M Kalpana,V Siddeswara Prasad and Shyanahasan (2016) “**Virtual Instrumentation for level control**”, **Journal of the instrument society of India**, Vol.46 No.4 pp149-151
4. H.M. Kalpana and V. Siddeswara Prasad,(2013) “Annealing studies on DC sputtered invar36 thin films”, **Journal of the Instrument Society of India**, Vol.43, No. 4, pp.237-239. March 2013
5. H.M. Kalpana and R.J. Stephen (2010) “Development of Thin film strain gauge sensor for strain measurement & indication using Lab VIEW”, **Journal of the Instrument Society of India**, Vol.40 No. 1,March 2010, PP65-66.

International Conferences:

1. Fathima N.;Thanuja V.G.;Manyu Krishna H.K.;Banu S.;Kalpana H.M.;Chaitra C. A Systematic Investigation into WO₃Nanoparticles in Pellet Form for Gas

Sensing Applications, Conference Paper International Conference on Smart Systems for Applications in Electrical Sciences, ICSSSES 2024, Year 2024, DOI:10.1109/ICSSSES62373.2024.10561367

2. Kishan Chand R.;Kalpana H.M. Performance analysis of cerium oxide (CeO₂) doped vanadium oxide (V₂O₅) thin film pressure sensor, Conference Paper International Conference on Smart Systems for Applications in Electrical Sciences, ICSSSES 2024, Year 2024, DOI:10.1109/ICSSSES62373.2024.10561371
3. Chaitra C.;Kalpana H.M.;Ananda C.M.;Lalithamba H.S. Dielectric Properties of Green Synthesized Sb:SnO₂Nanoparticles Conference Paper International Conference on Smart Systems for Applications in Electrical Sciences, ICSSSES 2023, Year 2023, DOI:10.1109/ICSSSES58299.2023.10201159
4. Kalpana H.M.;Kulkarni A.B.;Tiwari M.;Chitmalwar O.R.;Raghavendra Surya T.R.
Smart Glove with Gesture Based Communication and Monitoring of Paralyzed Patient Conference Paper International Conference on Smart Systems for Applications in Electrical Sciences, ICSSSES 2023, Year 2023, DOI:10.1109/ICSSSES58299.2023.10199446
5. Nischitha A.P.;Dayananda Y.S.;Kalpana H.M. Lint, CDC and RDC analysis for PCIe subsystem using VCSpyglass Conference Paper 2023 9th International Conference on Signal Processing and Communication, ICSC 2023, Year 2023, Pages 7-12, DOI:10.1109/ICSC60394.2023.10441323
6. H N, RAKSHITHA *; H M, KALPANA(2022)Image Processing for Facial Expression using Machine Learning Algorithm,IEEE 3rd global conference for advancement in technology 7th-9th oct 2022, Nagarjuna College of Engineering
7. Ankitha M R, H M Kalpana and Mr. Ritesh Goyal(2022) RAM Corruption in Level 3 Virtual Electronic Control Unit 2022 International Conference on Industry 4.0 Technology (I4Tech) Vishwakarma Institute of Technology, Pune, India. Sep 23-24, 2022
8. C Chaitra, H.M. Kalpana, H.S. Lalithamba & C.M. Ananda (2022) Structural, optical and electrical properties of ATO nanoparticles synthesized by combustion method international conference on recent developments in Mechanical engineering: ICRDME-22 ,24th & 25th june 2022
9. T.R. Kishan Chand, H.M. Kalpana, H.S. Lalithamba (2022) Green synthesis, characterization and electrical properties of Iron (Fe) doped vanadium oxide

(V2O5) for strain gauges International conference on recent developments in

Mechanical engineering: ICRDME-22 ,24th & 25th June 2022

10. **C Chaitra, H.M. Kalpana, C.M. Ananda & H.S. Lalithamba(2022)** International conference on Advances in Chemical and Material Sciences **International conference on Advances in Chemical and Material Sciences**14th -16th April 2022
11. **T.R. Kishan Chand, H.M. Kalpana, H.S. Lalithamba (2021)** Green synthesis of vanadium oxide nanoparticles for thin film-based sensor application International Conference on Multidisciplinary Aspects of Materials in Engineering 8th & 9th October 2021
12. **Nandeesh T V & Dr. H M Kalpana (2021)** Smart Multipurpose Agricultural Robot IEEE 7th international conference on Electronics,k Computing and Communication Technologies IEEE CONECCT ,Bangalore 9-7-2021.
13. **C Chaitra, H.M. Kalpana, H.S. Lalithamba & C.M. Ananda(2020)** Synthesis of tin oxide nanoparticles using combustion method for gas sensing applications National Symposium on Instrumentation (NSI-42) 28th-29th December 2020
14. **Harshita, H.M Kalpana (2018)** Hardware Interface Test Launcher and Shutdown & Reboot Feature in Settings UI International conference on Recent Advances in Science, Engineering and Technology (ICRASET) held at Bangalore on 10th June 2018.Organised by Science Globe in association with IRAJ Research Forum
15. **Shivashankara and and H M Kalpana,(2017)** Effect of enhanced trilateration algorithm on positioning accuracy. International conference on signal,image processing, communication and automation(ICSIPCA-2017) 6th & 7th July 2017, JSS Academy of Technical Education, Bengaluru.
16. **Kavitha S C and H M Kalpana,(2017)** Development of Human machine interface using Renesas synergy S7 Microcontroller for industrial Data monitoring. IEEE International Conference On Recent Trends in Electronics ,Information & Communication Technology(RTEICT-2017), May 19-20, 2017, Sri Venkateshwara college of Engineering, Bengaluru

17. **H M Kalpana and V Siddeswara Prasad,(2013)** “ Development of INVAR36 thin Films for Strain Gauge Applications”, International Conference on Communication, VLSI & Signal Processing held at Siddaganga Institute of Technology, Tumkur. From 20th to 22nd February 2013, pp 300-303
18. **R.J. Stephen, Latha H K E and H M Kalpana(2010)**, “Development of thin film strain gauge for load measurement”,International Conference on Aerospace, Electronics, Communications and Instrumentation–ASECI–2010, held at V R Siddhartha Engineering College, Kanuru, Vijayawada, during 6th – 7th Jan 2010.
19. **H.M Kalpana and R. John Stephen,(2010)** “LABVIEW for Strain Measurement” International conference on Instrumentation-ICI-2009, held at Cummins College of Engineering for women, Pune during 21st - 23rd Jan 2010 pp 231
20. **R.J. Stephen, Latha H K E and H M Kalpana,(2009)** “Development of thin film strain gauge for force measurement”,International Conference on Sensor and automation, held at Kalaslingam University, Kalasalingam during 21st – 22nd March 2009

National Conferences:

1. **Chaitra C, Dr. H M Kalpana Dr. C M Ananda and Dr.H S Lalithamba(2019)),** **Synthesis of Tin Oxide Nanoparticles Using Combustion Method for Gas sensing applications** NSI-42, National symposium on Instrumentation, December 23 & 29th, Organised by Instrument Society of India, DRDO and Kumarguru college of Technology,Coimbatore
2. **H M Kalpana and Vandana(2019),** **Temperature Monitoring System for Automotive batteries during initial charging** NSI-42, National symposium on Instrumentation, December 23 & 29th, Organised by Instrument Society of India, DRDO and Kumarguru college of Technology,Coimbatore
3. **Arpitha K and H.M Kalpana,(2018)”**Design and implementation of power supply system for vehicle simulator” National conference on” Recent trends in Electrical Sciences 2018” , Siddaganga Institute of Technology,Tumkur 3rd March 2018

4. H M Kalpana, V Siddeswara Prasad and ShayanHasan S(2015), “Virtual Instrumentation for Level Control”, National Symposium on Instrumentation (NSI-40) organized by Instrument Society of India & Department of Electronics and Instrumentation Engineering, Kumaraguru College of Technology, Coimbatore on 30th and 31st of October 2015.

5. Sujay S.A, Nagesha, Praveen Kumar, Sreenivas & H.M Kalpana,(2015) , “Forest fire and smoke detection”, National Symposium on Instrumentation (NSI-40) organized by Instrument Society of India & Department of Electronics and Instrumentation Engineering, Kumaraguru College of Technology, Coimbatore on 30th and 31st of October 2015.

6. H M Kalpana and V Siddeswara Prasad,(2013) “Annealing Effects on Electrical Properties of DC Sputtered Invar36 Thin Film for Strain Gauge Applications”, National Symposium on Instrumentation (NSI-38) held at KLE Society's B V B College of Engineering & Technology, Vidyanagar, Hubli-580031, Karnataka. From 24th to 26th October 2013, pp 103.

Editor/ Reviewer of Journal

- **Ionics-springer nature**

Invited Lectures, talks and workshops

- Invited talk on **GAS sensors: Design and implementation** organized by BMSCE IEEE PES and Sensors Council in collaboration with IEEE Sensors Council, IEEE Women in sensors on 16th November,2024