

## DR. SHEELA S. J.

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### Education

	Degree	Year	Institute	Specialization
1	Ph.D	2019	Siddaganga institute of technology, Tumakuru (VTU)	Chaotic cryptography
2	M.Tech	2006	Malnad college of Engineering, Hassan (VTU)	Digital Electronics and Communication Systems
3	B.E	2000	Kalpataru Institute of Technology, Tiptur (BU)	Telecommunication

### Professional Experience

	Date (from-to)	Designation	Organization
1	01-01-2011 to till date	Assistant Professor	Siddaganga Institute of Technology, Tumkur
2	18-01-2008 to 31-12-2010	Lecturer	Siddaganga Institute of Technology, Tumkur

*(Please fill in reverse order. Current designation should be at the top)*

### Positions held

*(Please give details of any administrative posts, co Ordinator roles/ responsibilities held)*

- Research convener
- Member of cultural committee (Spandana, Halcyon)
- Time table coordinator
- Technical seminar coordinator
- Website coordinator

- I-STEM coordinator
- Soft skills coordinator
- Technisium event coordinator (Hardware debugging, hobby project)
- Contineo coordinator
- NAAC (Criteria 3.1 to 3.8)
- NBA (Criteria 2)
- I-STEM coordinator
- Soft skills coordinator
- CS-1 lab coordinator
- CS-III lab coordinator
- Python lab coordinator

#### Affiliations of Professional organizations

- Life member of ISTE

#### Awards and Honors

- Awarded BITES “Special mention of Jury award” for Ph. D thesis
- Secured 2<sup>nd</sup> place in 5G & 6G Hackathon 2024 from ministry of communications, department of telecommunications and ITUWTSA.
- KAPILA (Kalam program for IP literacy and awareness) member of JSS DCH
- Participated as a **session chair** in Fourth Annual International conference on data science, machine learning and blockchain technology (AICDMB-2023) sponsored by AICTE, New Delhi on March 16-17<sup>th</sup> 2023 at Vidyavardhaka College of Engineering, Mysore.
- Participated as a **session chair** in IEEE 3<sup>rd</sup> Global Conference for Advancement in Technology (GCAT-2022) held at Nagarjuna College of Engineering and Technology, Bengaluru on Oct. 07 – 09<sup>th</sup>, 2022.
- Participated as a **session chair** in Springer International conference on wireless communication and internet of things (ICWCIE-2024) held Siddhartha institute of technology, Tumakuru on 21<sup>st</sup>-22<sup>nd</sup> June 2024.
- Participated as a **session co-chair** in IEEE International conference on smart systems for applications in Electrical sciences (ICSSES-2023) held at Siddaganga institute of Technology, Tumakuru on 7-8<sup>th</sup> July 2023
- Participated as a **session co-chair** in IEEE International conference on smart systems for applications in Electrical sciences (ICSSES-2024) held at Siddaganga institute of Technology, Tumakuru on 3<sup>rd</sup>-4<sup>th</sup> May 2024

#### Courses Taught

##### Undergraduate Courses

- Foundations of Electronic Engineering
- Analog Electronic Circuits
- Digital Electronic circuits
- Signals and Systems
- Analog communication
- Computational methods in E & C Engineering
- Information theory and coding
- Digital signal processing
- Digital communication
- Wireless communication
- MIMO wireless communication
- Introduction to Python programming
- Communication systems – I
- Software defined networks
- Introduction to Electronics
- Communication systems III
- Edge and cloud computing

#### Postgraduate Courses

NIL

#### Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion
1	Sahana V	Optimal LNA design for passive radar applications	Ongoing

#### Research Areas

- Chaotic cryptography
- Chaotic communication
- Trustworthiness of AI systems
- AI communication and networking
- Healthcare-related domains

## Sponsored Projects

### Ongoing Projects:

1. Title: **NIL**  
Funding Agency:  
Amount:  
Duration:  
Role:
2. Title: **NIL**  
Funding Agency:  
Amount:  
Duration:  
Role:

### Completed Projects:

1. Title: **NIL**  
Funding Agency:  
Amount:  
Duration:  
Role:
2. Title: **NIL**  
Funding Agency:  
Amount:  
Duration:  
Role:

## Publications

### Journals

- **Sheela S. J.**, Suresh, K.V. and Tandur D., "Image encryption based on modified Henon map using hybrid chaotic shift transform", Multimedia Tools & Applications, 77(19), 2018.
- **Sheela S. J.**, Suresh, K.V., "Real time region of interest based chaotic image cryptosystem for IoT applications", Multimedia Tools and Applications, 83, 16161–16177, 2024.
- **Sheela S. J.**, Suresh, K.V., Tandur, D., Sanjay, A., Embar, S. and Rajani, T.S., "Image cryptosystem based on modified Henon chaotic map and dynamic encoding mechanism", Multimedia Tools and Applications, 81(28), pp.40253-40268, 2022.

- **Sheela S. J.**, Suresh, K.V. and Tandur, D., 2017. "A novel audio cryptosystem using chaotic maps and DNA encoding", Journal of Computer Networks and Communications, 2017.
- **Sheela S. J.**, Sanjay, A., Suresh, K.V., Tandur, D. and Shubha, G., "Image encryption based on 5D hyperchaotic system using hybrid random matrix transform", Multidimensional Systems and Signal Processing, 33(2), pp.579-595, 2022.
- **Sheela S. J.**, Suresh, K.V., Tandur, D. et al., "Cellular Neural Network-Based Medical Image Encryption", SN computer science 1, 346, 2020.
- Bose, S., Alfurhood, B.S., Flammini, F., Natarajan, R. and **Sheela S. J.**, "Decision Fault Tree Learning and Differential Lyapunov Optimal Control for Path Tracking", Entropy, 25(3), 2023.
- **Sheela S. J.**, Suresh, K.V. and Tandur, D., "Secured Transmission of Clinical Signals Using Hyperchaotic DNA Confusion and Diffusion Transform", International Journal of Digital Crime and Forensics (IJDCF), 11(3), pp.43-64, 2019.

#### Conference Proceedings

- **Sheela S. J.**, Suresh, K.V. and Tandur, D., "Security of industrial wireless sensor networks: A review", IEEE International Conference on Trends in Automation, Communications and Computing Technology (I-TACT-15), pp. 1-6, 2015.
- **Sheela S. J.**, Suresh, K.V. and Tandur, D., "Secured text communication using chaotic maps", IEEE International Conference on Algorithms, Methodology, Models and Applications in Emerging Technologies (ICAMMAET), pp. 1-6, 2017.
- Kavya, R., Nayana, N., Karangale, K.B., Madhura, H. and **Sheela S. J.**, "Photoplethysmography—A modern approach and applications", IEEE International Conference for Emerging Technology (INCET), pp. 1-4, 2020.
- **Sheela S. J.**, Suresh, K.V. and Tandur, D., "Chaos based speech encryption using modified Henon map", IEEE 2<sup>nd</sup> International Conference on Electrical, Computer and Communication Technologies (ICECCT), pp. 1-7, 2017.
- **Sheela S. J.**, Kumar T.S. and Sonu, S.Y., "Quick multimedia data transfer with QUIC", IEEE International Conference on Network, Multimedia and Information Technology (NMITCON), pp. 1-7, 2023.
- Dayananda Kumar N. C, K.V Suresh, **Sheela S. J.**, Dinesh R, "SIT-HANDS: A Novel RGB-D Dataset for Static Hand Gesture Recognition Using Kinect Sensor", IEEE International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), pp. 1-6, 2023.
- A. G. Karegowda, Hemashree D. U and **S. J. Sheela**, "Fruit Classification and Ripeness Estimation using Deep Learning Models," IEEE International

Conference on Computational System and Information Technology for Sustainable Solutions (CSITSS), Bengaluru, India, 2024, pp. 1-6, 2024

#### Book Chapters

- **Sheela S. J.**, Suresh, K.V. and Tandur, D., “Performance evaluation of modified Henon map in image encryption. In Springer International Conference (ICISS), pp. 225-240, 2016. Springer International Publishing.
- T. L. Purushottama, **S. J. Sheela**, S. Y. Sonu., “Deep learning-aided channel estimation for DCSK-based MIMO-STBC systems”, in Data Science & Exploration in Artificial Intelligence (CODE-AI), vol. 1, 2024, CRC press.
- **Sheela S.J.**, Sonu, S.Y. V. Dalal, and S. Patil,, “MIMO and Chaotic Communication: Systematic Literature Review”, In International Conference On Innovative Computing And Communication (ICAC), pp: 41:55, Springer Nature Singapore.

#### Books

- NIL
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#### Editorial

- NIL

#### Reviewer of Journals

- NIL

*(Please give details in IEEE format)*

#### Editor/ Reviewer of Journal

- IEEE transactions on information forensics and security
- IEEE transactions on Systems, Man and Cybernetics: Systems
- IEEE Access
- Journal of supercomputing
- Taylor and Francis
- Springer SN computer science
- Journal for Engineering research and reports
- Journal of supercomputing

#### Patents

- Title: A device for curing dental restorative material and a method thereof  
Inventors: Shankarappa Suma, Shankarappa Jaya Sheela, Byalakere Rudraiah Chandrashekar, Hurkadle Jyothikiran  
Patent No.: 533063  
Patent Application Number: 202241031553

**Granted on:** 15-04-2024

- Title: A novel apparatus, method and system for grading the health condition of a subject

Inventors: Dr. S. J. Sheela, Dr. K. V. Suresh, Dr. Purushottamma T. L., G. Shubha and Cypertek solutions team

Patent Application Number: 202441053214

**Published on:** 25-10-2024

Invited Lectures, talks and workshops
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- NIL