



Dr. Kavitha Balamurugan

Professor and Head

Department of Electronics and Communication Engineering

Teaching Experience: 20 Years

Specialization : Optical Communication, Antennas, Signal Processing

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Dr. Kavitha Balamurugan is Head of Electronics and Communication Engineering Department, KCG College of Technology, Chennai, India. She received her Bachelor's degree in Electronics and Communication from Hindustan College of Engineering, Chennai under Madras University and Master's in Applied Electronics under Anna University. Awarded Doctorate for the topic Optical Wireless from Anna University.

Dr. Kavitha Balamurugan has been in the field of teaching for the past 18 years. She has received best teacher award twice and also teachers' day award. She has received a MODROB project grant from AICTE for an amount of Rs.11,44,000/- for modernization of Microprocessor and Internet of Things lab in 2019 and Rs.1,00,000/- from ATAL-AICTE towards conduction of FDP titled "Artificial Intelligence and Geospatial Technology for Surveillance for Infectious Disease" in May 2021

LIST OF SIGNIFICANT PUBLICATIONS:

International Journals:

1. "Fabrication of wearable piezoresistive strain sensors using graphene and its nanocomposites" , SPAST Abstracts, 1(01).
<https://spast.org/techrep/article/view/2062> Oct 2021
2. "MEDIBITS", **Journal of Physics**, Accepted. Will be published soon.
3. "IoT Based Smart Energy Meter and Theft detection", **Journal of Physics**, Accepted. Will be published soon.

4. "IoT based Electronic Voter Machine", **International Research Journal of Engineering and Technology (IRJET)**, Volume 7, Issue 04, ISSN: 2395 0056, pp. 1320-1323, Apr 2020,
<https://www.irjet.net/archives/V7/i4/IRJET-V7I4248.pdf>
5. "Monitoring Indoor Air Quality in Industries", **International Research Journal of Engineering and Technology (IRJET)**, Volume 7, Issue 04, ISSN: 2395 0056, pp.1933-1937, Apr 2020
6. "Bidirectional Video Transmission Using Li-Fi", **International Journal of Innovative Research in Technology**, Volume 5, Issue 11, ISSN: 2349-6002, 2019.
7. "Reconfigurable Routing Protocol with Optical Sphere in FSO MANET", **Concurrency and Computation-Practice & Experience**, Wiley Publishers, 2018; e4874, pp. 1-11. (ISSN online: 1532-0634 ISSN print: 1532-0626) IF.1.114, **Annexure 1**
8. "Performance Evaluation of Hierarchical Routing Protocol with Multiple Transceivers and Cluster Based Routing Protocol in FSO MANET", **Taga Journal of Graphic Technology**, Vol. 14, pp. 1169-1178 , 2018, **ANNEXURE 1**
9. " Integrated Adaptive Headlight & Speed Limiting Systems with Parking Assistance", **International Journal of Recent Innovation in Engineering & Research**, Vol. 3, pp. 34-40, Mar 2018
10. "Enhanced Hierarchical Cluster Based Routing Protocol with Optical Sphere in FSO MANET", **Springer (LNEE, volume 468)**, pp.1-8, 25 Nov 2017
11. "Cooperative Relay Based Communication over MultiUser Mobile Networks", **International Journal of Applied Science & Engineering Technology**, Volume 5 Issue VI, June 2017 IC Value: 45.98 ISSN: 2321-9653 dated 17.07.2017
12. "Multi-application Antenna for Indoor Distribution Antenna System like Wi-Fi, Wi-max and Bluetooth", **Proceedings of 2nd International Conference on Intelligent Computing and Applications. Advances in Intelligent Systems and Computing**, vol 467. Springer, Singapore. (2017) https://doi.org/10.1007/978-981-10-1645-5_21
13. "Multi Application Antenna for Wi-Fi, Wi-Max and Bluetooth for better Radiation Efficiency" in **International Journal of Scientific Engineering and**

Applied Science (IJSEAS), Vol 1, Issue 4, ISSN:2395-3470, Impact factor : 0.217, July 2015

14. "Distributed Game Theory Approach for Enriched Security Enhancement in MANET" in **International Journal of Applied Engg. Research**, ISSN:0973-4562 Vol.10, Number9, pp 7129-7133, Feb 2015 , (Annexure 2 AU Journal)
15. Data Transmission using Multiple Transcievers in Indoor Optical Wireless Communication in **International Journal of Power Control and Computation (IJCSC)**, Vol.7, No.2 (2015) pp. 123-126 , Impact factor : 2.01, 2015
16. "Brain Tumor Detection using Fuzzy C Means Segmentation" in **International Journal of Power Control and Computation (IJCSC)**, Vol.7, No.2 (2015) pp. 123-126 , Impact factor : 2.01, 2015
17. "Achieving Higher Network Security by Preventing DDos Attacks Using HONEYPOT" in **International Journal of Computer Network & Security (IJCNS)** Vol.6, No.1 (2015) pp.40-45, Impact factor : 2.561, Jan-Mar 14

Conferences

1. "Fabrication of wearable piezoresistive strain sensors using graphene and its nanocomposites" in ICTSGS Conference, 2021
2. Paper titled "Smart Pill Box" in National Conference on Innovation in Engineering and Technology" NCIET 2022, Velammal College of Engineering & Technology, Madurai on Nov 24,2022
3. Paper titled "MEDIBITS", in International Conference on Technological Advancement in Computer and Communication 2021 at Adhiparasakthi Engineering College, Melmaruvathur on 31.03.21.
4. Paper titled "IoT Based Smart Energy Meter and Theft detection", in International Conference on Technological Advancement in Computer and Communication 2021 at Adhiparasakthi Engineering College, Melmaruvathur on 31.03.21.
5. Paper titled " Adaptive Headlight , Speed Limiting & Parking Assistance" in IETE National Conference on Computing and Communication 2018 on 17.03.2018
6. Paper titled "Multi Application Microstrip Patch Antenna" in IETE National Conference on Computing and Communication 2018 on 17.03.2018

7. Optical and Microwave Technologies, Proceedings of International Conference on Nextgen Electronic Technologies: Silicon to Software (ICNETS2), Vol. IV, "Enhanced Hierarchical Cluster Based Routing Protocol with Optical Sphere in FSO MANET", Mar 23-25, 2017, VIT, Chennai.
8. Paper titled " Outage Analysis of Hybrid RF & FSO of MIMO Transmission Communication Systems" in National Level Conference on Contemporary Approaches of Industrial IOT in Real Time Environment in KCG College of Technology, 05.12.2017
9. Paper titled " Recontenna" in National Level Conference on Contemporary Approaches of Industrial IOT in Real Time Environment in KCG College of Technology, 05.12.2017
10. Paper titled "Survey on Cooperative Relay Based Data Transmission", International Conference on Advances in Engineering and Technology (ICAET-2016)
11. Paper titled "Multi-application Antenna for Indoor Distribution Antenna System like Wi-Fi, Wi-max and Bluetooth", [2nd International Conference on Intelligent Computing and Applications](#), 2016
12. Paper titled "Data Transmission using Multiple Transceivers in Indoor Optical Wireless Communication", National Conference on Recent Trends in Power, Control & Networking, Embedded & Communication Engg. RTPCNEC-2015
13. Paper titled "Brain Tumor Detection using Fuzzy C Means Segmentation", National Conference on Recent Trends in Power, Control & Networking, Embedded & Communication, 2015
14. Paper titled "Distributed Game Theory Approach for Enriched Security Enhancement in MANET", International Conference on Engineering Technology & Science, 2015
15. Proceedings of the International Conference on Engineering and Applied Sciences (ICEAS 2014), Vol.5, "Efficient Routing Protocol for Smooth Routing in FSO MANET, Mar 5-7, 2014, S.R.I. College of Engineering and Technology, Vandavasi.
16. Proceedings of International Conference on Engineering and Applied Sciences (ICEAS 2014), "Achieving Higher Network Security by Preventing DDOS Attacks Using HONEYPOT"

Patents:

1. German patent titled "A MEDICAL DATA MANAGEMENT SYSTEM" was granted in Mar'22.
2. Patent titled "Life Vehicle Communication Using LIFI" Application Number 201741022947 published on 30/06/2017 and has been sent for re examination on 11.1.21
3. Patent titled "Secured Voting Protocol for Electronic Voting Machine based on IoT" Application Number 202041040264 filed on 17/09/2020 and has been sent for re examination on 11.1.21

Events Conducted :

- Entered into CoE for youth empowerment powered by Honeywell on 11.10.21
- DAB meeting was organized on 13.2.21
- Conducted ATAL AICTE 5 days FDP titled "Artificial Intelligence and GeoSpatial Technology in Surveillance for Infectious disease" from 23.8.21 to 27.8.21
- Telemedicine Workshop on 24.08.19
- TVASTRA symposium conducted on 14.08.19
- Analog Discovery Kit workshop conducted on 3rd Aug 2019
- 6 webinars were conducted by prominent personalities during the pandemic period.
- Department Alumni Coordinator and Overall Alumni Coordinator since Dec 2017. Was the Overall Coordinator when **Golden Convergence Alumni Meet** was conducted.
- Coordinated alumni meet on 14.12.19
- **20 Alumni webinars** were conducted during the pandemic period
- Alumni mock interviews and Guest Lectures conducted every year.

Invited Lectures:

Details	Activity	Period
Reviewer	Journal Optical Engineering SPIE Anna University Annexure 1	2016-2017
Reviewer	Journal Photonic Communications Springer Publishers Anna University Annexure 1	2018- Till date
Optical Ground Wire Communication (OPGW)	GE training to Maharashtra Electricity Board Engineers Consultancy worth Rs. Rs.12,00,000 in 2017.	29.8.17 - 31.8.17 (3 Days) 1.9.17,4.9.17 & 5.9.17 for 3 batches .

- Session Chair at “International Conference "Innovative Computing, Intelligent Communication and Electrical System (ICSES 2021)" on 24.9.21 & 25.9.21 in St. JOSEPH’S INSTITUTE OF TECHNOLOGY, Chennai.
- Reviewer in IFERP conference ICMIAR 21 on 25.11.21 & 26.11.21
- Session Chair at “IETE CHENCON 22” on 20.5.22 & 21.5.22 in Sri Venkateshwara College of Engineering, Chennai
- Conducted **Mock Interview** on “ **Aligning Students to Industry**” on 21.08.21
- Conducted 5 days "ATAL Online Faculty Development Program on “**Artificial Intelligence and Geospatial Technology in Surveillance for Infectious Disease**” (Received funding of Rs.93,000) from 23.08.21 - 27.8.21
- Conducted placement talk by Mr. K. Harish Kumar, Director, Capgemini & Inauguration - **VLSI/Embedded Lab** on 24.3.22
- Completed assembling of 100 Low Cost LED Lamps for Y's Men 100 years Celebrations
- Invited as **core committee member** 3rd International Conference on Multidisciplinary Innovation in Academic Research (ICMIAR-2021), Chennai, India on November 25th and 26th 2021
- **Session Chair** for IEEE sponsored 2021 International Conference on Innovative Computing, Intelligent Communication and Electrical System (ICSES 2021) on 25.9.21
- **Judge** as Alumnus of HCE, in Project Expo “ Gyan Disha 2020” conducted by HITS, 8-11 July,2020
- Resource person in conducting FDP “Teacher Adaptation for Effective Learning” 25-28 Nov,2019
- Resource Person for Seminar on “UWB Antenna Design” held at KCG College of Technology in 9 & 10 Nov, 2017

Notable Contribution:

- Mentored team “ Sparkle Fiddle” in SIH Senior Hardware Edition and won **first prize** and **1 Lakh cash prize** in **Smart India Hackathon** held at Kalasalingam University conducted by **AICTE**
- Invited to be a **member of Anna University Board of Studies** Framing of UG Curriculum & Syllabus (CSE Stream & Information and Communication)
- Invited to be a **member of Anna University Syllabus Sub Committee**-Revision of Curriculum and Syllabi under R2021 for constituent colleges and non-autonomous affiliated institutions.
- Arranged **IIITDM internship** for 3 UG students this academic year
- Arranged **IIITDM internship** for 1 PG student and presented paper titled “Fabrication of wearable piezoresistive strain sensors” in First International Conference on Technologies for Smart Green Connected Society 2021 (ICTSGS)
- Mentored project titled “**THERMO ELECTRIC SELF HEATING SHOES**” and won 3rd place in **Innocon’ 22** on 14.5.22

- Mentored project titled “**Monitoring Parameters in Cold Storage Supply Chain**” and they are into AICTE **SIH finals** conducted from **25.8.22 - 29.8.22**
- Mentored students for developing App “ Brain Death Certification” for Mohan Foundation (NGO to promote ethical organ donation & transplantaion) and “ Organ Donation App” and it got published on 28 Jun 2020
- Student team consisting of Joshua, Gowtham and Manoj Kumar for the project titled “Integrated Adaptive Headlight and Speed Limiting Systems with Parking Assistance “qualified in top 25 in HW Hackathon.18.1 conducted by Forge Accelerator, Coimbatore held on - Feb 7 - 9, 2018
- Initiated CoE with Capgemini Engineering and Honeywell Automation (I) Ltd - **80 students** were trained on “ **Microsoft Azure AI Engineer Associate** “ for 100 hours

Funding and MoU Details :

- Funding of Rs.11,44,000/- for MODROB from AICTE for an amount of Rs.11,44,000/- for modernization of Microprocessor and Internet of Things lab in 2019.
- Funding of Rs.1,00,000/- for conduction of FDP titled “Artificial Intelligence and Geospatial Technology in Surveillance for Infectious Disease” from 23.8.21 to 27.8.21
- Signed MoU with MedIndia Health Network Pvt Ltd., on 13.12.19 and Tesla Minds (Core Company) on 01.04.21

Book Published:

- Published “Communication Theory” Text Book with Alpha International Publication

Awards received:

- I had received Best Teacher Award 2 times and also Teachers Day Award.
- Received certificate of Appreciation for receiving Modrob Fund
- Received certificate of Appreciation for completing Ph.D.
- Received Best Faculty Award from Knowledge Research Academy on 29th Jan,2023

Kavitha Balamurugan
Professor & Head