Department of ECE

Name	*Dr.P.MAHALAKSHMI*				
Date of Birth	26-06-1990				
Unique ID	*1-43877370381*				
Educational Qualifications	*Ph.D*				
Designation	ASSOCIATE PROFESSOR				
Email ID	maha.lakshmi@sethu.ac.in				
Alternate Email ID	maha.lakshmijun26@gmail.com				
Experience	Industry	Teaching	Others	Total	
	-	6 Y 7 M	-	6.7	
Date of Joining the Institution	22.01.2024				
Area of Specialization	***COMMUNICATION***				

Courses taught	1. Electronic Devices 2. Communication Theory 3. Fiber Optic networks 4. Circuit Theory 5. Digital Communication 6. Antenna and wave propagation 7. Optical Communication and networks 8. Professional ethics and human values
Research Focus	***Optical Communications, Biosensors***
Subject Competency	1. Electronic Devices 2. Communication Theory 3. Fiber Optic networks

No. of papers published	National Journals	International Journals	Conferences
	2	***10***	***03***

PG Specialization	M.E - Communication Systems
Ph.D. Specialization	INFORMATION AND COMMUNICATION
Patents (Filed & Granted)	***3***

Academic Credentials

Level	Degree	Specialization	University	Year of Completion
UG	B.E	ECE	Anna University, Chennai	2011
PG	M.E	Communication Systems	Anna University, Chennai	2013
Ph.D	Ph.D	Information and Communication	Anna University, Chennai	2023

Details of Journal Publication:

1. Ramanujam, Nambi R., I. S. Amiri, Sofyan A. Taya, Saeed Olyaee, R. Udaiyakumar, A. Pasumpon Pandian, K. S. Joseph Wilson, **P. Mahalakshmi**, and P. P. Yupapin, "Enhanced sensitivity of cancer cell using one dimensional nano composite material coated photonic crystal", *Microsystem Technologies* 25 (2019): 189-196.

2. Sreekanth, Kandammathe Valiyaveedu, **Perumal Mahalakshmi**, Song Han, Murugan Senthil Mani Rajan, Pankaj Kumar Choudhury, and Ranjan Singh. "Brewster Mode-Enhanced Sensing with Hyperbolic Metamaterial", *Advanced Optical Materials* 7, no. 21 (2019): 1900680.

3. El-Khozondar, Hala J., **P. Mahalakshmi**, Rifa J. El-Khozondar, N. R. Ramanujam, I. S. Amiri, and P. Yupapin, "Design of one dimensional refractive index sensor using ternary photonic crystal waveguide for plasma blood samples applications", *Physica E: Low-dimensional Systems and Nanostructures* 111 (2019): 29-36.

4. Ramanujam, N. R., KS Joseph Wilson**, P. Mahalakshmi**, and Sofyan A. Taya, "Analysis of photonic band gap in photonic crystal with epsilon negative and double negative materials", *Optik* 183 (2019): 203-210.

5. Taya, Sofyan A., Anas A. Alkanoo, Nambi R. Ramanujam, **Perumal Mahalakshmi,** and Dhasarathan Vigneswaran. "Photonic crystal with epsilon negative and double negative materials as an optical sensor", *Optical and Quantum Electronics* 50 (2018): 1-11.

6. Sreekanth, Kandammathe Valiyaveedu, **P. Mahalakshmi**, Song Han, D. Vigneswaran, Mani Rajan, Rajan Jha, and Ranjan Singh, "A terahertz Brewster switch based on superconductor hyperbolic metamaterial" *Journal of Applied Physics* 128, no. 17 (2020).

7. Vadivu, N. Shanmuga, Sameh S. Mahdi, Sofyan A. Taya, Anas A. Alkanoo, Ibrahim M. Qadoura, **P. Mahalakshmi**, and MS Mani Rajan, "Transverse magnetic mode slab waveguide optical sensor in the presence of conducting interfaces", *Optik* 178 (2019): 1090-1096.

8. Vasudevan, B., M. Ayyadurai, R. Maheswar, **P. Mahalakshmi**, and Iraj S. Amiri, "Numerical study on optical properties of non-circular metamaterial optical fiber", *Results in Physics* 10 (2018): 55-60.

9. **Mahalakshmi, P**., S. Venkatesh, M. Sumathi, R. Yamunadevi, N. Ayyanar, and M. S. Mani Rajan, "Manipulating high birefringence in elliptical core meta fiber by varying metal/dielectric concentration of the framed AMM", *Optical and Quantum Electronics* 49 (2017): 1-13.

10. **Mahalakshmi, P**., S. Arun Prakash, and MS Mani Rajan, "Design of germanium core with anisotropic metamaterial cladding optical fiber in mid-infrared range applications", *Optical and Quantum Electronics* 52 (2020): 1-17.

11. **Mahalakshmi, P**., P. K. Choudhury, MS Mani Rajan, M. Sharma, and R. Maheswar, "On the dual core anisotropic metamaterial clad polarization splitter", *Optik* 185 (2019): 1295-1302.

12. **MAHALAKSHMI, PERUMAL**, Maher AL Shayeb, and Rehana Basri. "Investigation of tuberculosis sensing using graphene coated metamaterial fiber", *Physica Scripta* (2024).

13.**Mahalakshmi.P,** Abdullah N. Alodhayb, Khalid E. Alzahrani, Saravanan Pandiaraj, "Detection of acetone with ITO based plasmonic metamaterial fiber in visible to infrared", Journal of Optics, Springer, April, 2025, 10.1007/s12596-025-02733-4.

14.Dr.P.Mahalakshmi, N.Aravindh, "**Neuro Drive**", International Journal of Innovative Research in Computer and Communication Engineering, April, 2025.

15.Rampriya, B., **Mahalakshmi, P.,** Wekalao, J. et al., "Ultra-Efficient Broadband Tungsten Plasmonic Solar Absorber Optimized by Stacking Ensemble Machine Learning for Thermal Energy Harvesting", Plasmonics (2025), https://doi.org/10.1007/s11468-025-03081-6

16. P. Mahalakshmi, Jacob Wekalao, M. Ramkumar Raja, P. Ashok, "Guiding mechanism with superconductor property in metamaterial cladding fiber configuration", Optical Fiber Technology, Volume 94, Nov 2025, 104333, ISSN 1068-5200, https://doi.org/10.1016/j.yofte.2025.104333.

Details of Conference attended:

1. Methaprian, S. K., N. Ayyanar, **P. Mahalakshmi**, M. Sumathi, D. Vigneswaran, and MS Mani Rajan. "Design of temperature sensor using liquid filled photonic crystal fiber." In *2016 IEEE Conference on Recent Advances in Lightwave Technology (CRALT)*, pp. 1-5. IEEE, 2016.
2. Swetha, R., **P. Mahalakshmi**, R. Vigneshram, T. Janani, and D. Vigneswaran. "Design of Directional Metamaterial Antenna for UWB Applications." In *2018 International Conference on Communication and Signal Processing (ICCSP)*, pp. 1023-1025. IEEE, 2018.
3. **Dr.P.Mahalakshmi,** Dr. M.S.Manirajan, "Optical properties of hollow core anisotropic metamaterial fiber in visible region : Numerical analysis**"**, International Conference on Advanced functional materials and energy applications, Feb, 2025.
4. **Dr.P.Mahalakshmi,** N.Aravindh, "**Neuro Drive**", National Conference on Emerging Trends in Information and Communication technologies, Apr, 2025.
5. **Dr.P.Mahalakshmi**, A.Akshaya, M.Chandra Prabha, "Numerical investigation of photonic crystal fiber for cancer cell detection", National Conference on Emerging Trends in Information and Communication technologies, Apr, 2025.
6. **Dr.Mahalakshmi.P**, Anandha Kalaimani.M, Abdul Rahman.M, Abdul Salam.S, "IoT enabled automatic grain soaker", National Conference on Emerging Trends in Information and Communication technologies, Apr, 2025.
7. **Dr.P.Mahalakshmi,** V.Vignesh, B.Vignseshwaran, V.Vikash, "Smart home LPG gas leakage detector system", National Conference on Emerging Trends in Information and Communication technologies, Apr, 2025.

Details of Patents Filed and Granted:

1. J.Rajalakshmi, M.Maheswari, S.Siva Ranjani, **P.Mahalakshmi**, A.Arun, S.Janarthanan, Michael Vinoline Rinoj, T.Muthuraja**, "**ANTENNA DIVERSITY TECHNIQUES FOR IMPROVED RELIABILITY", 202441084774, 2024.

2. **P.Mahalakshmi,** Akku Madhusudhan, Ashtha Arya, Sneha Padiyal, P.Anbarasan, Suvik Chakraborthy, "Wearable device for real time monitoring of vital signs using AI and Optical Sensors", 202541015772- A, 2025.

3. V.Sivaraman, K.T.Anand, Prakash D, **P.Mahalakshmi**, Kandavel B, Rajiniganth p, "Smart adaptive cooling system for electric vehicle batteries", 202541027637 A, 2025.