# Dr. Chandrika T N

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## Education

| | Degree | Year | Institute | Specialization |
|---|---|---|---|---|
| 1 | Ph.D | 2018 | IISc, Bangalore | Integrated Photonics for sensor Applications |
| 2 | M.Tech. | 2007 | SJCE, Mysore | Industrial Electronics |
| 3 | BE | 2005 | SSIT, Tumkur | Telecommunication |
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## Professional Experience

| | Date (from-to) | Designation | Organization |
|---|---|---|---|
| 1 | 1st August 2019 to Till date | Associate Professor | SIT, Tumkur |
| 2 | 1st Jan 2011 to 31st July 2019 | Assistant Professor | SIT, Tumkur |
| 3 | 25th Jan 2008 to 31st December 2011 | Lecturer | SIT, Tumkur |
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## Affiliations of Professional organizations

- Senior Member, IEEE
- Branch Counselor, IEEE Photonics and ComSoc SIT Student Chapters
- Executive Committee Member, IEEE Photonics Society Bangalore Chapter

## Awards and Honors

- Best paper award for the paper titled “Design and Analysis of Rib Waveguide Bragg Grating for Multiplexed Biosensing Application”, Proceedings of

CONECCT 2021: 7th IEEE International Conference on Electronics, Computing and Communication Technologies, Year 2021

## Courses Taught

Undergraduate Courses

- Multimedia Communication
- Fundamentals of VLSI Design
- Applied  Numerical Methods
- Digital Electronic Circuits
- Digital Design using VHDL
- Digital communication
- Computer Communication Networks
- Optical Fiber Communication
- Logic Design
- Project Management
- Optical Networks
- Ad-Hoc Wireless Networks
- Embedded Systems
- Introduction to C++
- Object Oriented Programming using C++
- Data Structures using C
- Introduction to C Programing

Postgraduate Courses

- Communication Protocols

## Research Guidance

| Sl. no | Name of the Scholar | Title | Year of completion |
|---|---|---|---|
| 1 | Naik Parrikar Vishwaraj | Waveguide Bragg Gratings for Biosensing Applications | 2024 |

## Research Areas

- Integrated Photonics for Sensing Applications
- Nano sensors
- Quantum Sensors
- Free Space Optical Communication

## Publications

Journals

- Anupama Shivamurthy, Rakshith Boranna, Mahesh Chowdary Kongara, Chandrika Thondagere Nataraj, Raviprasad Kogravalli Jagannat & Gurusiddappa R. Prashanth, “Feasibility Studies on the use of Carbon Epoxy Composites for Humidity Sensing Applications,” *Wireless Pers Commun*, vol. 138, pp. 2657–2675, 2024.
- Naik Parrikar Vishwaraj, Chandrika Thondagere Nataraj, Ravi Prasad Kogravalli Jagannath, Srinivas Talabattula, Gurusiddappa R. Prashanth, “Machine learning assisted strip waveguide Bragg gratings design for refractive index-based biosensing applications,” *Optik*, vol. 300, 171622, pp. ISSN 0030-4026, 2024.
- Naik Parrikar Vishwaraj, Chandrika Thondagere Nataraj, Ravi Prasad Kogravalli Jagannath, Srinivas Talabattula, Gurusiddappa R. Prashanth, “Machine learning assisted cancer cell detection using strip waveguide Bragg gratings,” *Optik*, vol. 284, 170947, ISSN 0030-4026, 2023.
- Boranna, R., Vishwaraj, N. P., Pahal, S., Nataraj, C. T., Jagannath, R. K., Nanjunda, S. B. Prashanth, G. R., “Fast-dip layer-by-layer self-assembly of polyelectrolytes as a low-cost biosensing platform,” *Macromolecular Chemistry and Physics*, vol. 223, 15, 2022.
- Rakshith Boranna, Chandrika Thondagere Nataraj, Shivananju Bannur Nanjunda, Suman Pahal, Ravi Prasad Kogravalli Jagannath, Gurusiddappa R. Prashanth, ” Fluorescence Signal Enhancement by a Spray-Assisted Layer-by-Layer Technique on Aluminum Tape Devices for Biosensing Applications, ” *Langmuir*, 38, 10, 3149–3157, 2022
- Rakshith Boranna, Chandrika Thondagere Nataraj, Raviprasad Kogravalli Jagannath, Suman Pahal, Manoj M. Varma and Gurusiddappa R. Prashanth, “Spin-speed independent thickness and molecular adsorption behaviour of polyelectrolyte multilayers,” *Eur. Phys. J. Appl. Phys.,* 93,2, 20301, 2022.
- N. P. Vishwaraj, C. T. Nataraj, R. P. K. Jagannath, P. Gurusiddappa, and S. Talabattula, “Chip-scale Temperature-compensated Superstructured Waveguide Bragg Grating Based Multiparametric Sensor,” *Current Optics and Photonics*, vol. 4, no. 4, pp. 293–301, Aug. 2020.
- Chandrika Thondagere *et al.*, “Mathematical modeling of optical MEMS differential pressure sensor using waveguide Bragg gratings embedded in Mach Zehnder interferometer,” *J. Opt.* 20, 085802, 2018.

Conference Proceedings

- Chandrika T. N, Nischal. S, R. Sadiya, Sanjaykumar. B. S and Ninthyashree. M, "Machine Learning-Driven Analysis and Optimization of Optical Ring Resonator for Integrated Photonic Applications," *2025 3rd International*

*Conference on Smart Systems for applications in Electrical Sciences (ICSSES)*, Tumakuru, India, 2025, pp. 1-5.

- T. N. Chandrika, R. Ranjitha and G. R. Prashanth, "Tunable Wavelength Filter based on Liquid Crystal Resonant Devices for Optical Communication Systems," *2024 International Conference on Smart Systems for applications in Electrical Sciences (ICSSES)*, Tumakuru, India, 2024, pp. 1-5.
- Preksha T V; Gaganashree C; Shilpa S P and T. N. Chandrika, "Realization of Free Space Optical Communication," *2023 International Conference on Smart Systems for applications in Electrical Sciences (ICSSES)*, Tumakuru, India, 2023, pp. 1-5,
- N. P. Vishwaraj, D. K. C, C. T. Nataraj, R. P. K. Jagannath and G. R. Prashanth, "Comparative Analysis of Ridge and Slot Sidewall-Etched Waveguide Bragg Grating for Cancer Cell Detection," 2022 Workshop on Recent Advances in Photonics (WRAP), Mumbai, India, 2022, pp. 1-2.
- N. P. Vishwaraj Shrikant, Chandrika. T. N, R. K. J, S. T and G. R. Prashanth, "Design and Analysis of Rib Waveguide Bragg Grating for Multiplexed Biosensing Application," 2021 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT), Bangalore, India, 2021, pp. 1-5.
- B. R. Tejaswini and T. N. Chandrika, "Ring Resonator Based Optical Delay Line Device with Enhanced Delay," 2019 1st International Conference on Advances in Information Technology (ICAIT), Chikmagalur, India, 2019, pp. 512-515.
- B. Rakshith, T. N. Chandrika, M. M. Varma and G. R. Prashanth, "Ultra Low Cost All Polymer Systems for Biosensing Applications," 2018 IEEE SENSORS, New Delhi, India, 2018, pp. 1-3, doi: 10.1109/ICSENS.2018.8589843.
- Chandrika T. Nataraj, S. A. Samad, S. Talabattula, G. Hegde, and G. R. Prashanth, "Waveguide Superstructure Bragg Grating based Multiparametric Sensor for Pressure and Acceleration Measurement," in Frontiers in Optics 2017, OSA Technical Digest (online) (Optica Publishing Group, 2017), paper JW4A.53.
- Chandrika T. Nataraj, G. R. Prashanth, and S. Talabattula, "Guided Mode Resonance Grating based Optical Bio-sensor with Enhanced Bulk Sensitivity," in Advanced Photonics 2016 (IPR, NOMA, Sensors, Networks, SPPCom, SOF), OSA Technical Digest (online) (Optica Publishing Group, 2016), paper SeW1F.4.
- T. N. Chandrika, H. Dessalegn and T. Srinivas, "Ultra low-cost optical biosensor based on guided mode resonance grating filter," 2015 Workshop on Recent Advances in Photonics (WRAP), Bangalore, India, 2015, pp. 1-4, doi: 10.1109/WRAP.2015.7806010.