

# Manu K S

Department of Electrical Engineering, IIT Gandhinagar

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## EDUCATION

Degree	Institution	CPI/ %	Field of study	Year
Ph.D. (Pursuing)	Indian Institute of Technology, Gandhinagar	9.62	Electrical Engineering	2022-present
B.Tech.	Government Engineering College Barton Hill, Trivandrum	8.99	Electrical and Electronics Engineering	2016-2020
Higher Secondary	Viswabharathy Public School, Neyyattinkara, Trivandrum	93.4%	Computer Science	2014-2016

## DOCTORAL RESEARCH

### **Acoustic Metamaterials for Advancing Therapeutic Ultrasound Techniques; July 2022 – present [Ph.D. Thesis]**

- Developing multiple bandgap acoustic metamaterials for frequency filtering aimed at passive cavitation detection.
- Evaluating the effect of ambient conditions on the temporal evolution of subharmonic response from ultrasound contrast agents
- Investigating techniques for patient-specific ultrasound aberration correction using acoustic metamaterials.

## RESEARCH EXPERIENCE

### **Junior Research Fellow at Indian Institute of Science (IISc) Bangalore, on a collaborative project between IISc Bangalore, IIT Gandhinagar, and NIMHANS, Bangalore; March 2021 - June 2022.**

- Designed and developed a diffused reflectance spectroscopy-based probe for breast cancer margin assessment.
- Developed hardware interfaces for microfabricated sensor-based intraoperative probes.

## ACHIEVEMENTS

- Outstanding Graduate Teaching Fellow Award, Semester II, Academic year 2023-24 for co-teaching the course: ES116 - Principles and Applications of Electrical Engineering (IIT Gandhinagar).
- Best Poster Award at PhD research Showcase held at IIT Gandhinagar, August 2024.
- Best Poster Award at the IEEE South Asian Ultrasonics Symposium, IIT Gandhinagar, held from 27<sup>th</sup>-29<sup>th</sup> March 2024.
- Received the prestigious Prime Minister's Research Fellowship (PMRF), August 2023.

## JOURNAL PUBLICATIONS

- Joshi, R K., **K. S. Manu**, R. S. Hari, Krishnan A, Jayachandra M, Dandinarasaiah M, and Pandya H. J. "Automated ABR and MMN extraction using a customized headband for hearing screening." **Biomedical Signal Processing and Control** 94 (2024): 106264.

## PRESENTATIONS/CONFERENCE PROCEEDINGS

- **K. S. Manu**, Bisht S, Mercado-Shekhar K. "Design and Development of a Compact and Inexpensive Sinusoidal External Mechanical Vibration System for Ultrasound Shear Wave Elastography" **IEEE South Asian Ultrasonics Symposium**, Gandhinagar, India 27th -29th March 2024. – ***Best Poster Award***
- Joshi, R. K., **K. S. Manu**, R. S. Hari, Jayachandra M, and Pandya H. J. "Design, Development, and Validation of a Portable Visual P300 Event-Related Potential Extraction System." In **2022 IEEE Biomedical Circuits and Systems Conference (BioCAS)**, pp. 409-413. IEEE, 2022.
- Kamal, A. M, Pal U. M, **K. S. Manu**, and Pandya H. J. "Towards the Development of an Intraoperative Probe for Breast Cancer Margin Assessment." In **Optical Tomography and Spectroscopy**, pp. JM3A-2. Optica Publishing Group, 2022.

## APPLIED PATENTS

- A Nasal Septal Cartilage Device(applied on 21 Jan 2025)
- Multimodal Detection Device and Method for Cancer Margin Assessment (Filed from IISc Bangalore)

## SERVICE AND LEADERSHIP ROLES

- Student board member, International Society for Therapeutic Ultrasound, USA (2023-Present)
- Local Organizing Committee Member: IEEE South Asian Ultrasonics Symposium, 2024
- Volunteer, PHASE 2023 workshop at IIT Gandhinagar (2023)
- Chairman of ISTE student chapter, Government Engineering College Barton Hill (2019-2020)