

Bridging the gap between technology and healthcare, our team lead by Dr. Hardik J. Pandya pursues research in microsystem technologies for medical applications. Portable diagnostic devices, point-of-care testing, minimally invasive sensor technology, smart catheters, bioresorbable sensors, polymer MEMS and robotic tools for efficient surgical interventions are some of our prime research interests. Spanning across multiple disciplines, the field calls for the integration of various modalities (microfabrication, additive manufacturing, optics, microfluidics, etc.) to develop portable, cost-effective and rapid screening devices. Several projects such as E-Nose, Smart headband for EEG recording, portable cancer diagnostic tool, cytology-based cancer screening device, microchip for protein-protein interactions study, undertaken by the group addresses some of the major health problems affecting the underserved population in global settings. With extensive collaboration with scientists and clinicians across the globe and state-of-the-art research infrastructure, the interdisciplinary team contribute ideas and develop devices to tackle the technology gaps in healthcare and medicine. The collaborative effort contributes to newer diagnostic methods for global health. To learn more about our research projects, team, laboratory facilities, and our capabilities, navigate to our webpage below.

<http://beeslab.dese.iisc.ac.in/>

Research opportunities:

Applications are invited from highly motivated and research-oriented applicants for admission to Ph.D. Program in Biomedical and Electronic (10^{-6} - 10^{-9}) Engineering Systems Laboratory

Qualifications and Experience

We are looking for an enthusiastic and highly-motivated early-stage researcher with:

- Good knowledge in semiconductor technologies, microengineering, IC design tools.
- Familiar with MEMS technology, design and fabrication methods such as photolithography, diffusion, thin film deposition, wet/dry etch, etc.
- Excellent knowledge of electronic circuits and instrumentation, software development, machine learning algorithms.
- Hands-on experience in simulation and design tools such as CAD, SolidWorks, Multiphysics simulation tools such as ANSYS, COMSOL, etc.
- Experience in microfluidics, design, and microfabrication of biosensors.
- Interested in application-oriented development of innovative sensor integrated diagnostic tools.
- Excellent interpersonal communication skills and ability to work well in a teaming environment to develop strong relationships.
- Multidisciplinary understanding to develop diagnostic tools for translational research.