**Title:** Application of Digital Microfluidic Biochip and Machine Learning in the domain of Biomedical Engineering

**Speaker:** Dr Pampa Howladar completed her both M.Tech and PhD from IIEST Shibpur

**Date and Time:** 3rd March 2022 (Thursday), 2:00 PM

**Venue:** Online

## Abstract:

Biomedical engineering, often known as bioengineering, is the application of engineering concepts to biology and health care. Bioengineers collaborate with doctors, researchers in order to develop systems, equipment, and technologies to address clinical issues. A variety of life-enhancing and life-saving devices have been created by biomedical engineers. Diagnostics such as (a) Digital microfluidic biochip (lab-on-a-chip) and expert systems (b) Systems to monitor vital signs correlated with emotion states are examples of this. Besides this, there is no disputing that we live in a data-driven world. With our growing dependence on new technologies, organizations are able to collect raw data, run models, and obtain conclusions that support crucial choices. In this talk, the speaker will present some ideas on how different problems regarding routing, contamination, and threat mitigation in digital microfluidic biochips can be solved to achieve faster and simultaneous detection of multiple diseases using lesser blood samples. She will also discuss how different machine learning techniques can be applied for improving arrhythmia detection of ECG signals and affective state monitoring using physiological signals.

## Speaker Bio:

Dr Pampa Howladar completed her both M.Tech and PhD from IIEST Shibpur. She has secured a GATE scholarship from MHRD for her M.Tech studies. She was awarded Doctoral Merit Fellowship from UGC for pursuing PhD in 2013. She has worked in the area of Digital Microfluidic Biochips in her PhD. She has presented several novel design automation and testing methodologies in this area. Her research works have appeared in several reputed journals including transactions (IEEE TVLSI and IEEE/ACM TCBB) and also in refereed international conference proceedings. She is now actively exploring machine learning and artificial intelligence techniques for biomedical applications. Until now she has had three best paper awards during her both PhD and post PhD work.