

# ENERGY HARVESTING USING DROPLET-BASED MICROFLUIDICS FOR SELF-POWERED WEARABLES



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### **Research Interests:**

**Fabrication of MEMS device for Detection, Sensing and Energy Harvesting Application. Structure Property Correlation in Oxide, 2D semiconductors.**

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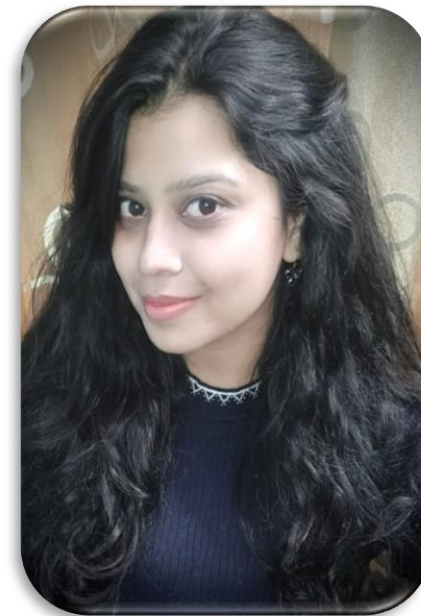
Department of Electrical Engineering, IIT Delhi

### **Research Interests:**

**MEMS, NEMS, Sensors, Energy Harvesting, Micro-magnetic Devices, Nonlinearity at micro/nano-scale.**



Harnessing electrical energy from low frequency vibration to power portable devices is a topic of great interest. Harvesting energy through vibration induced sliding of dielectric droplet (water) can be an attractive approach. By confining a droplet through a hydrophilic channel surrounded by hydrophobic surface contact angle hysteresis, which incurs loss and reduces transduction efficiency, can be reduced significantly. By moving this droplet through such kind of patterned precharged surface (electret) energy harvesting is possible by exploiting the concept of variable capacitor and electric double layer (EDL).



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