**압전 MEMS 기반 다목적 환경 센서**

**Piezoelectric MEMS based Multipurpose Environmental Sensors**

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**Abstract**

Emerging advanced materials and micro/nano-manufacturing techniques have enabled the development of high-performance MEMS/NEMS for a wide range of sensing applications. Specifically, high frequency piezoelectric MEMS resonators have shown great potential toward multi-functional sensor platforms for Internet of Things (IoT) applications thanks to their low power budget, CMOS friendly fabrication processes, and outstanding stabilities and measurement sensitivities. In this talk, I will briefly introduce the recent trends in MEMS based IoT sensors. As detailed examples, I will showcase 1) an ultra-low power aluminum nitride (AlN) piezoelectric sensing platform for temperature, gas, and magnetic field sensing, as well as 2) nanomaterials integrated Quartz Crystal Microbalance (QCM) for fine dust and salinity sensing. We strongly believe the above technologies can enhance the current state of MEMS sensor technologies, and even overcome the limitations of existing environmental sensing platforms.