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**강연제목: 미세유체 공진기를 이용한 단일 세포 메카노-물리 프로파일링**  
**Mechano-Physical Profiling of Single Cells Using a Microfluidic Resonator**

**Abstract:**

The mechanical and physical properties of cells, such as mass, volume, density, and stiffness, are essential for understanding the state and function of living cells. Changes in these cellular properties play a pivotal role in various biological processes, including cell movement, development, differentiation, and disease progression (e.g., cancer metastasis). In this talk, I will introduce a Mechano-Physical profiling technique that precisely measures the mechanical and physical properties of individual living cells. This technique utilizes a Suspended Microchannel Resonator (SMR), a vibrating cantilever with embedded microfluidic channels. By analyzing changes in resonance frequency as cells pass through embedded channel, the SMR can precisely quantify the mass, volume, density, and stiffness of single cells. Lastly, I will discuss applications in cell development and cancer growth, leveraging insights from these single-cell measurements.

**Brief Biosketch**

- 학사 Columbia University 물리학과 (2012)
- 박사 Massachusetts Institute of Technology (MIT) 물리학과 (2019)
- KIST 뇌과학연구소 위촉연구원 (2019.08 – 2021.06)
- KIST 뇌과학연구소 선임연구원 (2021.07 – 2023.08)
- 연구분야: 생체 계측 및 바이오센싱, MEMS, 세포역학