

Yu-Hsiang Hsu (許聿翔)

Associate Professor

B.S. in Mechanical engineering,

National Taiwan University, 2000

M.S. in Institute of Applied Mechanics,

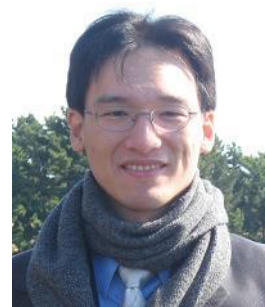
National Taiwan University, 2002

M.S. in Biomedical Engineering,

University of California, Irvine, USA 2006

Ph.D. in Biomedical Engineering,

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Dr. Yu-Hsiang Hsu joined the faculty of the Institute of Applied Mechanics at the National Taiwan University in August 2013. His research primary focus on four fields: (1) microsystems to develop microtissues for drug screening applications, including cardiac microtissue, vascularized microtissue, and microtumor; (2) plastic lab-on-a-chip devices for early and quantitative diagnostic methods for chronic human diseases, and integration with portable devices; (3) smart wearable devices: develop textile sensors for body movement, blood pressure, swallow sensing, and muscle activities. He teaches Introduction to Cellular BioMEMS and Biomicrofluidics, and Engineering and Physics of Human Body.

Selected Journal Papers

Lab-on-a-Chip

1. Y.H. Huang, C.F. Yang, Y.H. Hsu* “Development of a cardiac-and-piezoelectric hybrid system for application in drug screening.” *Lab Chip*, 20(18), 3423-3434, September 2020.
2. C.J. Lee, Y.H. Hsu* (2019, Sep). Vacuum pouch microfluidic system and its application for thin-film micromixers. *Lab on a Chip*, 19, 2834-2843.
3. Y.H. Hsu*, W.W. Liu, T.H. Wu, C. J. Lee, Y.H. Chen, P.C. Li (2019, Jan.) Study of diffusive- and convective-transport mediated microtumor growth in a controlled microchamber. *Biomedical Microdevices*, 21(1):7.
4. Y.H. Hsu*, W.C. Yang, Y.T. Chen, C.Y. Lin, C.F. Yang, W.W. Liu, S.Shivani, P.C. Li (2024, Apr). Spatially controlled diffusion range of tumor-associated angiogenic factors to develop a tumor model using a microfluidic resistive circuit. *Lab-on-a-Chip*, 24, 2644-2657.

Wearable Devices

5. Y.H. Hsu*, P.C. Liu, T.T. Lin, S.W. Huang, Y.C. Lai (2020, Nov). Development of an Elastic Piezoelectric Yarn for the Application of a Muscle Patch Sensor. *ACS Omega*, 5, 45, 29427–29438.
6. Y.H. Hsu*, C.H. Chan, W. C. Tang (2017, Nov). Alignment of multiple electrospun piezoelectric fiber bundles across serrated gaps at an incline: a method to generate textile strain sensors. *Scientific Reports*, 7, 15436.

In Vitro Diagnostic Devices

7. C.J. Lee, Y.H. Hsu* (2021, Dec). A size reduction method for rapid digital PCR using thin-film chip and vacuum pouch microfluidic system. *Microfluidics and Nanofluidics*, 26:4.
8. C.J. Lee, Y.H. Hsu* (2019, Sep). Vacuum pouch microfluidic system and its application for thin-film micromixers. *Lab on a Chip*, 19, 2834-2843.