



(국문/영문)이름: 박윤석/Yoonseok Park

(국문/영문)직위: 조교수/Assistant Professor

(국문/영문)소속: 경희대학교/Kyung Hee University

(국문/영문)기타소속: 정보전자신소재공학과/ Department of  
Advanced Materials Engineering for Information and  
Electronics

(국문/영문)강연제목:

## **Three dimensional bioelectronic interfaces to brain spheroids and assembloids**

**Abstract(영문):**

Complex, three dimensional (3D) assemblies of micro/nanomaterials form naturally in biological systems, where they provide sophisticated function in even the most basic forms of life. In spite of their broad potential utility in man-made devices, design options for analogous abiotic 3D mesostructures are severely constrained by the comparatively primitive capabilities that are available with established techniques for materials growth, assembly and 3D printing. This talk summarizes progress on strategies that rely on geometric transformation of preformed 2D functional micro/nanostructures into 3D architectures by controlled processes of actively induced compressive buckling. The emphasis is on the foundational materials and mechanics principles, computational approaches that enable inverse designs, and examples of applications in areas ranging from thermoelectrics to microelectromechanical systems to biologically inspired open mesoscale

microfluidic/electronic networks as functional interfaces to 3D cell cultures, including spheroids, organoids, assembloids and mini-brains.

**Brief Biosketch (간단한 이력, 연구/대외활동 소개, 국문/영문)**

**Assistant Professor (2022-Present)** Kyung Hee University, Department of Advanced Materials Engineering for Information and Electronics

**Postdoctoral Fellow (2018-2022)** Querrey Simpson Institute for Bioelectronics, Northwestern University, USA (Advisor : Prof. John A. Rogers)

**Doctor of Philosophy (2013-2017)** Dresden Integrated Center for Applied Physics and Photonic Materials, Technische Universität Dresden (Advisor : Prof. Karl Leo)

**Research Engineer (2008-2013)** LG Display, R&D Center