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기계공학부

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**연구분야**

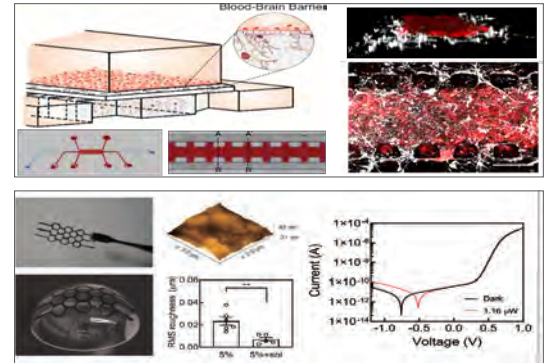
Tissue engineering  
Organs-on-chips  
3D printing of bioelectronics

**수상**

우수학위논문상, 대한기계학회, 2014  
Cum Laude, KAIST, 2012

**대표연구**

- **Microengineered human blood-brain barrier chip**
  - Microfluidic human blood-brain barrier model(Organ-on-a-chip)
  - Neurological disease study
  - Brain drug testing
- **3D printing of organic photodiode**
  - 3D printing of fully organic photodiode array
  - Fabrication of soft, flexible, and self-standing photodiode mesh array
  - Applications in retinal prosthesis systems



**주요 연구실적**

- Microengineered human blood-brain barrier platform for understanding nanoparticle transport mechanisms, Nature Communications, 2020
- Engineered heterochronic parabiosis in 3D microphysiological system for identification of muscle rejuvenating factors, Advanced Functional Materials, 2020
- Human blood-brain barrier on chips: featuring unique multicellular cooperation in pathophysiology, Trends in Biotechnology, 2021
- Engineered HDL-mimetic nanoparticles for targeted drug delivery to sonic hedgehog subtype medulloblastoma, PNAS, 2020
- Anti-atherogenic effect of stem cell nanovesicle targeting disturbed flow sites, Small, 2020

**학회 활동**

- Biomedical Engineering Society(BMES) 회원(2013~현재)
- Korean-American Scientists and Engineers 회원 (2014 ~현재)

**산학 협력 활동**

- (주) 멤스젠 자문(2021.09~현재)