



**박상민** 교수

기계공학부

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연구분야

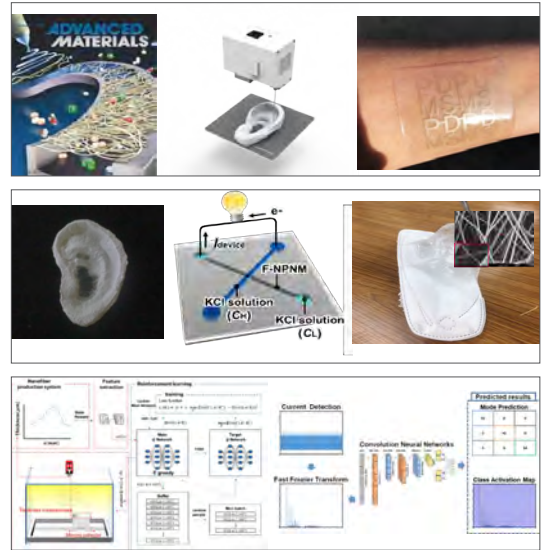
Nano/micro-manufacturing  
 Nano/micro-device for bio/energy/environment  
 AI-aided engineering

수상

젊은공학자상, 한국정밀공학회, 2021

**대표연구**

- Nano/micro-manufacturing
  - Advanced 2D/3D electrospinning for nanofiber assemblies
  - Hybrid 3D nano/micro-printing technique
  - AgNW Spray for flexible electronics
- Nano/micro-device for bio/energy/environment
  - Nanofibrous tissue scaffold
  - Salinity gradient-based energy harvester
  - Nanofibrous air filter
- AI-aided engineering
  - Reinforced learning-based nanofiber production system
  - CAM-based fault detection during electrospay
  - CNN-based acoustic metamaterials design



**주요 연구실적**

- Electrolyte-assisted Electrospinning for a self-assembled, free-standing nanofiber membrane on a curved surface, *Advanced Materials*, Vol.16, pp 1682~1687, 2015
- Ultra-thin, aligned, free-standing nanofiber membranes to recapitulate multi-layered blood vessel/tissue interface for leukocyte infiltration studies, *Biomaterials*, Vol.169, pp.22~34, 2018
- Direct Fabrication of Freestanding and Patterned Nanoporous Junctions in a 3D Micro-Nanofluidic Device for Ion-Selective Transport, *Small*, Vol. 16, pp.2000998, 2020
- Electrolyte solution-assisted electrospay deposition for direct coating and patterning of polymeric nanoparticles on non-conductive surfaces, *Chemical Engineering Journal*, Vol. 379, pp. 122318(2020)
- Uniform-thickness electrospun nanofiber mat production system based on real-time thickness measurement, *Scientific Reports*, Vol. 10, pp. 20847(2020)

**주요 연구과제**

- 멀티 스케일 하이브리드 3D 프린팅 공정/장치 개발, 한국연구재단, 3년, 3억원(3D 프린팅, 전기방사, 공기 필터)
- 나노섬유 필터 생산 자동화 시스템 개발, 한국연구재단, 1년, 3천만원(전기방사, 인공지능, 생산 자동화)
- 생체모방 귀 연골 보형물 개발, 부산대학교 융합과학기술원, 3천만원(생체 스케폴드, 3차원 나노섬유, 연골 재생)

**학회 활동**

- Topical Board Editor, *Sensors*(2020~2021)