

# Bio-inspired Extreme Materials Laboratory

## 생체모사 극한재료 연구실



**Prof. Sung Hoon Kang**

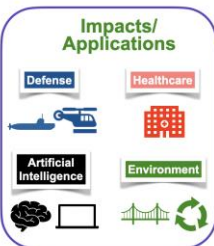
- ❖ Associate Professor, KAIST
  - ❖ Assistant Professor, Johns Hopkins University
  - ❖ Postdoctoral Fellow, Harvard University
  - ❖ Ph.D. in Applied Physics, Harvard University
  - ❖ M.S. in Materials Science and Engineering, MIT
  - ❖ B.S. in Materials Science and Engineering, SNU
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### Selected Publications

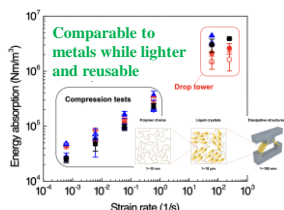
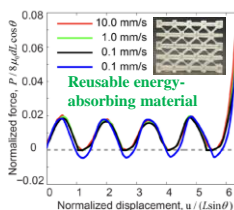
- 2025 Science Advances
- 2024 Materials Horizons
- 2023, 2009 Science
- 2022, 2020, 2016, 2015, 2013 Advanced Materials
- 2019, 2018, 2011 Nature
- 2017, 2014, 2011 Physical Review Letters
- 2010 ACS Nano

## Research Vision/Topics

### Extreme Materials for Harsh Environments



### Metamaterials



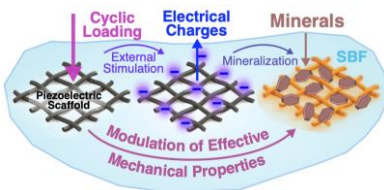
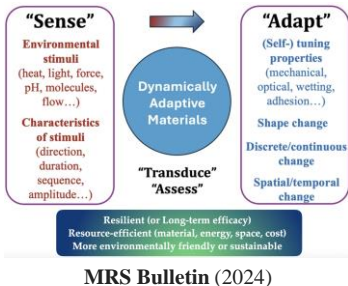
Advanced Materials (2015)

Advanced Materials (2022)

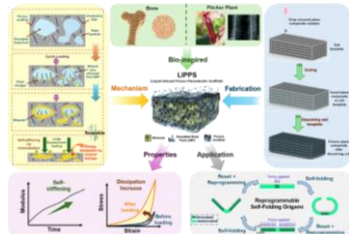
Toward Resilient, Sustainable, and Healthy Future

[Materials that do not exist in nature]

### Bioinspired adaptive materials



Advanced Materials (2020)



Science Advances (2025)

[Materials that can 'sense' and 'adapt']

## Mentoring approach

**Emphasis on understanding concepts and building intuitions**



**Emphasis on asking good questions and finding important problems** followed by research design, and effective communication



**Encouragement of participation and teamwork**



**Introduction of cutting-edge tools/research, and new perspectives**



## Group activity



## Alumni

- 3 Postdoctoral fellows, 6 Ph.D. students, 2 D.Eng. students, 24 M.S. students, 14 Undergraduate students
- **Academia:** 1 faculty, Ph.D. students at MIT, UC Berkeley, UIUC, Georgia Tech, Purdue, UCLA, Duke, Johns Hopkins, University of Toronto, Lehigh, and RPI
- **Industry:** Apple (4), Google, IBM, Lockheed Martin, Bain & Company, Applied Physics Laboratory (2), medical device companies (9)
- **Government:** KIST, U.S. Navy, U.S. Patent and Trademark Office