

KYUN KYU KIM

Curriculum Vitae

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Research Interests

- Augmented electronics for human-machine interaction based on nano materials and machine intelligence
- *Soft neuromorphic electronics*
- *Laser fabricated three-dimensional electronics*
- *Deep-learned skin-like sensors*
- *Nanowire based transparent electronics and sensors*

Research Experience

- Postdoctoral Research Fellow 2021.09-Present
Bao Research (baogroup.stanford.edu)
 - *Intelligent system with stretchable devices*
- Research Scientist 2021.03-Present
Soft Robotics Research Center (SRRC)
 - *Augmented skin-like electronics combined with machine intelligence*
- Graduate Research Assistant 2014.03-2021.02
ANTS Lab (Advisor : Prof. Seung Hwan Ko)
 - *Soft neuromorphic electronics*
 - *Laser fabricated three-dimensional electronics*
 - *Deep-learned skin-like sensors*
 - *Nanowire based transparent electronics and sensors*
- Undergraduate Researcher 2012.03-2014.02
Nanomaterial, Nanomanufacturing and Nanodevice Lab (Advisor : Prof. Chang Soo Han)
 - *CNT, AgNW based highly stretchable electrode*

Education

- **Ph.D. in Mechanical Engineering** 2016.09-2021.02
Seoul National University, Seoul, Korea
ANTS Lab (Advisor : Prof. Seung Hwan Ko)
- **M.S. in Mechanical Engineering** 2014.03-2016.02
Seoul National University, Seoul, Korea
ANTS Lab (Advisor : Prof. Seung Hwan Ko)
(Thesis : Highly Sensitive and Stretchable Multidimensional Strain)

Sensor)

- **B.S. in Mechanical Engineering** 2010.03-2014.02
Korea University, Seoul, Korea
Graduation with Great Honor
- **Daejeon Science High School, Daejeon, Korea** 2008.03-2010.02.
One-year early graduation

Honor and Awards

- Post-Doctoral Overseas Training Fellowship, National Foundation of Korea 2021
- 2020 Outstanding Doctoral Dissertation Award, Seoul National University
- 2020 Seoul National University Youlchon AI Honorable Mention (top 10 entry)
- Naver AI gitHackerthon Competition 2019, Entered the top 40 entry
- Global PhD Fellowship 2017 granted by the National Research Foundation of Korea
- Scholarship for academic excellence, Mechanical Engineering, Korea University, 2012
- Scholarship for academic excellence, Mechanical Engineering, Korea University, 2011
- Scholarship for academic excellence, Mechanical Engineering, Korea University, 2010
- 55th National Science Exhibition (participated by 1,720 teams) Awarded the 1st Prize by the President of South Korea, Lee M.B, 2009
- V-th Asian Pacific Astronomy Olympiad, 2nd Prize medal, 2009

Journal Publications

First Authored Papers

- A1. **Kyun Kyu Kim**, Joonhwa Choi, Joon-hong Kim, Sangwook Nam, and Seung Hwan Ko*, [Evolable Skin Electronics by In situ and In operando Adaptation](#), *Advanced Functional Materials* (2021)
- A2. **Kyun Kyu Kim**, Joonhwa Choi, and Seung Hwan Ko*, [Smart Energy Harvesting Untethered Soft Electronics Devices](#), *Advanced Healthcare Materials* (2021)
- A3. **Kyun Kyu Kim**, Youngsang Suh, and Seung Hwan Ko*, [Smart Stretchable Electronics for Advanced Human-Machine Interface](#), *Advanced Intelligent Systems* (2020)
- A4. Phillip Won, **Kyun Kyu Kim**, Hyeonseok Kim, JungJae Park, Inho Ha, Jaeho Shin, Jinwook Jung, Hyunmin Cho, Jinhyeong Kwon, Habeom Lee, and Seung Hwan Ko*, [Transparent Soft Actuator/Sensors and Camouflage Skins for Imperceptible Soft Robotics](#), *Advanced Materials* (2020)
- A5. **Kyun Kyu Kim**, InHo Ha, Min Kim, Joonhwa Choi, Phillip Won, Sungho Jo* , and Seung Hwan Ko*, [A deep-learned skin sensor decoding the epicentral human motions](#), *Nature Communications*, 11, 2149 (2020)
- A6. Jinwook Jung, **Kyun Kyu Kim**, Young. D. Suh, Sukjoon Hong, Junyeop Yeo, and Seung Hwan Ko*, [Recent progress in controlled nano/micro cracking as an alternative](#)

nano-patterning method for functional applications, *Nanoscale Horizons* (2020)

- A7. **Kyun Kyu Kim**, InHo Ha, Phillip Won, Deog-Gyu Seo, Kyu-Jin Cho & Seung Hwan Ko*, [Transparent wearable three-dimensional touch by self-generated multiscale structure](#), *Nature Communications*, 10, 2582 (2019)
- A8. **Kyun Kyu Kim**, Sukjoon Hong, Hyun Min Cho, Jinhwan Lee, Young Duk Suh, Jooyeun Ham, and Seung Hwan Ko*, [Highly Sensitive and Stretchable Multidimensional Strain Sensor with Prestrained Anisotropic Metal Nanowire Percolation Networks](#), *Nano Letters*, 15, 8 (2015)
- A9. Ju Yeon Woo, **Kyun Kyu Kim**, Jongsoo Lee, Ju Tae Kim and Chang-Soo Han*, [Highly conductive and stretchable Ag nanowire/carbon nanotube hybrid conductors](#), *Nanotechnology*, 25, 28 (2013)

Contributing Authored Papers

- B1. Hyunseok Kim, Joonhwa Choi, **Kyun Kyu Kim**, P. Won, S. Hong*, S.H. Ko*, [“Biomimetic Chameleon Soft Robot with Artificial Crypsis and Disruptive Coloration Skin”](#), 12, 4658, *Nature Communications*, (2021)
- B2. Inho Ha, Minwoo Kim, **Kyun Kyu Kim**, Sukjoon Hong, Hyunmin Cho, Jinhyeong Kwon, Seonggeun Han, Yeosang Yoon, Phillip Won, and Seung Hwan Ko*, [“Reversible, Selective, Ultrawide-Range Variable Stiffness Control by Spatial Micro-Water Molecule Manipulation”](#), *Advanced Science*, (2021)
- B3. Dongkwan Kim, Jinhyeong Kwon, Jinwook Jung, **Kyun kyu Kim**, Habeom Lee, Junyeob Yeo, Sukjoon Hong, Seungyong Han and Seung Hwan Ko*, [A Transparent and Flexible Capacitive-Force Touch Pad from High-Aspect-Ratio Copper Nanowires with Enhanced Oxidation Resistance for Applications in Wearable Electronics](#), *Small Methods*, 2, (2018)
- B4. Jinwook Jung, Habeom Lee, Inho Ha, Hyunmin Cho, **Kyun Kyu Kim**, Jinhyeong Kwon, Phillip Won, Sukjoon Hong, Seung Hwan Ko*, [Highly stretchable and transparent electromagnetic interference shielding film based on silver nanowire percolation network for wearable electronics applications](#), *ACS applied materials & interfaces* 9 (51) (2017)
- B5. Young D Suh, Junyeob Yeo, Habeom Lee, Sukjoon Hong, Jinhyeong Kwon, **Kyun kyu Kim**, Seung Hwan Ko*, [Control and Manipulation of Nano Cracks Mimicking Optical Wave](#), *Scientific Reports*, 5, 17292 (2015)

Patents

- c1. **Kyun Kyu Kim**, Inho Ha, Seung Hwan Ko [High sensitivity skin type sensor and human body motion tracking method using the same](#), Domestic Patent (2020)
- c2. **Kyun Kyu Kim**, Inho Ha, Seung Hwan Ko, [Transparent flexible pressure sensor and method the same](#), 10-1973290, Domestic Patent (2019)
- c3. **Kyun Kyu Kim**, Sukjoon Hong, Seung Hwan Ko, [Strain Sensor and Manufacturing Method of The Same](#), 10-1691910, Domestic Patent (2016)

Conference & Presentations

- D1. **Kyun Kyu Kim**, Seung Hwan Ko, Fabrication of self-generated multiscale structure by laser-induced Marangoni flow and its application to wearable 3D touch, 2019 Next Generation Lithography Conference, Incheon, Korea, August 2019
- D2. **Kyun Kyu Kim**, Seung Hwan Ko, Transparent Wearable 3D touch: Self-generated Multiscale Structure Engineered by Laser-induced Thermal Gradient, 2019 OSA, California, Burlingame, August 2019
- D3. **Kyun Kyu Kim**, Seung Hwan Ko, Flexible and transparent pressure sensor for next generation force touch display applications, International Conference on Ubiquitous Robots, Hawaii, USA, June 2018
- D4. **Kyun Kyu Kim**, Seung Hwan Ko, Laser Patterning of Metal Nanowire Network for Touch Panel Applications, Conference of the Next Generation Lithography 2017, Korea, May 2017
- D5. **Kyun Kyu Kim**, Seung Hwan Ko, Flexible and Highly Sensitive Multi-dimensional Strain Sensor with Intersecting Metal Nanowire Arrays, International Conference on Ubiquitous Robots, Jeju, Korea, June 2017

Skills

- *Machine Learning and Deep Learning : Python, Pytorch, Tensorflow*
- *Development Tools : Ansys/COMSOL FEA simulation, Aspen, CAD(Solidworks, Autocad, Pro-E), Adobe premiere, illustration, 3D Max graphic*
- *Program Languages : Matlab, C++, Arduino, LabVIEW*
 - * *Certificate of LabVIEW course Programming certified by National Instruments (NI)*