

# Jae-Young Yoo, Ph.D

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- Assistant Professor
- Department of Semiconductor Convergence Engineering
- Sungkyunkwan University, Suwon, Republic of Korea
- Email: jy.yoo@skku.edu

## Education

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- **Postdoctoral researcher [Jan. 2021 ~Dec.2023]**
  - ✓ Querrey Simpson Institute for Bioelectronics
  - ✓ Northwestern University, United States
  - ✓ Principal investigator: Prof. John A. Rogers
  - ✓ Projects: **Human-Interface Electronics System** (Bio-Electronics & VR Feedback System)
- **Postdoctoral researcher [Mar. 2020 ~ Dec. 2020]**
  - ✓ Information & Electronics Research Institute
  - ✓ Korea Advanced Institute of Science and Technology (KAIST), South Korea
  - ✓ Principal investigator: Prof. Jun-Bo, Yoon
  - ✓ Projects: **Bending-insensitive tactile sensor for health monitoring**
- **Ph.D in School of Electrical Engineering [Sept. 2016 ~ Feb. 2020]**
  - ✓ Korea Advanced Institute of Science and Technology (KAIST), South Korea
  - ✓ Research Thesis  
: **Industrial-grade, Bending Insensitive, Transparent Nano-force Touch Sensor**
  - ✓ Advisor: Prof. Jun-Bo, Yoon
- **M.S in School of Electrical Engineering [Mar. 2015 ~ Aug. 2016]**
  - ✓ Korea Advanced Institute of Science and Technology (KAIST), South Korea
  - ✓ Research Thesis  
: **Research on improving the sensitivity of a flexible transparent tactile sensor with coplanar electrodes using stress concentration effect of nanograting**
  - ✓ Advisor: Prof. Jun-Bo, Yoon
- **B.S in School of Electrical Engineering [Feb. 2011 ~ Feb. 2015]**
  - ✓ Korea Advanced Institute of Science and Technology (KAIST), South Korea

## Research Interest

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- ✓ **Nano/Microelectromechanical Systems (N/MEMS)**
- ✓ **Flexible& Bio-Electronics**
- ✓ **VR & AR Electronics**
- ✓ Physical & Chemical Sensors
- ✓ Nanofabrication

## Honors and Awards

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**7. Best Paper Award (“Device division”) in the School of Electrical Engineering at KAIST, 2020.**

"Industrial-grade Bending Insensitive, transparent Nano-force touch sensor", This award was presented to only one person among all the device division students. [KAIST Jun. 2020](#).

**6. KAIST’S TOP 10 RESEARCH ACHIEVEMENTS OF 2018.** Industrial-grade Flexible Transparent Force Touch Sensor developed by Jae-Young Yoo, Min-Ho Seo, and Jun-Bo Yoon [KAIST Apr. 2019](#).

**5. Outstanding Student Paper Award Winner** at ‘The 32th IEEE International Conference on Micro Electro Mechanical System (MEMS 2019)’. “Maximizing Percolation Effect Using sub-100 nm Nano-valley for High Performance Wearable Transparent Pressure Sensor” [IEEE Jan. 2019](#).

**(only 3 papers among 490 student papers awarded)**

**4. Silver Award** at ‘26<sup>th</sup> Samsung Human Tech Paper Competition’. Jae-Young Yoo ‘s co-author paper entitled “Realization of nanolene- a 2D platform of 1D Nanowire array” [Samsung Electronics Co., Ltd. Feb. 2020](#).

**3. Silver Award** at ‘25<sup>th</sup> Samsung Human Tech Paper Competition’. Jae-Young Yoo ‘s co-author paper entitled “Palladium Nanowire with Stress-Engineered Structure for Wide Range of H<sub>2</sub> Detection with High Durability” [Samsung Electronics Co., Ltd. Feb. 2019](#).

**2. Video Abstract in International Websites.** Jae-Young Yoo`s co-1st author paper entitled “Industrial Grade, Bending-Insensitive, Transparent Nano-Force Touch Sensor Via Enhanced Percolation Effect in a Hierarchical Nano-Composite Film” in [Advanced Science News Oct. 2018](#). [\(Link\)](#)

**1. Press release in daily newspapers.** Jae-Young Yoo`s co-1st author paper entitled “Industrial Grade, Bending- Insensitive, Transparent Nano-Force Touch Sensor Via Enhanced Percolation Effect in a Hierarchical Nano-Composite Film” in [Advanced Functional Materials Sep. 2018](#).

# Publications

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- International Journals – First Author's papers, \* Highlights

- 12\*. **Jae-Young Yoo**<sup>+</sup>, Seyong Oh<sup>+</sup>, Wissam Shalish<sup>+</sup>, Woo-Youl Maeng<sup>+</sup>, Emily Cerier, Emily Jeanne, Myungkun Chung, Shasha Lv, Yunyun Wu, Seonggwang Yoo, Andreas Tzavelis, Jacob Trueb, Minsu Park, Hyoyoung Jeong, Efe Okunzuwa, Slobodanka Smilkova, Gyeongwu Kim, Junha Kim, M Gooyoon Chung, Yoonseok Park, Anthony Banks, Shuai Xua, Guilherme M. Sant'Anna, Debra E. Weese-Mayer, Ankit Bharat, and John A. Rogers "Wireless Broadband Acousto-Mechanical Sensors as Body Area Networks for Continuous Physiological Monitoring", **Nature Medicine**, 1-12, 2023 (+equally contributed)  
[IF: 87.24, JCI rank : 1/204 (99.51%, BIOCHEMISTRY AND MEDICINE) ]
11. Seyong Oh<sup>+</sup>, **Jae-Young Yoo**<sup>+</sup>, Woo-Youl Maeng<sup>+</sup>, Seonggwang Yoo, Tianyu Yang, Susan M Slattery, Sara Pessano, Emily Chang, Hyoyoung Jeong, Jihye Kim, Hak-Young Ahn, Yeongdo Kim, Joohee Kim, Shuai Xu, Debra E Weese-Mayer, John A Rogers "Simple, miniaturized biosensors for wireless mapping of thermoregulatory responses", **Biosensors and Bioelectronics**, 237, 2023 (+equally contributed)  
[IF: 12.54, JCI rank : 3/137 (97.81%, BIOPHYSICS) ]
10. Hyoyoung Jeong<sup>+</sup>, **Jae-Young Yoo**<sup>+</sup>, Wei Ouyang<sup>+</sup>, Aurora Lee, Jean Xue, Greane Greane, Alexandra Jane Wiebe, Ivy Huang, Young Joong Lee, Jong Yoon Lee, Joohee Kim, Xinchun Ni, Suyeon Kim, Huong Le-Thien Huynh, Isabel Zhong, Yu Xuan Chin, Jianyu Gu, Aaron M. Johnson, Theresa Brancaccio, John A. Rogers "Closed-Loop Network of Skin-interfaced Wireless Devices for Quantifying Vocal Fatigue and Providing User Feedback", **Proceedings of the National Academy of Sciences**, 120(9), 2023 (+equally contributed)  
[IF: 12.78, JCI rank : 10/135 (92.96%, MULTIDISCIPLINARY SCIENCES) ]
9. Minsu Park<sup>+</sup>, **Jae-Young Yoo**<sup>+</sup>, Tianyu Yang<sup>+</sup>, Yei Hwan Jung, Abraham Vázquez-Guardado, Shupeng Li, Jae-Hwan Kim, Jaeho Shin, Woo-Youl Maeng, Geumbee Lee, Seonggwang Yoo, Haiwen Luan, Jin-Tae Kim, Hee-Sup Shin, Matthew T Flavin, Hong-Joon Yoon, Nenad Miljkovic, Yonggang Huang, William P King, John A Rogers "Skin-integrated systems for power efficient, programmable thermal sensations across large body areas", **Proceedings of the National Academy of Sciences**. 120(6), 2023 (+equally contributed)  
[IF: 12.78, JCI rank : 10/135 (92.96%, MULTIDISCIPLINARY SCIENCES) ]
8. Jin-Tae Kim<sup>+</sup>, Hee-Sup Shin<sup>+</sup>, **Jae-Young Yoo**<sup>+</sup>, Raudel Avila, Yonggang Huang, Yei Hwan Jung, J Edward Colgate, John A Rogers "Mechanics of vibrotactile sensors for applications in skin-interfaced haptic systems" **Extreme Mechanics Letters**. 58, 101940, 2023 (+equally contributed)  
[IF: 4.73, JCI rank : 33/163 (80.06%, MECHANICS) ]
7. Hong-Joon Yoon<sup>+</sup>, Geumbee Lee<sup>+</sup>, Jin-Tae Kim<sup>+</sup>, **Jae-Young Yoo**<sup>+</sup>, Haiwen Luan<sup>+</sup>, Shyuan Cheng, Soohyeon Kang, Huong Le Thien Huynh, Hyeonsu Kim, Jaehong Park, Joohee Kim, Sung Soo Kwak, Hanjun Ryu, Jihye Kim, Yeon Sik Choi, Hak-Young Ahn, Junhwan Choi, Seyong Oh, Yei Hwan Jung, Minsu Park, Wubin Bai, Yonggang Huang, Leonardo P Chamorro, Yoonseok Park, John A Rogers "Biodegradable, three-dimensional colorimetric fliers for environmental monitoring" **Science Advances**. 8(51), 2022 (+equally contributed)  
[IF:14.98, JCI rank : 7/135 (95.19%, MULTIDISCIPLINARY SCIENCES) ]
- 6\*. Youn J. Kang<sup>+</sup>, Hany M. Arafa<sup>+</sup>, **Jae-Young Yoo**<sup>+</sup>, Cagla Kantarcigil<sup>+</sup>, Jin-Tae Kim<sup>+</sup>, Hyoyoung Jeong<sup>+</sup>, Seonggwang Yoo, Seyong Oh, Joohee Kim, Andreas Tzavelis, Yunyun Wu, Kyeongha Kwon, Joshua Winograd, Steve Xu, Bonnie Martin-Harris and John A. Rogers "Soft skin-interfaced mechano-acoustic

sensors for real-time monitoring and patient feedback on respiratory and swallowing biomechanics” *npj Digital Medicine*. 5(1), 147, 2022(+equally contributed)

**[IF: 15.357, JCI rank : 1/159 (99.69%, HEALTH CARE SCIENCES & SERVICES) ]**

- 5\*. Yei Hwan Jung<sup>+</sup>, **Jae-Young Yoo<sup>+</sup>**, Abraham Vázquez-Guardado<sup>+</sup>, Jae-Hwan Kim<sup>+</sup>, Jin-Tae Kim<sup>+</sup>, Haiwen Luan, Minsu Park, Jaeman Lim, Hee-Sup Shin, Chun-Ju Su, Robert Schloen, Jacob Trueb, Raudel Avila, Jan-Kai Chang, Da Som Yang, Yoonseok Park, Hanjun Ryu, Hong-Joon Yoon, Geumbee Lee, Hyoyeong Jeong, Jong Uk Kim, Aadeel Akhtar, Jesse Cornman, Tae-il Kim, Yonggang Huang and John A. Rogers “A wireless haptic interface for programmable patterns of touch across large areas of the skin” *Nature Electronics*. 5(9), 621, 2022 (+equally contributed)

**[IF: 33.69, JCI rank : 1/344 (99.85%, ENGINEERING, ELECTRICAL & ELECTRONIC) ]**

- 4\*. Min-Ho Seo<sup>+</sup>, **Jae-Young Yoo<sup>+</sup>**, Min-Seung Jo and Jun-Bo Yoon “Geometrically Structured Nanomaterials for Nanosensors, NEMS, and Nanosieves” *Advanced Materials*. 1907082, 2020 (+equally contributed)

**[IF: 32.09, JCI rank : 2/224 (99.33%, CHEMISTRY, MULTIDISCIPLINARY ) ]**

- 3\*. **Jae-Young Yoo<sup>+</sup>**, Min-Ho Seo<sup>+</sup>, Jae-Shin Lee, Kwang-Wook Choi, Min-Seung Jo, and Jun-Bo Yoon, “Industrial grade, bending-insensitive, transparent nano-force touch sensor via enhanced percolation effect in hierarchical-nano-composite film” *Advanced Functional Materials*, 1804721, 2018 (Back cover-featured of journal) (+equally contributed)

**[IF: 19.92, JCI rank : 13/414 (96.98%, MATERIALS SCIENCE, MULTIDISCIPLINARY)]**

2. Min-Ho Seo<sup>+</sup>, Kyungnam Kang<sup>+</sup>, **Jae-Young Yoo<sup>+</sup>**, Jaeho Park, Jae-Shin Lee, Incheol Cho, Beom-Jun Kim, Yongrok Jeong, Jung-Yong Lee, Byeongsu Kim, Junsuk Rho, Jun-Bo Yoon, and Inkyu Park “Chemo-Mechanically Operating Palladium-Polymer Nanograting Film for a Self-Powered H<sub>2</sub> Gas Sensor” *ACS Nano*. 1907082, 2020 (+equally contributed) [IF: 15.8]

[IF:18.03, JCI rank : 16/414 (96.26%, MATERIALS SCIENCE, MULTIDISCIPLINARY)]

1. **Jae-Young Yoo<sup>+</sup>**, Jae-Soon Yang<sup>+</sup>, Myung-Kun Chung<sup>+</sup>, Sung-Ho Kim, Jun-Bo Yoon “A Review of Geometric and Structural Design for Reliable Flexible Electronics” *Journal of Micromechanics and Microengineering*. 074001, 2021 (+equally contributed) [IF: 2.28]

[IF:2.28, JCI rank : 107/178 (40.17%, PHYSICS, APPLIED)]

## • International Journals – Co-author’s papers

11. Sung-Ho Kim, Min-Seung Jo, Kwang-Wook Choi, **Jae-Young Yoo**, Beom-Jun Kim, Jae-Soon Yang, Myung-Kun Chung, Tae-Soo Kim, Jun-Bo Yoon, “Ultrathin Serpentine Insulation Layer Architecture for Ultralow Power Gas Sensor”, *Small*, 2304555, 2023

[IF: 15.15, JCI rank : 13/178 (92.98%, PHYSICS, APPLIED)]

10. Yeon Sik Choi<sup>+</sup>, Hyoyoung Jeong<sup>+</sup>, Rose T. Yin<sup>+</sup>, Raudel Avila, Anna Pfenniger, **Jaeyoung Yoo**, Jong Yoon Lee, Andreas Tzavelis, Young Joong Lee, Sheena W. Chen, Helen S. Knight, Seungyeob Kim, Hak-Young Ahn, Grace Wickerson, Abraham Vázquez-Guardado, Elizabeth Higbee-Dempsey, Bender A. Russo, Michael A. Napolitano, Timothy J. Holleran, Leen Abdul Razzak, Alana N. Miniovich, Geumbee Lee, Beth Geist, Brandon Kim, Shuling Han, Jaclyn A. Brennan, Kedar Aras, Sung Soo Kwa, Joohee Kim, Emily Alexandria Waters, Xiangxing Yang, Amy Burrell, Keum San Chun, Claire Liu, Changsheng Wu, Alina Y. Rwei<sup>19</sup>, Alisha N. Spann, Anthony Banks, David Johnson, Zheng Jenny Zhang, Chad R. Haney, Sung Hun Jin, Alan Varteres Sahakian, Yonggang Huang, Gregory D. Trachiotis, Bradley P. Knight, Rishi

- K. Arora, Igor R. Efimov, John A. Rogers, “ A transient, closed-loop network of wireless, body-integrated devices for autonomous electrotherapy “ , *Science*, 2022.  
[IF:63.83, JCI rank : 2/135 (98.89%, MULTIDISCIPLINARY SCIENCES)]
9. Min-Seung Jo, Ki-Hoon Kim, Kwang-Wook Choi, Jae-Shin Lee, Jae-Young Yoo, Sung-Ho Kim, Heejeong Jin, Min-Ho Seo, Jun-Bo Yoon, “ Wireless and Linear Hydrogen Detection up to 4% with High Sensitivity through Phase-Transition-Inhibited Pd Nanowires” , *ACS Nano*, 2022  
[IF:18.03, JCI rank : 16/414 (96.26%, MATERIALS SCIENCE, MULTIDISCIPLINARY)]
8. Hyoyoung Jeong, Sung Soo Kwak, Seokwoo Sohn, Jong Yoon Lee, Young Joong Lee, Megan K. O’Brien, Yoonseok Park, Raudel Avila, Jin-Tae Kim, Jae-Young Yoo, Masahiro Irie, Hokyung Jang, Wei Ouyang, Nicholas Shawen, Youn J. Kang, Seung Sik Kim, Andreas Tzavelis, KunHyuck Lee, Rachel A. Andersen, Yonggang Huang, Arun Jayaraman, Matthew M. Davis, Thomas Shanley, Lauren S. Wakschlag, Sheila Krogh-Jespersen, Shuai Xu, Shirley W. Ryan, Richard L. Lieber, and John A. Rogers, “Miniaturized wireless, skin-integrated sensor networks for quantifying full-body movement behaviors and vital signs in infants” *Proceedings of the National Academy of Sciences* ,118,43 ,2021.  
[IF: 12.78, JCI rank : 10/135 (92.96%, MULTIDISCIPLINARY SCIENCES) ]
7. Kwang-Wook Choi, Min-Seung Jo, Jae-Shin Lee, Jae-Young Yoo, and Jun-Bo Yoon, “Perfectly-aligned, Air-suspended Nanowire Array Heater and its Application in an Always-on Gas Sensor”, *Advanced Functional Materials*, 202004448, 2020.  
[IF: 19.92, JCI rank : 13/414 (96.98%, MATERIALS SCIENCE, MULTIDISCIPLINARY)]
6. Jae-Shin Lee<sup>+</sup>, Kwang-Wook Choi<sup>+</sup>, Jae-Young Yoo, Min-Seung Jo and Jun-Bo Yoon, “Realization of Nanolene – a Planar Array of Perfectly Aligned, Air-Suspended Nanowires”, *Small*, 1906845, 2020  
**(Back cover-featured of journal)** (+equally contributed)  
[IF: 15.15, JCI rank : 13/178 (92.98%, PHYSICS, APPLIED)]
5. Jae-Shin Lee, Min-Ho Seo, Kwang-Wook Choi, Jae-Young Yoo, Min-Seung Jo and Jun-Bo Yoon, “Stress-engineered palladium nanowires for wide range (0.1%–3.9%) of detection with high durability” *Nanoscale*, Vol.11, pp. 16317-16326, 2019  
[IF: 8.31, JCI rank : 27/178 (85.11%, PHYSICS, APPLIED)]
4. Hyun-Joo Song, Min-Ho Seo, Kwang-Wook Choi, Min-Seung Jo, Jae-Young Yoo, and Jun-Bo Yoon, “High Performance Copper Oxide Visible Light Photodetector via Grain-Structure Model” *Scientific Reports*, Vol.9, 7334, 2019  
[IF: 5.00, JCI rank : 19/135 (86.30%, MULTIDISCIPLINARY SCIENCES)]
3. Kwang-Wook Choi, Jae-Shin Lee, Min-Ho Seo, Min-Seung Jo, Jae-Young Yoo, Gap Seop Sim, and Jun-Bo Yoon, “Batch-Fabrication CO Gas Sensor in Large-Area (8-inch) with Sub-10 mW Power Operation” *Sensors & Actuator B-Chemistry*, Vol. 289, pp. 153-159, 2019  
[IF: 9.22, JCI rank : 3/76 (96.71%, INSTRUMENTS & INSTRUMENTATION)]
2. Min-Ho Seo, Seon-Jin Choi, Sang Hyun Park, Jae-Young Yoo, Sung Kyu Lim, Jae-Shin Lee, Kwang Wook Choi, Min-Seung Jo, Il-Doo Kim, Jun-Bo Yoon, “Material-independent nano-transfer onto a flexible substrate using mechanical-interlocking structure” *ACS Nano*, Vol.12, pp. 4387-7397, 2018.  
[IF:18.03, JCI rank : 16/414 (96.26%, MATERIALS SCIENCE, MULTIDISCIPLINARY)]

1. Min-Ho Seo, **Jae-Young Yoo**, So-Young Choi, Jae-Shin Lee, Kwang-Wook Choi, Chang Kyu Jeong, Keon Jae Lee, and Jun-Bo Yoon, "Versatile transfer of an ultralong and seamless nanowires array crystallized at high temperature for use in high performance flexible devices" **ACS Nano**, Vol. 11, pp. 1520-1529, 2017.  
[IF:18.03, JCI rank : 16/414 (96.26%, MATERIALS SCIENCE, MULTIDISCIPLINARY)]

## • International Conferences

7. **Jae-Young Yoo**<sup>+</sup>, Min-Ho Seo<sup>+</sup>, Jae-Shin Lee, Kwang-Wook Choi, Min-Seung Jo, Hyeon-Joo Song and Jun-Bo Yoon, "Maximizing Percolation Effect Using Sub-100 nm Nano-Valley for High Performance Wearable Transparent Pressure Sensor" 32nd IEEE International Conference on Micro Electro Mechanical Systems (IEEE MEMS 2019), pp. 91-94, 2019 (Seoul, Korea, January 2019) (+equally contributed) [Oral]  
**(Outstanding student paper award winner, only 3 papers were awarded among 490 student papers)**
6. **Jae-Young Yoo**<sup>+</sup>, Min-Ho Seo<sup>+</sup>, Jae-Shin Lee and Jun-Bo Yoon, "High Performance Flexible Tactile Sensor Array Using a Large Area Plastic Nano-grating Substrate" 19th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers 2017), pp. 508-511, 2017 (Kaohsiung, Taiwan, June 2017) (+equally contributed) [Oral]
5. Myung-Kun Chung<sup>+</sup>, **Jae-Young Yoo**<sup>+</sup>, Jae-Shin Lee, Min-Seung Jo, Kwang-Wook Choi, Su-Bon Kim and Jun-Bo Yoon "Ultra-sensitive strain sensor using high density self-aligned nano-cracks" 33rd IEEE International Conference on Micro Electro Mechanical Systems (IEEE MEMS 2020), (Accept), 2020 (Vancouver, Canada, January 2020) (+equally contributed) [Oral]
4. Min-Seung Jo, Min-Ho Seo, Kwang-Wook Choi, Jae-Shin Lee, **Jae-Young Yoo**, Hyeon-Joo Song and Jun-Bo Yoon, "Industrial Grade Fabrication of Nanowire Sensor Device Exploiting Sacrificial Shadow Patterning Method" 20th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers 2019), pp. 1694-1697, 2019 (Berlin, Germany, June 2019) [Poster]
3. Jae-Shin Lee, Myung-Kun Chung, Kwang-Wook Choi, **Jae-Young Yoo** and Jun-Bo Yoon, "Palladium Hydrogen Sensor with Perfectly Aligned and Highly Uniform Nanogap Arrays" 32nd IEEE International Conference on Micro Electro Mechanical Systems (IEEE MEMS 2019), pp. 496-499, 2019 (Seoul, Korea, January 2019) [Poster]
2. Min-Ho Seo, SangHyun Park, **Jae-Young Yoo**, SungKyu Lim, Min-Seung Jo, Kwang-Wook Choi, Jae-Shin Lee, Soo-Bon Kim and Jun-Bo Yoon, "Material-Independent Nanowire-Transfer Method Based on Mechanical Interlocking for High Performance Flexible Devices" 31st IEEE International Conference on Micro Electro Mechanical Systems (IEEE MEMS 2018), pp. 33-36, 2018 (Belfast, Northern Ireland, January 2018) [Oral]
1. Min-Ho Seo, Dong-Hoon Choi, Chang-Hoon Han, **Jae-Young Yoo** and Jun-Bo Yoon, "An Electrostatic Energy Harvester Exploiting Variable-Area Water Electrode by Respiration" 28th IEEE International

Conference on Micro Electro Mechanical Systems (IEEE MEMS 2015), pp. 126-129, 2015 (Estoril, Portugal, January 2015) [Oral]

- **Domestic Conferences**

11. Jae-Young Yoo, Min-Ho Seo, Jae-Shin Lee, Kwang-Wook Choi, Min-Seung Jo, Jun-Bo Yoon  
"Maximizing Percolation Effect of Nano-structure for High-performance Pressure sensor" 21<sup>st</sup> Korean MEMS Conference 2019, [Oral FO-3-03]
10. Jae-Young Yoo, Min-Ho Seo, Jae-Shin Lee, Jun-Bo Yoon "Coplanar Electrodes Type Capacitive Tactile Sensor for High Flexibility and Transparency" 19<sup>th</sup> Korean MEMS Conference 2017 [Poster FP-3-28]
9. Myung-Kun Chung, Jae-Shin Lee, Kwang-Wook Choi, Jae-Young Yoo, Jun-Bo Yoon "Switching Type Palladium Hydrogen Sensor with Perfectly Aligned and Highly Uniform Nanogap Arrays" 21<sup>st</sup> Korean MEMS Conference 2019 [Poster FP-2-30]
8. Min-Seung Jo, Min-Ho Seo, Jae-Shin Lee, Kwang-Wook Choi, Jae-Young Yoo, and Jun-Bo Yoon "Large Area Nanowire Fabrication Method by Using Sacrificial Shadow Patterning on Nanograting" 21<sup>st</sup> Korean MEMS Conference 2019 [Poster FP-2-02]
- 7 Hyeon-Joo Song, Min-Ho Seo, Kwang-Wook Choi, Min-Seung Jo, Jae-Young Yoo, Jun-Bo Yoon  
"Investigation on Performance Enhancement of CuO Visible-light Photodetector by Engineering a Grain Structure" 21<sup>st</sup> Korean MEMS Conference 2019 [Poster TP-1-30]
- 6 Kwang-Wook Choi, Jae-Shin Lee, Min-Ho Seo, Min-Seung Jo, Jae-Young Yoo, Jun-Bo Yoon "Low Power CO Gas Sensing with Suspended Beam Micro-heater Integrated SnO<sub>2</sub> Thin Film" 20<sup>th</sup> Korean MEMS Conference 2018 [Poster FP-2-35]
5. Min-Ho Seo, Sang Hyun Park, Jae-Young Yoo, Sung Kyu Lim, Jun-Bo Yoon "A Novel Nanowire Transfer Using Dry Removable Sacrificial Layer Based Mechanical Interlocking Structure" 20<sup>th</sup> Korean MEMS Conference 2018 [Oral SO-06-04] **(The best paper award - Oral session)**
4. Yong-Bok Lee, Gun-Wook Yoon, Jae-young Yoo and Jun-Bo Yoon "Mass Producible Fabrication Method of Inverse-trapezoidal Microstructures by Hard Nickel Mold" 19<sup>th</sup> Korean MEMS Conference 2017 [Poster SP-4-39]

3. Jae-Shin Lee, Kwang-Wook Choi, Min-Ho Seo, Jae-Young Yoo, Min-Seung Jo, and Jun-Bo Yoon  
"Comparison of Crack Generation Tendency and Hydrogen Sensing Performance According to the Shape of Palladium Nanostructures" 19<sup>th</sup> Korean MEMS Conference 2017 [Poster FP-2-29]
2. Min-Ho Seo, Jae-Young Yoo, Jae-Shin Lee, Kwang-Wook Choi, Min-Seung Jo, and Jun-Bo Yoon  
"Application of Perfectly Aligned BaTiO<sub>3</sub> Nanowires In-plane Array to Wearable Strain Sensor" 19<sup>th</sup> Korean MEMS Conference 2017 [Poster TP-1-29] **(The best paper award - Poster session)**
1. Min-Ho Seo, Chang-Hoon Han, Seung-Deok Ko, Jae-young Yoo and Jun-Bo Yoon "An Electrostatic Energy Harvester Using Variable-area Water Electrode by Exhalation" 17<sup>th</sup> Korean MEMS Conference 2015 [Poster FP-1-16]



# Patents

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- **International Patents**

3. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "TOUCH INPUT DEVICE" (application date: 2018-08-21, application date : US 16107316)
2. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "PRESSURE SENSOR INCLUDING Laterally Arranged Electrodes on Coplanar Surface, Method of Fabricating the Same, and Multiaxial Tactile Sensor Using the Pressure Sensor" (application date: 2018-02-06, application number: US 15890898)
1. **Jae-Young Yoo**, Jae-Shin Lee, Kwang-Wook Choi, Chang-Keun Kim, Min-ho Seo and Jun-Bo Yoon "SUSPENDED TYPE NANOWIRE ARRAY AND MANUFACTURING METHOD THEREOF" (application date: 2016-02-17, application number: US 15045769)

- **Domestic Patents**

13. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "3D NANO STRUCTURE MANUFACTURING METHOD AND 3D NANO DEVICE MANUFACTURING METHOD" (registration date: 2019-12-19, registration number: 10-2059349)
12. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "TOUCH INPUT DEVICE" (registration date: 2019-11-01 registration number: 10-2041863)
11. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "THE PRESSURE SENSOR INCLUDING Laterally Arranged Electrodes on a Coplanar Surface and Method of Fabricating the Same and the Multiaxial Tactile Sensor Using the Pressure Sensor" (registration date: 2019-06-17, registration number: 10-1991721)
10. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "TOUCH INPUT DEVICE FOR SENSING A POSITION AND A PRESSURE MAGNITUDE OF TOUCH" (registration date: 2018-12-05, registration number: 10-1927795)
9. **Jae-Young Yoo**, Jae-Shin Lee, So-Young Choi, Kwang-Wook Choi, Chang-Keun Kim, Min-ho Seo and Jun-Bo Yoon "THREE-DIMENSIONAL NANOMETER STRUCTURE FABRICATING METHOD" (registration date: 2018-05-14, registration number: 10-1859422)

8. **Jae-Young Yoo**, Jae-Shin Lee, Kwang-Wook Choi, Chang-Keun Kim, Min-ho Seo and Jun-Bo Yoon "SUSPENDED TYPE NANOWIRE ARRAY AND MANUFACTURING METHOD THEREOF" (registration date: 2017-08-22, registration number 10-1772071)
7. **Jae-Young Yoo** and Jun-Bo Yoon "High Performance capacitive pressure sensor using floating electrode" (application date: 2019-12-31, application number: 10-2019-0179844)
6. **Jae-Young Yoo** and Jun-Bo Yoon "HIGH SENSITIVE PRESSURE SENSOR USING PIEZOELECTRIC NANOCOMPOSITE MATERIALS, AND SMART DEVICE USING THE SAME" (application date: 2019-12-31, application number: 10-2019-0179699)
5. **Jae-Young Yoo**, Min-Ho Seo, Min-seung Jo and Jun-Bo Yoon "TOUCH INPUT APPARATUS, GRATING SUBSTRATE FOR THE TOUCH INPUT APPARATUS, AND GRATING SUBSTRATE MANUFACTURING METHOD FOR THE TOUCH INPUT APPARATUS" (application date: 2018-11-29, application number: 10-2018-0150964)
4. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "TOUCH INPUT APPARATUS AND TOUCH INPUT APPARATUS MANUFACTURING METHOD" (application date: 2019-01-22, application number: 10-2019-0007894)
3. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "TOUCH INPUT APPARATUS AND METHOD FOR MANUFACTURING THE TOUCH INPUT APPARATUS" (application date: 2018-11-16, application number: 10-2018-0142000)
2. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "TOUCH INPUT DEVICE" (application date : 2018-08-28, application number: 10-2018-0101124)
1. **Jae-Young Yoo**, Min-Ho Seo and Jun-Bo Yoon "TOUCH INPUT DEVICE" (application date: 2017-09-28, application number: 10-2017-0126600)

## Research Presentations

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4. **Jae-Young Yoo** , “Vocal fatigue Monitoring and Haptic Feedback” ,Guest presentation in Designing Product Interactions Lecture, Northwestern university ,2021- 11-18
3. **Jae-Young Yoo** “COVID monitoring/Haptics feedback system”, Northwestern University, Evanston, IL, 2021-08-12
2. **Jae-Young Yoo** “Industrial grade, Bending-insensitive, Transparent Force Touch Sensor”, Nano Korea 2018 Research Frontier, Llsan, South Korea, 2018-07- 12
1. **Jae-Young Yoo** “Industrial-grade, Bending-insensitive High Performance Pressure Sensor”, NewBalance, Boston, Massachusetts, United States, 2018-11-29