Ji-Soo Jang, Ph.D.

Korea Institute of Science and Technology (KIST), Electronic Materials Research Center
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Personal Research Homepage: https://wkdwltn92.wixsite.com/nanoworld
H-index: 42 (Google Scholar)

PROFESSIONAL APPOINTMENTS

- **Korea Institute of Science and Technology (KIST), Seoul, Korea Mar. 2022~Present**
  - ✓ Senior Research Scientist
  - ✓ Electronic Materials Research Center

- **Korea Institute of Science and Technology (KIST), Seoul, Korea July 2021~Feb. 2022**
  - ✓ Research Scientist
  - ✓ Electronic Materials Research Center

- **Yale University August 2020-June 2021**
  - ✓ Postdoctoral Associate in Chemical and Environmental Engineering
  - ✓ Advisor: Prof. Menachem Elimelech, Co-Advisor: John Fortner

- **Korea Advanced Institute of Science and Technology (KAIST) Mar. 2020 ~July 2020**
  - ✓ Postdoctoral Associate in Material Science and Engineering
  - ✓ Advisor: Prof. Il-Doo Kim

- **Department of Chemistry, University of California, Irvine (UCI) Dec. 2016 ~April 2017**
  - ✓ Visiting Researcher in Department of Chemistry
  - ✓ Advisor: Reginald M. Penner

- **Massachusetts Institute of Technology (MIT) Sep. 2015 ~Dec. 2015**
  - ✓ Visiting Researcher in Chemical Engineering
  - ✓ Advisor: Prof. Gregory C. Rutledge

ACADEMIC EDUCATION

- **Ph. D. Material Science and Engineering (Global Ph.D. Fellowship) Mar. 2016 ~Feb. 2020**
  - ✓ Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea
  - ✓ Research Thesis: Development of highly selective/sensitive chemical sensor through the structure control and surface modification of organic/inorganic nanomaterials
  - ✓ Advisor: Prof. Il-Doo Kim

- **M.S., Material Science and Engineering Mar. 2014 ~ Feb. 2016**
  - ✓ Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea **GPA: 4.08 /4.3**
  - ✓ Research Thesis: Development of diverse morphology of hollow SnO_2 and protein based nanocatalysts for detection of biomarker molecules
  - ✓ Advisor: Prof. Il-Doo Kim

- **B.S., Material Science and Engineering Mar. 2010 ~ Feb. 2014**
  - ✓ Hanyang University, Seoul, South Korea. **GPA: 4.27/4.5 (Summa Cum Laude)**
  - ✓ Member of Honors Program in Hanyang university
  - ✓ Advisor: Prof. Won-Il Park

- **Incheon Science High School Mar. 2008 ~ Feb. 2010**
  - ✓ Early graduation of excellent student

PROFESSIONAL EXPERIENCE

2018-09. 06	**Program Committee**: KAIST International MSE Workshop 2018 (Fall)
2018-08. 07 ~ 08	**Program Committee**: KAIST International MSE/CBE Workshop 2018
2016. 08	**Program Assistant**: KAIST International MSE Workshop 2016
2015.08.11	**Program Assistant**: 1st KAIST-MIT-Technion Symposium, Daejeon, Korea
2012.03~2013.03	**Researcher**, Nano Electronic and Photonics Lab., Advisor: Prof. Won-Il Park Hanyang University (Honors lab program)
2010.03~2014.02	Honors program student in Hanyang University (full scholarship for 4 years), Seoul, South Korea.

HONORS

1. **Representative student in KAIST (카이스트 대표 Ph.D. 학생) for 2019 Schmidt Science Fellow ($100,000/year)**, 2019
2. **Global Ph. D Fellowship from National Research Foundation of Korea (NRF) ($30,000/year)**, Grant by Korean government, 2016–2018
3. **Korean Government Scholarship, KAIST,** 2014–present
4. **International Research Fellowship of BK21 Plus Program,** Korea, 2016

AWARDS

1. **Excellence Doctorate Thesis Award** (Gold medal), 'Graduation ceremony in KAIST', 2020
2. **ICAE Student Award**, '5th International Conference on Advanced Electromaterials', 2019
3. **Silver Award ($7,000)**, '25th Samsung Human Tech Paper Competition', 2019
4. **Excellent student among Global Ph.D Fellowship students from National Research Foundation of Korea (Max $5,000),** 2018
5. **Top Excellence Award**, 2018 KAIST Invention Award, 2018 (**1,500$**)
6. **Top Excellence Research**, 2018 National R&D Excellence and 100 line (**2018년 국가연구개발 우수성과 100선**, Ministry of Science and ICT), 2018
7. **Best Paper Award**, '2018 spring KMRS', 2018
8. **Trade, Industry and Energy Ministry Award** (**산업통상자원부 장관상**, promising young scientist from Korean government), '2018 spring ceramic conference', 2018
9. **Grand Prize (5,000 $)**, 2017 Scientific Technology-Based University Student Business Idea Contest, 2017
10. **Patent Transfer**, Samsung with the amount of royalty for KRW 900,000,000 in 2017.

    The patent is related to the fabrication method of metal oxide nanobelt/ porous metal oxide nanofibers for application in gas sensors. KR patent, 10-2016-0178894, 10-2016-0174662
11. **Patent Transfer**, Korean enterprise, NIDS Co. with the amount of royalty for KRW 100,000,000 in 2017.

    The patent is related to the fabrication method of metal oxide nanobelt/ porous metal oxide nanofibers for application in gas sensors. KR patent, 10-2016-0178894, 10-2016-0174662

12. **Patent Transfer**, Korean enterprise, GD sentron Co. with the amount of royalty for KRW 200,000,000 in 2017.

    The patent is related to the fabrication method of metal oxide nanotube functionalized with metallic catalyst for application in gas sensors. KR patent, 10-2015-0034024, 10-2015-0148273, US patent, 15111173.

13. **Pacrim11 Best Paper Award ($1,000)**, '2016 the Korean Ceramic Society Fall Conference'. 2016

14. **KAIST Creativity & Challenge Award**, KAIST President, 2016.

15. **Top Excellence Award**,'EEWS Business Plan Contest 2015' **KAIST**. 2016

16. **Silver Award ($7,000)**, '21st Samsung Human Tech Paper Competition', 2015

PUBLICATIONS SUMMARY

Published Papers		Presentations		Patents	
International	Domestic	International	Domestic	International	Domestic
84 **First/corresponding author**: 25 Co-author: 59	1 **First author**: 1	22 **Speaker**: 8 Co-author: 14	8 **Speaker**: 5 Co-author: 3	4	20

PUBLICATIONS

- ## INTERNATIONAL JOURNALS

[1st author/Corresponding author]

25. Jiwon Park, Sang-Mi Chang, Joonchul Shin, In Woo Oh, Dong-Gyu Lee, Hyun Soo Kim, Sunghoon Hur, Chong-Yun Kang, **Ji-Soo Jang,*** and Hyun-Cheol Song***, Wearable self-powered woven-structured energy harvester assembled by triboelectric and perspiration electric-generator fibers, Advanced Energy Materials, In-revision, 2023, (IF: 29.698)**

24. Gwang Su Kim, Yunsung Lim, Joonchul Shin, Sunghoon Hur, Hyun-Cheol Song, Seung-Hyub Beak, Seong Keun Kim, Jihan Kim*, Chong-Yun Kang*, **Ji-Soo Jang*, Breathable MOFs layer on atomically grown 2D SnS2 for stable and selective surface activation, Advanced Science, accepted, 2023 (IF: 17.521)**

23. Joonchul Shin, Geonhee Lee, Myoungwoo Choi, Huiwon Jang, Yunsung Lim, Gwang-Su Kim, Sang-Hyeon Nam, Jihan Kim, Chong-Yun Kang, Jeong-O Lee*, Seokwoo Jeon*, Donghwi Cho*, **Ji-Soo Jang* Atomically Mixed Catalysts on a 3D Thin-Shell TiO2 for Dual-Modal Chemical Detection and Neutralization, Submitted, 2023**

22. **Ji-Soo Jang,*** Yunsung Lim, Hamin Shin, Jihan Kim, Tae Gwang Yun,* Bi-directional water-stream behavior on multifunctional membrane for simultaneous energy generation and water purification, **Advanced Materials, 35, 7, 2370044, 2023, Front-cover featured, (IF: 32.086)**

21. Hyung-Jin Choi, Jun Young Lee, Soo Young Jung, Ruiguang Ning, Min-Seok Kim, Sung-Jin Jung, Sung Ok Won, Seung-Hyub Baek*, **Ji-Soo Jang***, Epitaxial growth of β-Ga_2O_3 thin films on Si with YSZ buffer layer, **ACS Omega, 7, 48, 43603, 2022 (IF: 4.132)**

20. Chae Soohwan†, Jaewan Ahn, **Ji-Soo Jang†*,** Il-Doo Kim*, "Thermal Shock-stabilized Catalysts on Metal Oxides: Ultrasensitive Chemiresistor", **Applied Surface Science, 591, 1, 153460, 2022 (IF: 7.392)**

19. Jong Won Baek, Yoon Hwa Kim, Jaewan Ahn, Dong-Ha Kim, Hamin Shin, Jaehyun Ko, Seyeon Park, Chungseong Park, Euichul Shin, **Ji-Soo Jang*,** Il-Doo Kim*,"Galvanic replacement reaction in perovskite oxide for superior acetylene gas sensors" **JMCA, 10, 23282, 2022 (IF: 14.511)**

18. **Ji-Soo Jang,** Lea R. Winter, Changwoo Kim, John Fortner*, Menachem Elimelech*,"High Precision Separation Membranes for Selective Environmental Gas Sensors" **2021, 3, 7, 547-560, Trends in Chemistry (IF: 22.448, Cell press)**

17. **Ji-Soo Jang,** Jun Kyu Kim, Kyeonghak Kim, Wan-Gil Jung, Chasung Lim, Sangwoo Kim, Dong-Ha Kim, Bong-Joong Kim*, Jeong Woo Han*, WooChul Jung* and Il-Doo Kim*, "Dopant-driven Positive Reinforcement in an Ex-solution Process: New Strategy to Develop Highly Capable and Durable Catalytic Materials" **Advanced Materials, 32, 46, 2003983, 2020 (IF: 32.086), In-side cover featured**

16. Donghwi Cho, **Ji-Soo Jang**†**,** Il-Doo Kim*, Seokwoo Jeon* "Focused Electric-field Polymer Writing: toward Ultralarge, Multi-stimuli-responsive Membranes" **ACS Nano, 14, 9, 11394, 2020 (IF: 18.027)**

15. Tae Gwang Yun†, **Ji-Soo Jang**†**,** Jun Young Cheong, Il-Doo Kim*, "Organism epidermis/plant-root inspired ultra-stable supercapacitor for large-scale wearable energy storage applications" **Nano Energy, 82, 105776, 2021 (IF: 19.069)**

14. **Ji-Soo Jang,** Hong Ju Jung, Sanggyu Chong, Dong-Ha Kim, Jihan Kim*, Sang Ouk Kim*, and Il-Doo Kim*-, "Two-dimensional materials decorated with ultra-thin and porous graphene oxide for high stability and selective surface activity", **Advanced Materials, 32 (36), 2070272, 2020 (IF: 32.086), Frontispiece featured**

13. **Ji-Soo Jang,** Jiyoung Lee, Won-Tae Koo, Dong-Ha Kim, Hee-Jin Cho, Hamin Shin, Il-Doo Kim*, Pore-Size-Tuned Graphene Oxide Membrane as a Selective Molecular Sieving Layer: Toward Ultraselective Chemiresistors, **Analytical Chemistry, 92, 1, 957–965, 2020 (IF: 8.008)**

12. **Ji-Soo Jang,** Seunghee Cho, Hyeuk Jin Han, Seok-Won Song, Sang-Joon Kim, Won-Tae Koo, Dong-Ha Kim, Hyeonsu Jeong, Yeon Sik Jung and Il-Doo Kim*, "Universal Synthesis of Porous Inorganic Nanosheets via Graphene-Cellulose Templating Route", **ACS Applied Materials & Interfaces, 11, 37, 34100, 2019 (IF: 10.383)**

11. **Ji-Soo Jang,** Sang-Eun Lee, Seon-Jin Choi, Won-Tae Koo, Dong-Ha Kim, Hamin Shin, Hee Jung Park* and Il-Doo Kim*, "Heterogeneous, Porous 2D Oxide Sheets via Rapid Galvanic Replacement: Toward Superior HCHO Sensing Application", **Advanced Functional Materials, 29, 42, 1903012, 2019 (IF: 19.924), Inside-cover featured**

10. **Ji-Soo Jang,** Hayoung Yu, Seon-Jin Choi, Won-Tae Koo, Dong-Ha Kim, Yong-Jin Jeong, Joon-Young Kang, Hyeonsu Jung*, Il-Doo Kim*, "Heterogeneous Metal Oxide–Graphene Thorn-Bush Single Fiber as a Freestanding Chemiresistor", **ACS Applied Materials & Interfaces, 11 (10), 10208, 2019 (IF: 10.383)**

9. **Ji-Soo Jang**†**,** Young-Woo Lim†, Dong-Ha Kim†, Daewon Lee, Won-Tae Koo, Hyunhwan Lee, Byeong-Soo Bae*, Il-Doo Kim*, "Glass-fabric reinforced Ag nanowire/siloxane composite heater substrate: sub-10 nm metal@metal oxide nanosheet for sensitive flexible sensing platform", **Small, 14 (44), 1802260, 2018, (IF: 15.153) Front-cover featured**

8. **Ji-Soo Jang,** Won-Tae Koo, Dong-Ha Kim, Il-Doo Kim*, "In-situ coupling of multidimensional MOFs for heterogeneous metal-oxide architectures: toward sensitive chemiresistors", **ACS Central Science, 4 (7), 929, 2018 (IF: 18.728)**

7. Ji-Won Jung†, **Ji-Soo Jang**† **(co-first author),** Tae Gwang Yun, Ki Ro Yoon, Il-Doo Kim*, "3D nanofibrous air electrode assembled with carbon nanotubes bridged hollow Fe2O3 nanoparticles for high performance lithium-oxygen batteries", **ACS Applied Materials & Interfaces, 10 (7), 6531, 2018 (IF: 10.383)**

6. **Ji-Soo Jang**, Shaopeng Qiao, Seon-Jin Choi, Gaurav Jha, Alana Ogata, Won-Tae Koo, Dong-Ha Kim, Il-Doo Kim*, Reginald M. Penner***, "**Hollow Pd-Ag composite nanowire for fast responding and transparent hydrogen sensors**", ACS Applied Materials & Interfaces, 9 (45), 39464, 2017 (IF: 10.383)**

5. **Ji-Soo Jang,** Seon-Jin Choi, Won-Tae Koo, Il-Doo Kim*, "Metal organic framework-templated chemiresistor: sensing type transition from p-to-n using hollow metal oxide polyhedron via galvanic replacement", **Journal of the American Chemical Society (JACS), 139 (34), 11868 2017 (IF: 16.383)**

4. **Ji-Soo Jang,** Seon-Jin Choi, Won-Tae Koo, Sang-Joon Kim, JunYoung Cheong and Il-Doo Kim*, "Elaborate manipulation for sub-10 nm hollow catalyst sensitized heterogeneous oxide nanofibers for room temperature chemical sensors" **ACS Applied Materials & Interfaces, 9 (29), 24821-24829, 2017 (IF: 10.383)**

3. **Ji-Soo Jang,** Sunmoon Yu, Seon-Jin Choi, Sang-Joon Kim, Won-Tae Koo, and Il-Doo Kim*, "Metal chelation assisted in-situ migration and functionalization of catalysts on peapod-like hollow SnO_2 toward superior chemical sensor", **Small, 12 (43), 5989-5997, 2016 (IF: 15.153)**

2. **Ji-Soo Jang,** Seon-Jin Choi, Sang-Joon Kim, Meggie Hakim, Il-Doo Kim*, "Rational design of highly porous

SnO_2 nanotubes functionalized with biomimetic nanocatalysts for direct observation of simulated diabetes", **Advanced Functional Materials, 26, 4740-4748, 2016 (IF: 18.808)**

1. **Ji-Soo Jang**, Sang-Joon Kim, Seon-Jin Choi, Nam-Hoon Kim, Meggie Hakim, Avner Rothschild and Il-Doo Kim, "Thin-walled SnO_2 nanotubes functionalized with Pt and Au catalysts via protein templating route and their selective detection of acetone and hydrogen sulfide molecules", **Nanoscale, 7, 16417-16426, 2015 (IF: 8.307)**

[Co-author]

58. Yooyeon Jo, Ji Young Lee, Eunpyo Park, Hyun Soo Kim, Hyung-Jin Choi, Seunguk Mun, Yunseok Kim, Sunghoon Hu, Jung Ho Yoon, **Ji-Soo Jang**, Chong-Yun Kang, Seung-Hyub Baek, Jeong Min Baik, Joon Young Kwak*, and Hyun-Cheol Song*, Epitaxial PZT Film-based Ferroelectric Field-Effect Transistors for Artificial Synapse, **Under review, 2023**

57. Nguyen X. Duong, **Ji-Soo Jang**, Min-Hyoung Jung, Jong-Seong Bae, Chang W. Ahn, Jong S. Jin, Kyuwook Ihm, Gyehyeon Kim, So Y. Lim, Jongmin Lee, Dang D. Dung, Soonil Lee, Young-Min Kim, Sanghan Lee, Sang M. Yang, Changhee Sohn, Ill W. Kim, Hu Y. Jeong, Seung-Hyub Baek, and Tae H. Kim*, Ultrahigh dielectric permittivity in oxide ceramics by hydrogenation, **Science Advances, accepted, 2023**

56. Dong-Gyu Lee , Joonchul Shin, Sunghoon Hur, Hyun Soo Kim, Jiyoung Lee , Inki Jung, **Ji-Soo Jang**, Sahn Nahm, Chong-Yun Kang, Sangtae Kim, Il-Ryeol Yoo, Kyung-Hoon Cho*, and Hyun-Cheol Song*, Autonomous Resonance-tuning Mechanism for Environmental Adaptive Energy Harvesting, **Advanced Science, accepted, 2023**

55 Hyo-KyungShim, ShuailingSun, Hyun-SooKim, Dong-GyuLee, Yeon-JeongLee, **Ji-Soo Jang**, Kyung-Hoon Cho,Jeong Min Baik, Chong-YunKang, YonggangLeng, Sunghoon Hur*, Hyun-Cheol Song*, On a nonlinear broadband piezoelectric energy harvester with a coupled beam array, **Applied Energy, accepted, 2022**

54. Hyung-Jin Choi, Jinhyuk Jang, Soo Young Jung, Ruiguang Ning, Min-Seok Kim, Sung-Jin Jung, Jun Young Lee, Jin Soo Park, Byung Chul Lee, **Ji-Soo Jang**, Seong Keun Kim, Kyu Hyoung Lee, June Hyuk Lee, Sung Ok Won, Yulan Li, Shenyang Hu , Si-Young Choi , and Seung-Hyub Baek*, Thermal stress-assisted annealing to improve the crystalline quality of an epitaxial YSZ buffer layer on Si, **Journal of Materials Chemistry C, accepted, 2022**

53. Euichul Shin, Dong-Ha Kim, Jun-Hwe Cha, Seolwon Yun, Hamin Shin, Jaewan Ahn, **Ji-Soo Jang**, JongWon Baek, Chungseong Park, Jaehyun Ko, Seyeon Park, Sung-Yool Choi*, and Il-Doo Kim*, Ultra-Fast Ambient-air Ex-solution on Metal Oxide via Momentary Photothermal Effect, **ACS Nano, accepted, 2022**

52. Dong-Ha Kim†, Sanggyu Chong†, Chungseong Park, Jaewan Ahn, **Ji-Soo Jang**, Jihan Kim* and Il-Doo Kim*, "Oxide/ZIF-8 Hybrid Nanofiber Yarns: Heightened Surface Activity for Exceptional Chemiresistive Sensing", **Advanced Materials, accepted, 2022**

51. Dong-Ha Kim, Jun-Hwe Cha, Giwoong Shim, Yoon Hwa Kim, **Ji-Soo Jang**, Hamin Shin, Jaewan Ahn, Sung-Yool Choi*, Il-Doo Kim*, "Flash-thermochemical engineering of phase and surface activity on metal oxides", **Chem, accepted, 2022**

50. Hamin Shin, Jaehyun Ko, Chungseong Park, Dong-Ha Kim, Jaewan Ahn, **Ji-Soo Jang**, Yoon Hwa Kim, Su-Ho Cho, Hionsuck Baik, Il-Doo Kim*, "Sacrificial Template-Assisted Synthesis of Inorganic Nanosheets with High-Loading Single-Atom Catalysts: A General Approach", **Advanced Functional Materials, 2110485, 2021**

49. Hyeuk Jin Han, Seunghee H Cho, Sangjun Han, **Ji-Soo Jang**, Gyu Rac Lee, Eugene N Cho, Sang-Joon Kim, Il-Doo Kim, Min Seok Jang, Harry L Tuller, Judy J Cha, Yeon Sik Jung*, "Synergistic Integration of Chemo-Resistive and SERS Sensing for Label-Free Multiplex Gas Detection", **Advanced Materials, 33, 44, 2105199, 2021**

48. Hamin Shin, Dong-Ha Kim, Wonjong Jung, **Ji-Soo Jang**, Yoon Hwa Kim, Yeolho Lee, Kiyoung Chang, Joonhyung Lee, Jongae Park, Kak Namkoong,* and Il-Doo Kim*, "Surface Activity-Tuned Metal Oxide Chemiresistor: Toward Direct and Quantitative Halitosis Diagnosis", **ACS Nano, 15, 9, 14207, 2021**

47. Wonsik Eom, **Ji-Soo Jang**, Sang Hoon Lee, Eunsong Lee, Il-Doo Kim*, Seon-Jin Choi*, and Tae Hee Han*, "Effect of Metal/Metal Oxide Catalysts on Graphene Fiber for Improved NO_2 Sensing", **Sensors and**

Actuators B: Chemical, 334, 1, 130231, 2021

46. Chungseong Park, Won-Tae Koo, Sanggyu Chong, Hamin Shin, Yoon Hwa Kim, Hee-Jin Cho, **Ji-Soo Jang**, Dong-Ha Kim, Jiyoung Lee, Seyeon Park, Jaehyun Ko, Jihan Kim and Il-Doo Kim*, "Confinement of Ultra-Small Bimetallic Nanoparticles in Conductive Metal-Organic Frameworks via Site-Specific Nucleation", **Advanced Materials, 33, 38, 2101216, 2021**

45. Joon-Young Kang, Won-Tae Koo, **Ji-Soo Jang**, Dong-Ha Kim, Yong-Jin Jeong, Rheehyun Kim, Jaewan Ahn, Seon-Jin Choi, Il-Doo Kim*, "2D Layer Assembly of Pt-ZnO Nanoparticles on Reduced Graphene Oxide for Flexible NO_2 Sensors", **Sensors and Actuators B: Chemical, 331, 15, 129371, 2021**

44. Jun Hyuk Kim, Jun Kyu Kim, Jiapeng Liu, Antonino Curcio, **Ji-Soo Jang**, Il-Doo Kim, Francesco Ciucci* and WooChul Jung,*, "Nanoparticle Ex-solution for Supported Catalysts: Materials Design, Mechanism and Future Perspectives", **ACS Nano, 15, 1, 81-110, 2021**

43. Woo-Bin Jung, Hyunsoo Park, **Ji-Soo Jang**, Eunsoo Lim, Ju-Ye Kim, Do Youb Kim, Sungho Choi, Jungdon Suk, Yongku Kang, Il-Doo Kim, Jihan Kim, Mihye Wu*, and HeeTae Jung*, "Poly-elemental nanoparticles as catalysts for a Li–O_2 battery", **ACS Nano, accepted, 2020**

42. Dong-Ha Kim, Jun-Hwe Cha, Jee Young Lim, Jaehyeong Bae, Woosung Lee, Ki Ro Yoon, Chanhoon Kim, **Ji-Soo Jang**, Wontae Hwang, and Il-Doo Kim*, "Colorimetric Dye-loaded Nanofiber Yarn: Eye-readable and Weavable Gas Sensing Platform", **ACS Nano, 14, 12, 16907, 2020**

41. Hamin Shin, Wan-Gil Jung, Dong-Ha Kim, **Ji-Soo Jang**, Yoon Hwa Kim, Won-Tae Koo, Jaehyeong Bae, Chungseong Park, Su-Ho Cho, Bong Joong Kim and Il-Doo Kim*, "Single-Atom Pt Stabilized on One-Dimensional Nanostructure Support via Carbon Nitride/SnO_2 Heterojunction Trapping", **ACS Nano, 14 (9), 11394, 2020**

40. Chan Ho Park, Won-Tae Koo, Young Jun Lee, Yoon-Hwa Kim, Jiyoung Lee, **Ji-Soo Jang**, Hongseok Yun, Il-Doo Kim*, Bumjoon J Kim*, "Hydrogen Sensors Based on MoS2 Hollow Architectures Assembled by Pickering Emulsion", **ACS Nano, 14 (8), 9652-9661, 2020**

39. Jun-Hwe Cha, Dong-Ha Kim, Cheolmin Park, Seon-Jin Choi,, **Ji-Soo Jang,** ang Yoon Yang, Il-Doo Kim*, Sung-Yool Choi*, "Low-Thermal-Budget Doping of 2D Materials in Ambient Air Exemplified by Synthesis of Boron-Doped Reduced Graphene Oxide"**, Advanced Science, 7, 7, 1903318, 2020**

38. Won-Tae Koo, Sang-Joon Kim, **Ji-Soo Jang,** Dong-Ha Kim, Il-Doo Kim*, "Catalytic Metal Nanoparticles Embedded in Conductive Metal-Organic Frameworks for Chemiresistors: Highly Active and Conductive Porous Materials"**, Advanced Science, 6, 21, 1900250, 2019**

37. Soo-Yeon Cho, Hayoung Yu, Junghoon Choi, Hohyung Kang, Seoungwoong Park, **Ji-Soo Jang,** Hye-Jin Hong, Il-Doo Kim, Seoung-Ki Lee, Hyeon Su Jeong*, Hee-Tae Jung*, "Continuous Meter-Scale Synthesis of Weavable Tunicate Cellulose/Carbon Nanotube Fibers for High-Performance Wearable Sensors"**, ACS Nano, 13, 8, 9332–9341, 2019**

36. In Ho Kim, Tae Hong Im, Han Eol Lee, **Ji-Soo Jang**, Hee Seung Wang, Gil Yong Lee, Il-Doo Kim, Keon Jae Lee*, Sang Ouk Kim*, "Janus Graphene Liquid Crystalline Fiber with Tunable Properties Enabled by Ultrafast Flash Reduction"**, Small, 15, 48, 1901529, 2019**

35. Dong-Ha Kim, Sang-Joon Kim, Hamin Shin, Won-Tae Koo, **Ji-Soo Jang,** Joon-Young Kang, Yong-Jin Jung Il-Doo Kim*, "High-Rosolution, Fast, and Shape-Conformable Hydrogen Sensor Platform: Polymer Nanofiber Yarn Coupled with Nano-Grained Pd@Pt", **ACS Nano, 13, 5, 6071, 2019**

34. Rheehyun Kim, **Ji-Soo Jang,** Dong-Ha Kim, Joon-Young Kang, Hee-Jin Cho, Yong-Jin Jung, Il-Doo Kim*, "A general Synthesis of Crumpled Metal Oxide Nanosheets as superior Chemiresistive Sensing Layers", **Advanced Functional Materials, 29, 31, 1903128, 2019**

33. Seon-Jin Choi, Dong–Myeong Lee, Hayoung Yu, **Ji–Soo Jang**, Min–Hyeok Kim, Joon–Young Kang, Hyeon Su Jeong,* and Il–Doo Kim*, "All carbon fiber-based chemical sensor: Improved reversible NO_2 reaction kinetics", **Sensors and Actuators B: Chemical, 290, 293, 2019**

32. Won-Tae Koo, **Ji-Soo Jang,** Il-Doo Kim*, "Metal-Organic Frameworks for Chemiresistive Sensors"**, Chem, 5, 8, 1938–1963, 2019**

31. Yong-Jin Jung, Dong-Ha Kim, **Ji-Soo Jang,** Joon-Young Kang, Rheehyun Kim, Il-Doo Kim*, "Bio-Inspired Heterogeneous Sensitization of Bimetal Oxides on SnO_2 Scaffold for Unparalleled Formaldehyde Detection", **Chemical Communications, 55, 3622, 2019**

30. Dong-Ha Kim, Ji-Won Jung, Seon-Jin Choi, Ji-Soo Jang, Won-Tae Koo, Il-Doo Kim*, "Pt nanoparticles functionalized tungsten oxynitride hybrid chemiresistor: Low-temperature NO_2 sensing", **Sensors and Actuators B: Chemical, 273, 1269, 2018**

29. Alana F. Ogata, Seok-Won Song, Su-Ho Cho, Won-Tae Koo, **Ji-Soo Jang**, Yong Jin Jeong, Min-Hyeok Kim, Jun Young Cheong, Reginald M. Penner*, Il-Doo Kim*, "An impedance-transduced chemiresistor with a porous carbon channel for rapid, nonenzymatic, glucose sensing", **Analytical Chemistry, 90 (15), 9338, 2018**

28. Yong-Jin Jung, Won-Tae Koo, **Ji-Soo Jang,** Dong-Ha Kim, Hee-Jin Cho, Il-Doo Kim*, "Chitosan-templated Pt nanocatalyst loaded mesoporous SnO_2 nanofibers: a superior chemiresistor toward acetone molecules", **Nanoscale, 10 (28), 13713, 2018**

27. Dong-Ha Kim, **Ji-Soo Jang,** Won-Tae Koo, Il-Doo Kim*, "Graphene oxide templating: facile synthesis of morphology engineered crumpled SnO2 nanofibers for superior chemiresistors", **Journal of Materials Chemistry A, 6 (22), 10543, 2018**

26. Won-Tae Koo, Jun-Hwi Cha, Ji-Won Jung, Seon-Jin Choi, **Ji-Soo Jang,** Dong-Ha Kim, Il-Doo Kim*, "Few-Layered WS_2 Nanoplates Confined in Co, N-Doped Hollow Carbon Nanocages: Abundant WS_2 Edges for Superior Gas Sensors", **Advanced Functional Materials, 28 (36), 1802575, 2018**

25. Won-Tae Koo, **Ji-Soo Jang,** Shaopeng Qiao, Won-Tae Hwang, Gaurav Jha, Il-Doo Kim*, "Hierarchical Metal–Organic Framework-Assembled Membrane Filter for Efficient Removal of Particulate Matter", **ACS Applied Materials & Interfaces, 10 (23), 19957, 2018**

24. Joon-Young Kang, **Ji-Soo Jang,** Won-Tae Koo, Jongsu Seo, Yoonseok Choi, Min-Hyeok Kim, Dong-Ha Kim, Hee-Jin Cho, WooChul Jung, Il-Doo Kim*, "Perovskite La0. 75Sr0. 25Cr0. 5Mn0. 5O3-δ Sensitized SnO2 Fiber-in-Tube Scaffold: Highly Selective and Sensitive Formaldehyde Sensing", **Journal of Materials Chemistry A, 6 (22), 10543, 2018**

23. Yong-Jin Jung, Won-Tae Koo, **Ji-Soo Jang,** Dong-Ha Kim, Min-Hyeok Kim, Il-Doo Kim*, "Nanoscale PtO_2 catalysts loaded SnO_2 multichannel nanofibers toward highly sensitive acetone sensor", **ACS Applied Materials & Interfaces, 10 (2), 2018**

22. Dong-Ha Kim, **Ji-Soo Jang,** Won-Tae Koo, Seon-Jin Choi, Hee-Jin Cho, Min-Hyeok Kim Il-Doo Kim*, "Bioinspired Cocatalysts Decorated WO3 Nanotube Toward Unparalleled Hydrogen Sulfide Chemiresistor", **ACS Sensors, 3 (6), 1164, 2018,**

21. Seon-Jin Choi, Hayoung Yu, **Ji-Soo Jang,** Min-Hyeok Kim, Hyeon Su Jeong*, Il-Doo Kim*, "Nitrogen-doped single graphene fiber with platinum water dissociation catalyst for wearable humidity sensor" **Small, 14 (13), 1703934, Front-cover featured, 2018,**

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3. **Ji-Soo Jang,** "Fundamentals and Applications of Electrospinning" **National NanoFab Center, Oct. 2017**
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6. **Ji-Soo Jang**, "Rational design of porous materials for application in ultra-sensitive chemical sensors and molecular sieving membranes" **Korea Institute of Industrial Technology (KITECH), April 2020**
7. **Ji-Soo Jang**, " Development of highly selective/sensitive chemical sensor through the structure control and

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10. **Ji-Soo Jang**, "Tailored nanomaterials for selective detection of chemicals and water-energy nexus" KRICT 한국화학연구원, **July 2021**
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- **DOMESTIC CONFERENCE**

5. Ji-Soo Jang, Il-Doo Kim*, "Facile synthesis of hollow Pd-Ag composite nanowires arrays for fast responding and transparent wearable hydrogen sensors", **Materials Research Society of Korea, Samchuck, Korea, May. 2018. (Poster) Won the best paper award**

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2. Ji-Soo Jang, Sunmoon Yu, Seon-Jin Choi, Sang-Joon Kim, Won-Tae Koo, Il-Doo Kim, "Metal-Biomimetic Nanoparticle Chelate Driven Migration of Catalysts and its Sensitization on Peapod-like Hollow SnO_2: Highly Selective Detection of Acetone and Toluene Molecules", **The Korean Institute of Electrical and Electronic Material Engineeris Annual Summer Conference 2016**, **Kyungju, Korea, Jun, 2016. (Poster)**

1. Ji-Soo Jang, Seon-Jin Choi, Sang-Joon Kim, Meggie Hakim, Il-Doo Kim, "Rational design of highly porous SnO_2 nanotubes functionalized with biomimetic nanocatalysts for direct observation of simulated diabetes", **The Korean Institute of Electrical and Electronic Material Engineers Annual Summer Conference 2016**, **Kyungju, Korea, Jun, 2016. (Oral)**

HANDS ON SKILLS

- ✓ Experimental Skills: Electrospinning (polymeric & inorganic nanofiber synthesis), fabrication of bio-inspired metallic nanoparticles (Single NPs, Core-shell NPs, intermetallic NPs), fabrication of stretchable conducting polymer, LPNE method for aligned NWs, 2D sheet metal oxide using graphene templating route, Graphene oxide liquid crystal, nanocellulose
- ✓ Analytic Skills: XRD, XPS, UPS, SEM, TEM, Raman spectroscopy, BET, TGA, and etc.
- ✓ Simulation Skills: 3D imaging skill using 3D MAX, 3D atomic structure sketch using VESTA, Chemdraw
- ✓

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- ✓ **Reviewer Boards:** Sensors, MDPI (Switzerland) 2020-Present
- ✓ **Journal Reviewer:** Science Advances (American Association for the Advancement of Science), ACS Nano (American Chemical Society), ACS Applied Materials & Interfaces (American Chemical Society), Advanced Materials & Technologies (Wiley), Environmental Science: Nano (RSC), Sensors (MDPI)

REFERENCES

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