

Taeyeong Kim

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Education

2019.03– **Intergrated Master's and Ph.D Candidate in Mechanical Engineering**,
2026.02 *Korea Advanced Institute of Science and Technology*.
Advisor: Prof. Jungchul Lee

2015.03– **Bachelor of Mechanical Engineering**,
2019.02 *Sogang University*, GPA – 4.15/4.30, Graduated with highest honor (First in College of Engineering - 공학부 수석 졸업).

Research Area

- Self-assembly process of semiconductor material based on high temperature annealing
- Nanomanufacturing based on silicon self-assembly
- MEMS/NEMS

Publications

* Authors equally contributed to the work

1. **Taeyeong Kim**, Kibum Jung, Jungchul Lee. "Physical unclonable functions in the buried third dimension" Under review
2. **Taeyeong Kim**, Jungchul Lee. "Wafer-scale fabrication of axis-ratio-engineered silicon nanoparticles for on-resonance electric–magnetic dipole interference" Under review
3. **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee. "*In-situ* monitoring of diffusive morphology transformation of semiconductor materials under Joule heating" Under review
4. Zhuo Feng Lee*, **Taeyeong Kim***, Kibum Jung, Jungchul Lee, Gi-Dong Sim. "Mechanical characterization of Silicon-on-Nothing structures with nanoindentation and point-load deflection experiments" *Sens. Actuator A-Phys.* **398**, 117312 (2026). doi.org/10.1016/j.sna.2025.117312
5. **Taeyeong Kim**, Minwoo Choi, Bong Jae Lee, Jungchul Lee. "Liquid refractive index measurements using cavity in silicon via near-infrared interferometry" *Sens. Actuator A-Phys.* **381**, 116078 (2025). doi:10.1016/j.sna.2024.116078

6. **Taeyeong Kim**, Jungchul Lee. "Fabrication of nanoscale stencils through focused ion beam milling and dry transfer of Silicon-on-Nothing membrane with perforations" *Microelectron. Eng.* **289**, 112172 (2024). doi:10.1016/j.mee.2024.112172
7. Minwoo Choi*, **Taeyeong Kim***, Bong Jae Lee, Jaeman Song, Jungchul Lee. "Conformally overlaid ferromagnetic shadow masks for etching and deposition processes" *J. Microelectromech. Syst.* **33**, 2 (2024). doi:10.1109/JMEMS.2024.3350132
8. **Taeyeong Kim**, Jungchul Lee. "Silicon nanoparticles: fabrication, characterization, application and perspectives" *Micro Nano Syst. Lett.* **11**, 18 (2023). doi:10.1186/s40486-023-00184-9
9. **Taeyeong Kim**, Jungchul Lee. "Fabrication and characterization of Silicon-on-Insulator wafers" *Micro Nano Syst. Lett.* **11**, 15 (2023). doi:10.1186/s40486-023-00181-y
10. Jaewoo Jeong, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee. "Predicting atomic force microscopy topography from optical microscopes using deep learning" *Adv. Intell. Syst.* **10**, 2200317 (2022). doi: 10.1002/aisy.202200317
Selected as an inside back cover
11. Jaewoo Jeong, **Taeyeong Kim**, Jungchul Lee. "Simulation of Germanium-on-Nothing cavity's morphological transformation using deep learning" *Micro Nano Syst. Lett.* **10**, 22 (2022). doi:10.1186/s40486-022-00164-5
12. **Taeyeong Kim**, Jungchul Lee. "Optimization of deep reactive ion etching for microscale silicon hole arrays with high aspect ratio" *Micro Nano Syst. Lett.* **10**, 12 (2022). doi:10.1186/s40486-022-00155-6
13. Mun Goung Jeong*, **Taeyeong Kim***, Bong Jae Lee, Jungchul Lee. "Subsurface imaging of microfabricated silicon membrane–cavity structures using near-infrared interferometry" *Adv. Eng. Mater.* **24**, 10 (2022). doi: 10.1002/adem.202200531
Selected as a back cover
14. Mun Goung Jeong*, **Taeyeong Kim***, Bong Jae Lee, Jungchul Lee. "Surrogate model for optimizing annealing duration of self-assembled membrane-cavity structures" *Micro Nano Syst. Lett.* **10**, 6 (2022). doi: 10.1186/s40486-022-00148-5
15. Jaewoo Jeong, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee. "PCA-based subsurface structure and defect analysis for Germanium-on-Nothing using nanoscale surface topography" *Sci. Rep.* **12**, 7205 (2022). doi: 10.1038/s41598-022-11185-w
16. **Taeyeong Kim***, Juhee Ko*, Jungchul Lee. "Self-assembled silicon membrane resonator for high vacuum pressure sensing" *Vacuum* **201**, 111101 (2022). doi: 10.1016/j.vacuum.2022.111101
17. Mun Goung Jeong*, **Taeyeong Kim***, Bong Jae Lee, Jungchul Lee. "Thick Germanium-on-Nothing structures by annealing microscale hole arrays with straight sidewall profiles" *J. Microelectromech. Syst.* **31**, 2 (2022). doi: 10.1109/JMEMS.2021.3139094
18. **Taeyeong Kim***, Mun Goung Jeong*, Bong Jae Lee, Jungchul Lee. "Formation, evolution, and prevention of thermally induced defects on germanium and silicon upon high-temperature vacuum annealing" *J. Vac. Sci. Technol. A* **39**, 060403 (2021). doi: 10.1116/6.0001308

19. **Taeyeong Kim***, Dong Min Kim*, Bong Jae Lee, Jungchul Lee. "Soft and Deformable Sensors Based on Liquid Metals" Sensors **19**, 19 4250 (2019). doi: 10.3390/s19194250

Patents

Dec. 2025 **Nanostructure for producing hollow nanoparticles and method for manufacturing hollow nanoparticles**
Jungchul Lee, **Taeyeong Kim** / Korean Patent, 10-2025-0190585

Aug. 2025 **Particle manufacturing method and particle manufacturing device**
Jungchul Lee, **Taeyeong Kim** / US Patent, 19298588

May. 2025 **Substrate fabrication method**
Jungchul Lee, **Taeyeong Kim** / Korean Patent, 10-2025-0065902

Aug. 2024 **Particle manufacturing method and particle manufacturing device**
Jungchul Lee, **Taeyeong Kim** / Korean Patent, 10-2024-0108939

Apr. 2023 **Top-down fabrication of single crystal silicon nanoparticles**
Jungchul Lee, **Taeyeong Kim** / Korean Patent, 10-2023-0051962

Aug. 2022 **Method of fabricating a cavity wafer**
Jungchul Lee, Mun Goung Jeong, **Taeyeong Kim**, Bong Jae Lee / Korean Patent, 10-2022-0099653

Mar. 2022 **Pressure sensing device and pressure sensing method using the same**
Jungchul Lee, **Taeyeong Kim**, Juhee Ko / Korean Registered Patent, 10-2613766

Jan. 2022 **Anti-counterfeiting tag, method of manufacturing the anti-counterfeiting tag and anti-counterfeiting system**
Jungchul Lee, **Taeyeong Kim**, Mun Goung Jeong, Jaewoo Jeong, Bong Jae Lee / Korean Patent, 10-2022-0012563

May. 2021 **Sensor integration of interferometric and resonance measurement systems for identifying heterogeneous viruses**
Jungchul Lee, Juhee Ko, **Taeyeong Kim** / Korean Registered Patent, 10-2469917

Awards

Dec. 2025 **Grand Award, KSME-LG Future Hometech Challenge.**
Jungchul Lee, **Taeyeong Kim**
- Development of hollow vacuum-core silica nanoparticles for thermal insulation materials via SemiconJet transfer and oxidation

Nov. 2025 **Future Promising Researcher Award (미래유망연구자상), 2025 Fall Conference of the Society of Micro and Nano Systems.**
Taeyeong Kim

Nov. 2025 **Best Paper Award, 2025 Fall Conference of the Society of Micro and Nano Systems.**
Taeyeong Kim, Kibum Jung, Jungchul Lee
- Depth-layered buried cavity codes in silicon wafers for optical security

Nov. 2025 **Best Paper Award, 2025 Fall Conference of the Society of Micro and Nano Systems.**
Doohong Min, **Taeyeong Kim**, Kibum Jung, Jungchul Lee
- Growth and In-situ Morphology Control of Silicon Pores via Backside-Illuminated Photo-electrochemical Etching

Oct. 2025 **Best Presentation Award**, *Fall Conference of Korean Sensors Society*.
Taeyeong Kim, Jungchul Lee
- Silicon nanoparticles with tunable geometry as optical sensing elements

May. 2025 **Best Photo Contest Award**, *Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division*.
Taeyeong Kim
- KSME Micro Nano division by Nanosphere structural color

May. 2025 **Best Poster Award**, *Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division*.
Kibum Jung, **Taeyeong Kim**, Jungchul Lee
-Ternary PUF design using silicon on nothing structures and its application to secure authentication

May. 2025 **Best Paper Award**, *Fall Conference of Korean Society of Mechanical Engineers (KSME)*.
Taeyeong Kim, Jungchul Lee
-Selective self-assembly of silicon nano-structures using localized laser annealing

Mar. 2025 **Best Poster Presentation Award**, *The 27th Korean MEMS Conference (2025 SMNS Spring Conference)*.
Taeyeong Kim, Jungchul Lee
-Hemispherical silver nanoshell array deposited on laser annealed silicon nanospheres for SERS applications

Mar. 2025 **Best Paper Award**, *The 27th Korean MEMS Conference (2025 SMNS Spring Conference)*.
Kibum Jung, Juhee Ko, **Taeyeong Kim**, Jungchul Lee
- Fabrication and Electro-Thermo-Mechanical Characterization of a Hot Arm Actuator

Dec. 2024 **Best Paper Award**, *Korean Federation of Machinery and Engineering Societies (Recommended by The Society of Micro and Nano Systems)*.
Taeyeong Kim, Jungchul Lee
- Top-down fabrication of highly uniform single crystal silicon micro-/nanoparticles via wafer-scale solid jet transfer harvesting

Nov. 2024 **Best Paper Award**, *2024 Fall Conference of the Society of Micro and Nano Systems*.
Taeyeong Kim, Jungchul Lee
- Real-time inspection of semiconductor self-assembly process during high-temperature annealing

Nov. 2024 **Bronze Award**, *KSME-LG Future Hometech Challenge*.
Jungchul Lee, **Taeyeong Kim**, Juhee Ko
- Measurement of compressor refrigerant/oil mixture properties and heat transfer performance using heated flow channel resonator-Based Multimodal Sensing

Nov. 2024 **Bronze Award**, *KSME-SEMES Open Innovation Challenge*.
Jungchul Lee, **Taeyeong Kim**, Juhee Ko
- Near-infrared interferometric nanoscanner for non-destructive inspection of 3D NAND flash memory

Mar. 2024 **Best Oral Presentation Award**, *The 26th Korean MEMS Conference (KMEMS 2024)*.
Taeyeong Kim, Jungchul Lee
- Top-down fabrication of highly uniform single crystal silicon micro-/nanoparticles via wafer-scale solid jet transfer harvesting

May. 2023 **Best Poster Award**, *Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division.*
Taeyeong Kim, Juhee Ko, Jungchul Lee
- Top-down mass production of uniform silicon nanoparticles via high temperature annealing

May. 2023 **Best Photo Contest Award**, *Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division.*
Taeyeong Kim
- Micro Alien Invasion of Earth

Mar. 2023 **Best Oral Presentation Award**, *The 25th Korean MEMS Conference (KMEMS 2023).*
Taeyeong Kim, Minwoo Choi, Bong Jae Lee, Jungchul Lee
- Fabrication of silicon-on-insulator structure via simultaneous internal and external oxidation of Silicon-on-Nothing (SON)

Nov. 2022 **Best Paper Award**, *2022 Fall Conference of the Society of Micro and Nano Systems.*
Taeyeong Kim, Jungchul Lee
- Top-down fabrication of single crystal silicon nanoparticles

Apr. 2022 **Best Paper Award**, *The 24th Korean MEMS Conference (KMEMS 2022).*
Taeyeong Kim, Jungchul Lee
- Optimization of deep reactive ion etching for micrometer and sub-micrometer silicon hole arrays with high aspect ratio

Apr. 2022 **Best Paper Award**, *The 24th Korean MEMS Conference (KMEMS 2022).*
Mun Goung Jeong, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee
- Surrogate model for optimizing annealing duration of self-assembled membrane-cavity structures

Jan. 2022 **Best Oral Presentation Award**, *Nano Convergence Conference 2022 (NCC 2022).*
Taeyeong Kim, Mun Goung Jeong, Bong Jae Lee, Jungchul Lee
- Fabrication of single and double-stacked germanium-on-nothing structure by near-melting temperature annealing

Nov. 2021 **Best Paper Award**, *2021 Fall Conference of the Society of Micro and Nano Systems.*
Jaewoo Jeong, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee
- PCA-based surface inspection methodology for Germanium-on-Nothing structures

Nov. 2021 **Bronze Award**, *KSME-SEMES Open Innovation Challenge.*
Jungchul Lee, Mun Gyeong Jeong, **Taeyeong Kim**, Jaewoo Jeong, Bong Jae Lee
- Fabrication of anti-counterfeiting tag with buried micro-scale patterns and its recognition methodology using multi-spectral optical inspection

Nov. 2020 **Encouragement Award**, *KSME-SEMES Open Innovation Challenge.*
Juhee Ko, Jungchul Lee, **Taeyeong Kim**, Bong Jae Lee
- 초고분해능 인쇄 전자 소자를 위한 가열전극이 통합된 캔틸레버 기반 패터닝 기술

Sep. 2020 **Outstanding Teaching Assistant**, *ME 211: Thermodynamics.*
Taeyeong Kim

Feb. 2019 **Best Graduation Award**, *Sogang University*, Graduated with highest honor, 공학부 수석 졸업.
Taeyeong Kim

Sep. 2018 **Top Grade Award**, *Sogang University*, Top 1% in Department of Engineering for the 1st Semester of 2018.
Taeyeong Kim

Apr. 2018 **Top Grade Award**, *Sogang University*, Top 1% in Department of Engineering for the 2nd Semester of 2017.
Taeyeong Kim

Sep. 2017 **Top Grade Award**, *Sogang University*, Top 1% in Department of Engineering for the 1st Semester of 2017.
Taeyeong Kim

Apr. 2017 **Top Grade Award**, *Sogang University*, Top 1% in Department of Engineering for the 2nd Semester of 2016.
Taeyeong Kim

Mar. 2016 **Top Grade Award**, *Sogang University*, Top 1% in Department of Engineering for the 2nd Semester of 2015.
Taeyeong Kim

Conferences

Dec. 2025 **80th Anniversary Conference of Korean Society of Mechanical Engineers (KSME)**, Jeongseon
(Oral) **Taeyeong Kim**, Jungchul Lee
-SOI wafer fabrication enabled by internal oxidation of self-assembled silicon membrane-on-cavity

Nov. 2025 **2025 Fall Conference of the Society of Micro and Nano Systems**, Yeosu
(Poster) **Best Paper Award/Taeyeong Kim**, Kibum Jung, Jungchul Lee
-Depth-layered buried cavity codes in silicon wafers for optical security

Nov. 2025 **2025 Fall Conference of the Society of Micro and Nano Systems**, Yeosu
(Poster) **Taeyeong Kim**, Jungchul Lee
-Wafer-scale, top-down fabrication of geometry-tuned silicon nanoparticles for directional scattering

Nov. 2025 **2025 Fall Conference of the Society of Micro and Nano Systems**, Yeosu
(Poster) **Best Paper Award**/Doohong Min, **Taeyeong Kim**, Jungchul Lee
-Growth and In-situ Morphology Control of Silicon Pores via Backside-Illuminated Photoelectrochemical Etching

Oct. 2025 **Fall Conference of Korean Sensors Society**, Yeosu
(Oral) **Best Presentation Award/Taeyeong Kim**, Jungchul Lee
-Silicon nanoparticles with tunable geometry as optical sensing elements

Oct. 2025 **Fall Conference of Korean Sensors Society**, Yeosu
(Poster) **Taeyeong Kim**, Kibum Jung, Jungchul Lee
-Buried optical codes for multi-level security via silicon-on-nothing

June. 2025 **The 23rd International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers 2025)**, Orlando, USA
(Oral) **Taeyeong Kim**, Jungchul Lee
-Hemispherical silver nanoshell array on silicon nanospheres for surface-enhanced Raman spectroscopy

May. 2025 **Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division**, Gangneung
 (Oral) **Taeyeong Kim**, Jungchul Lee
 -Highly sensitive SERS applications using hemispherical silver nanoshell arrays deposited on laser-annealed silicon nanospheres

May. 2025 **Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division**, Gangneung
 (Poster) **Best Poster Presentation Award**/Kibum Jung, **Taeyeong Kim**, Jungchul Lee
 -Ternary PUF design using silicon on nothing structures and its application to secure authentication

May. 2025 **Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division**, Gangneung
 (Poster) **Best Poster Presentation Award**/Doohong Min, **Taeyeong Kim**, Jungchul Lee
 -Protein separation using laser-annealed nanoporous silicon membranes with high uniformity

Mar. 2025 **The 27th Korean MEMS Conference (2025 SMNS Spring Conference)**, Jeju Island
 (Oral) **Best Oral Presentation Award**/**Taeyeong Kim**, Jungchul Lee
 -Top-down fabrication of highly uniform and single crystal hollow silicon nanoparticles (hSiNPs) via solidjet transfer technique

Mar. 2025 **The 27th Korean MEMS Conference (2025 SMNS Spring Conference)**, Jeju Island
 (Oral) **Taeyeong Kim**, Jungchul Lee
 -Fabrication of wafer-scale nanopore arrays based on silicon nanoholes and nanopillars via laser annealing

Mar. 2025 **The 27th Korean MEMS Conference (2025 SMNS Spring Conference)**, Jeju Island
 (Poster) **Best Poster Presentation Award**/**Taeyeong Kim**, Jungchul Lee
 -Hemispherical silver nanoshell array deposited on laser annealed silicon nanospheres for SERS applications

Mar. 2025 **The 27th Korean MEMS Conference (2025 SMNS Spring Conference)**, Jeju Island
 (Poster) Kibum Jung, Juhee Ko, **Taeyeong Kim**, Jungchul Lee
 -Fabrication and Electro-Thermo-Mechanical Characterization of a Hot Arm Actuator

Mar. 2025 **The 27th Korean MEMS Conference (2025 SMNS Spring Conference)**, Jeju Island
 (Poster) Zhuo Feng Lee, **Taeyeong Kim**, Kibum Jung, Jungchul Lee, Gi-Ding Sim
 -Mechanical characterization of Silicon-on-Nothing structures with nanoindentation and point-load deflection experiments

Jan. 2025 **The 6th International Conference on Manufacturing Process & Technology (ICMPT)**, Bali, Indonesia
 (Oral) **Taeyeong Kim**, Jungchul Lee
 -Concealed cavity in silicon for robust and irreplicable anti-counterfeiting function

Jan. 2025 **The 38th International Conference on Micro Electro Mechanical Systems (IEEE MEMS 2025)**, Kaohsiung, Taiwan
 (Poster) **Taeyeong Kim**, Juhee Ko, Jungchul Lee
 -Wafer-scale ferromagnetic shadow mask compatible with contact aligner for dry etching and deposition

Nov. 2024 **2024 Fall Conference of the Society of Micro and Nano Systems**, Busan
 (Poster) **Best Paper Award/Taeyeong Kim**, Jungchul Lee
 -Real-time inspection of semiconductor self-assembly process during high-temperature annealing

Nov. 2024 **Fall Conference of Korean Society of Mechanical Engineers (KSME)** Jeju Island
 (Oral) **Taeyeong Kim**, Jungchul Lee
 -Selective self-assembly of silicon nano-structures using localized laser annealing

Oct. 2024 **IEEE Sensors 2024**, Kobe, Japan
 (Oral) **Taeyeong Kim**, Minwoo Choi, Bong Jae Lee, Jungchul Lee
 -Development of microfluidic platform for refractive index measurement of liquid

Mar. 2024 **The 26th Korean MEMS Conference (KMEMS 2024)**, Jeju Island
 (Oral) **Best Oral Presentation Award/Taeyeong Kim**, Jungchul Lee
 -Top-down fabrication of highly uniform single crystal silicon micro-/nanoparticles via wafer-scale solid jet transfer harvesting

Nov. 2023 **Fall Conference of Korean Society of Mechanical Engineers (KSME)** Incheon
 (Oral) **Taeyeong Kim**, Juhee Ko, Minwoo Choi, Jaeman Song, Bong Jae Lee, Jungchul Lee
 -Wafer scale ferromagnetic shadow mask for versatile microfabrication

Sep. 2023 **The 14th Japan-China-Korea Joint Conference on MEMS/NEMS (JCK MEMS/NEMS)**, Jeju, Korea
 (Poster) **Taeyeong Kim**, Minwoo Choi, Bong Jae Lee, Jungchul Lee
 -Self-assembled silicon cavity with polydimethylsiloxane interface for liquid refractive index measurements via near-infrared interferometry

June. 2023 **The 22nd International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers 2023)**, Kyoto, Japan
 (Poster) **Taeyeong Kim**, Jungchul Lee
 -Nanoscale stencils fabricated by focused ion beam milling and dry transfer of Silicon-on-Nothing membranes

May. 2023 **Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division**, Busan
 (Poster) **Best Poster Award/Taeyeong Kim**, Juhee Ko, Jungchul Lee
 -Top-down mass production of uniform silicon nanoparticles via high temperature annealing

Mar. 2023 **The 25th Korean MEMS Conference (KMEMS 2023)**, Jeju Island
 (Oral) **Best Oral Presentation Award/Taeyeong Kim**, Minwoo Choi, Bong Jae Lee, Jungchul Lee
 -Fabrication of silicon-on-insulator structure via simultaneous internal and external oxidation of Silicon-on-Nothing (SON)

Mar. 2023 **The 25th Korean MEMS Conference (KMEMS 2023)**, Jeju Island
 (Poster) **Taeyeong Kim**, Jungchul Lee
 -Top-down fabrication of single crystal silicon nanoparticles based on shape evolution during high temperature annealing

Jan. 2023 **Nano Convergence Conference 2023 (NCC 2023)**, Gwangju
 (Poster) **Taeyeong Kim**, Jungchul Lee
 -Towards advanced optical and electrical devices using nanoscale stencils fabricated by focused ion beam milling and dry transfer of silicon-on-nothing membranes

Nov. 2022 **2022 Nanoscientific Symposium**, Daejeon
 (Invited talk) **Mun Goung Jeong, Taeyeong Kim, Jaewoo Jeong, Jungchul Lee**
 -반도체 박막-공동 구조체를 위한 비파괴 검사 분석 및 해석

Nov. 2022 **2022 Fall Conference of the Society of Micro and Nano Systems**, Gwangju
 (Poster) **Best Paper Award/Taeyeong Kim**, Jungchul Lee
 -Top-down fabrication of single crystal silicon nanoparticles

Nov. 2022 **Fall Conference of Korean Society of Mechanical Engineers (KSME)** Jeju Island
 (Oral) **Taeyeong Kim**, Jungchul Lee
 -Single crystal silicon thin film shadow mask for fabricating nanoscale metal patterns

Apr. 2022 **Spring Conference of Korean Society of Mechanical Engineers (KSME) – Micro Nano division**, Busan
 (Poster) **Taeyeong Kim**, Jungchul Lee
 -Transfer of a monocrystalline silicon thin film on a flexible substrate

Apr. 2022 **The 24th Korean MEMS Conference (KMEMS 2022)**, Jeju Island
 (Poster) **Taeyeong Kim**, Mun Goung Jeong, Bong Jae Lee, Jungchul Lee
 -3D anti-counterfeiting tag encoding based on multi-layered silicon-on-Nothing structures and decoding with near-IR interferometry

Apr. 2022 **The 24th Korean MEMS Conference (KMEMS 2022)**, Jeju Island
 (Poster) **Best Paper Award/ Mun Goung Jeong, Taeyeong Kim, Bong Jae Lee, Jungchul Lee**
 -Surrogate model for optimizing annealing duration of self-assembled membrane-cavity structures

Apr. 2022 **The 24th Korean MEMS Conference (KMEMS 2022)**, Jeju Island
 (Poster) **Taeyeong Kim**, Juhee Ko, Jungchul Lee
 -High-vacuum pressure sensor with silicon-on-nothing (SON) membrane resonators

Apr. 2022 **The 24th Korean MEMS Conference (KMEMS 2022)**, Jeju Island
 (Poster) **Best Paper Award/Taeyeong Kim**, Jungchul Lee
 -Optimization of deep reactive ion etching for micrometer and sub-micrometer silicon hole arrays with high aspect ratio

Jan. 2022 **Nano Convergence Conference 2022 (NCC 2022)**, Gwangju
 (Oral) **Best Oral Presentation Award/Taeyeong Kim**, Mun Goung Jeong, Bong Jae Lee, Jungchul Lee
 -Fabrication of single and double-stacked germanium-on-nothing structure by near-melting temperature annealing

Jan. 2022 **Nano Convergence Conference 2022 (NCC 2022)**, Gwangju
 (Poster) Jaewoo Jeong, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee
 -Encoder-decoder neural network and PCA-based surface inspection methodology for GON structures

Nov. 2021 **2021 Fall Conference of the Society of Micro and Nano Systems**, An-myeon Island
 (Poster) **Taeyeong Kim**, Mun Goung Jeong, Bong Jae Lee, Jungchul Lee
 -고온 진공 어닐링을 이용한 자가조립 저매니움 단층 및 복층 공동 제작

Nov. 2021 **2021 Fall Conference of the Society of Micro and Nano Systems**, An-myeon Island
 (Poster) **Best Paper Award**/Jaewoo Jeong, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee
 -자가 조립 저마늄 구조를 위한 PCA 기반 표면 검사 및 분석 방법론

Nov. 2021 **Fall Conference of Korean Society of Mechanical Engineers (KSME)**, Gwangju
 (Oral) **Taeyeong Kim**, Mun Goung Jeong, Bong Jae Lee, Jungchul Lee
 -Fabrication of single and double germanium-on-nothing structures using high-temperature vacuum annealing of microscale hole arrays

Nov. 2021 **Fall Conference of Korean Society of Mechanical Engineers (KSME)**, Gwangju
 (Oral) Jaewoo Jeong, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee
 -PCA-based sub-surface analysis for Germanium-on-Nothing structures using nanoscale surface micrographs

May. 2021 **Spring Conference of Korean Society of Mechanical Engineers (KSME) – Thermal Engineering division**, Jeju Island
 (Poster) **Taeyeong Kim**, Jaewoo Jeong, Mun Goung Jeong, Bong Jae Lee, Jungchul Lee
 -High-resolution image-based silicon and germanium self-assembly cavity transient analysis

Apr. 2021 **The 23rd Korean MEMS Conference (KMEMS 2021)**, Buyeo
 (Poster) **Taeyeong Kim**, Mun Goung Jeong, Bong Jae Lee, Jungchul Lee
 -Transient self-assembled structure analysis for prediction of the cavity formation upon high temperature annealing

Dec. 2020 **Fall Conference of Korean Society of Mechanical Engineers (KSME)**, Jeongseon
 (Poster) **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee
 -Flexible liquid metal 3ω sensor fabricated by shear induced direct printing for thermal conductivity measurement of human skin

Dec. 2019 **The 2nd Pacific Rim Thermal Engineering Conference (PRTEC)**, Hawaii Maui
 (Oral) Island
 Dong Min Kim, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee
 -Thermal conductivity measurement of liquid metal with 3-omega method

Dec. 2019 **The 2nd Pacific Rim Thermal Engineering Conference (PRTEC)**, Hawaii Maui
 (Oral) Island
 J. Kim, **Taeyeong Kim**, Bong Jae Lee, Jungchul Lee
 -Fabrication of liquid-metal nano-emulsion and characterization of its dispersion stability

Nov. 2019 **Fall Conference of the Korean Society of Mechanical Engineers (KSME)**
(Poster) **Taeyeong Kim**, Dong Min Kim, Bong Jae Lee, Jungchul Lee
-Precision measurement of thermal conductivity of artificial skin with liquid metal
sensor fabricated by microcontact printing