

Sukkyung Kang

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RESEARCH FOCUSES

- Advanced Manufacturing
- Surface Engineering and Contact Mechanics
- Semiconductor Manufacturing
- Chemical Mechanical Polishing
- Hybrid Bonding

DEGREE & EDUCATION

Ph.D. in Mechanical Engineering **Mar 2022 - Aug 2025**
Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea
(Thesis: Micro/Nano Surface Engineering for Planarization and Hybrid Bonding in Semiconductor Heterogeneous Integration)

M.S. in Mechanical Engineering **Mar 2020 - Feb 2022**
Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea
(Thesis: Surface Polishing using Vertically Aligned Carbon Nanotubes as Fixed-Abrasives)

B.S. in Mechanical Engineering **Mar 2014 - Feb 2020**
Hanyang University (HYU), Seoul, Republic of Korea
Graduation with *Summa Cum Laude*
(Note: Military Service during April 2015 - January 2017)

PROFESSIONAL POSITIONS & EXPERIENCE

Postdoctoral Fellow (InnoCORE Global Postdoctoral Program) **Aug 2025 - Present**
PRISM-AI Center (Platform for Real-world Innovation in Smart Manufacturing and AI), KAIST

AWARDS & HONORS

- **Young Scientist Award**, International Symposium on Microelectronics and Packaging (ISMP), 2025
- **Best Student Paper Award**, International Conference on Planarization Technology (ICPT), 2025
- **Best Paper Award**, Korean Tribology Society (KTS), 2025
- **Outstanding Paper Presentation Award** from the Korean Microelectronics and Packaging Society (KMEPS), 2025
- **Gold Prize, Samsung HumanTech Paper Award**, Samsung Advanced Institute of Technology (SAIT), 2025
- **Silver Prize, Samsung HumanTech Paper Award**, Samsung Advanced Institute of Technology (SAIT), 2025
- **Future Scholarship** at Wooduk Foundation, 2024
- **Best Paper Award**, Korean Society for Precision Engineering (KSPE), 2024
- **Outstanding Paper Award**, Korean Society of Automotive Engineers (KSAE), 2024

- **Second Place in the Science as Art Competition**, Material Research Society (MRS), 2023
- **Outstanding Student Poster Award**, Material Research Society (MRS), 2023
- **Best Oral Presentation Award**, International Conference on Electronic Materials and Nanotechnology for Green Environment (ENGE), 2022
- **Best Collaborative Patent Award**, KAIST & Samsung Electronics, 2022
- **Best Paper Award**, Korean Society for Precision Engineering (KSPE), 2022
- **Outstanding TA Award**, Education 4.0 Q Program, KAIST, 2022
- **Best Tutor Award**, Freshman tutoring program, KAIST, 2022
- **Outstanding Paper Award**, Korean Tribology Society (KTS), 2021
- **Best Tutor Award**, Freshman tutoring program, KAIST, 2021
- **Outstanding Paper Award**, Korean Tribology Society (KTS), 2020
- **Summa Cum Laude**, HYU, 2020
- **President's Award**, Capstone Design Fair, HYU, 2019
- **Best Tutor Award**, Foreign student tutoring program, HYU, 2018
- **Hanyang Brain Scholarship (Academic Scholarship)**, HYU, 2014 - 2020

PUBLICATIONS

Notes: # indicates equally contributing authors. * indicates the corresponding author(s).

First Authored Papers

1. **S. Kang**, J.-h. Jeong, H. J. Ryu, G. Park, S. Kim*, Carbon nanotube sandpaper for atomic-precision surface finishing, *Advanced Composites and Hybrid Materials*, accepted.
2. H. Je#, **S. Kang#**, S. Kim*, Challenges and innovations in chemical mechanical polishing in the More-than-Moore Era, *International Journal of Precision Engineering and Manufacturing - Green Technology*, accepted
3. H.-D. Lee#, **S. Kang#**, Y.-J. Kim, E.-H. Lee, S.-H. Park, W.-S. Cho, Y.-J. Park, A. Haag, S. Watanabe, M. Arnold, S. Kim*, H.-J. Lee*, Effects of Grain Size on Bonding Performance of Cu-to-Cu Bonding, *Journal of Materials Research and Technology*, **39**, 8965-8974 (2025)
4. **S. Kang#**, C. Jeon#, J. Park, S. Park, K. M. Kim*, S. Kim*, Chemical mechanical polishing of plasma-modified Cu/polymer interfaces for advanced hybrid bonding, *Advanced Science*, online published, e12611 (2025)
5. S. Park#, **S. Kang#**, D. G. Kim#, S. Kim*, Mitigation of Cu Dishing in Chemical Mechanical Polishing using Micro-Structured Pads, *CIRP Annals* **74**, 1, 465-469 (2025)
6. **S. Kang#**, S. Yun#, H. Hwang, S. Kim*, Analysis of Torque Variation in Bolt Fastening on Coated Steel Surfaces, *Tribology International* **202**, 110395 (2025)
7. C. Jeon#, **S. Kang#**, M. E. Kim#, J. Park, D. Kim, S. Kim*, K. M. Kim*, Ru Passivation Layer Enables Cu-Cu Direct Bonding at Low Temperatures with Oxidation Inhibition, *ACS Applied Materials & Interfaces* **16**, 36, 48481-48487 (2024)
8. J. Park#, **S. Kang#**, M. E. Kim, N. J. Kim, J. Kim, S. Kim*, K. M. Kim*, Advanced Cu/Polymer Hybrid Bonding System for Fine-Pitch 3D Stacking Devices, *Advanced Materials Technologies* **8**, 20, 2202134 (2023)
9. **S. Kang#**, S. Shin#, H. Hwang, S. Kim*, Predictive model for bearing torque in bolt fastening, *CIRP Annals* **71**, 1, 489-492 (2022)
10. **S. Kang#**, S. Yun#, H. Hwang, S. Kim*, Effect of Coating Thickness on Torque Variation in Bolt Fastening, in preparation

Contributing Authored Papers

11. Y. Son, K. Pak, T. Lee, M. C. Prayogo, J. Choi, **S. Kang**, M. Kang, B. Oh, S. Y. Sun, S. Kim*, S. G. Im*, S. Jon*, S. Park*, An ionic gelation powder for ultrafast hemostasis and accelerated wound healing, *Advanced Functional Materials*, online published, e23910 (2025)
12. J.-U. Lee, H.-D. Lee, S.-H. Oh, Y.-D. Shim, **S. Kang**, S. Kim*, H.-J. Lee*, E.-H. Lee*, Modeling framework and discussion of microstructural effects on the formation of Cu–Cu bonding interfaces in semiconductor stacking, *International Journal of Plasticity*, online published, 103501 (2025)
13. G. Kang, J. Kim, J. H. Park, **S. Kang**, D. G. Kim, Y.-J. Kim*, Frequency-comb-referenced Terahertz Fabry-Pérot interferometry for monitoring semiconductor wafer thinning process with a nanometer precision, *CIRP Annals* **74**, 1, 679-683 (2025)
14. J. Choi, S. Jang, D. Lee, **S. Kang**, S. Kim*, S. E. Kim*, Characteristics of PVD SiCN for Application in Hybrid Cu Bonding, *Journal of Semiconductor Technology and Science* **25**, 1, 102-108 (2025)
15. H. H. Chu, D. H. Kim, J. H. Park, **S. Kang**, J. Son, H. Lee, H. Yoo, S.-W. Kim, S. Kim, Y.-J. Kim*, Nanometer-resolution white-light scanning interferometry for surface-profiling of hybrid bonding samples for advanced semiconductor packaging, *Applied Surface Science* **689**, 30, 162466 (2025)
16. J.-H. Ha#, I. Yang#, J. Ahn#, **S. Kang**, Z.-J. Zhao, Y. Jeong, H. Je, J. Cheong, S. H. Hwang, S. Jeon, J.-H. Jeong*, S. Kim*, I. Park*, Nanotransfer Printing for Synthesis of Vertically Aligned Carbon Nanotubes with Enhanced Atomic Penetration, *Advanced Functional Materials* **34**, 42, 2315028 (2024) (selected as cover)
17. J.-H. Lim, S.-H. Oh, **S. Kang**, K.-J. Lee, S.-J. Yook*, Development of cutoff size adjustable omnidirectional inlet cyclone separator, *Separation and Purification Technology* **276**, 119397 (2021)
18. H. J. Ryu, D. G. Kim, **S. Kang**, J.-h. Jeong, S. Kim*, Mechanical abrasion by bi-layered pad micro-asperity in chemical mechanical polishing, *CIRP Annals* **70**, 1, 273-276 (2021)
19. D. G. Kim, D. Won, I. Yang, **S. Kang**, J. Y. Seok, H. Baek, S. Kim*, Surface-modified anode current collectors via lithiophilic zinc-based bimetallic co-electrodeposition for lithium-metal batteries, in revision
20. I. Yang, D. Won, **S. Kang**, H. Baek, S. Kim*, Ultrathin 3D-Structured Cu/CNT Current Collector with Lithiophilicity Gradient for High-Performance Anode-Free Li-Metal Battery Anodes, in preparation
21. D. G. Kim, **S. Kang**, S. Kim*, Additively Manufactured Functionally Graded Structured Pads for Defect-less Semiconductor Planarization, in preparation
22. H. J. Ryu, S. Yun, J.-h. Jeong, Y. S. Eom, **S. Kang**, D. G. Kim, S. Kim*, Pad-Abrasive-Wafer Interaction at Micro-Scale in Chemical-Mechanical Polishing, in preparation

PATENTS

(TOTAL: 21, GRANTED: KR 3 / JP 1, APPLICATIONS: KR 7 / US 4 / EP 2 / JP 1 / CN 2 / TW 1)

- **KR Patent 10-2539172**
- **JP Patent 7704355**
- **US Patent Application 18/289,189**
- **EP Patent Application 21964180.0**
- **CN Patent Application 202180099397.2**
- **(PCT/KR2021/016560)**

Composite polishing pad including highly abrasion-resistant thin film coating bound with carbon nanotubes, and method for producing the same

- **KR Patent 10-2531705**
- **US Patent Application 18/289,607**
- **EP Patent Application 21964181.8**

- **JP Patent Application 2023-571624**
- **CN Patent Application 202180099396.8**
- **(PCT/KR2021/016562)**
Composite polishing pad including carbon nanotubes, and method for producing the same
- **KR Patent 10-2625829**
- **US Patent Application 19/061,232**
Fixed-abrasive pad using vertically aligned carbon nanotubes and fabrication method for the same
- **KR Patent Application 10-2022-0002523**
- **US Patent Application 17/805,735**
- **TW Patent Application 111121265**
Polishing pad, chemical mechanical polishing apparatus including the same, and method for manufacturing semiconductor device using the same
- **KR Patent Application 10-2025-0091017**
Electrical signal measurement system having a hierarchical surface microstructure impregnated with conductive material
- **KR Patent Application 10-2024-0110413**
Fixed-abrasive polishing pad using vertically aligned carbon nanotube and method of manufacturing the same
- **KR Patent Application 10-2024-0058665**
Polishing processing method and polishing processing equipment
- **KR Patent Application 10-2023-0187811**
Plastic molding device for polishing pad, chemical mechanical polishing device including same, and method of controlling surface roughness of polishing pad using same
- **KR Patent Application 10-2023-0139596**
Semiconductor circuit manufacturing method
- **KR Patent Application 10-2020-0134670**
Design method of ionizer anti-virus ventilation and ventilation system for protection using a voltage type copper hierarchy filter

PEER-REVIEW FOR SCIENTIFIC JOURNALS

- Advanced Engineering Materials
- Journal of the Korean Society for Precision Engineering

CONFERENCE PRESENTATIONS

1. **S. Kang**, C. S. Jeon, G. Park, K. M. Kim*, S. Kim*, Chemical Mechanical Polishing for Polymer-based Hybrid Bonding, oral presentation in Korean Society for Precision Engineering (KSPE), Yeosu, South Korea, November 2025
2. **S. Kang**, C. S. Jeon, J. Park, S. Park, K. M. Kim*, S. Kim*, Plasma-Assisted Chemical-Mechanical Polishing for Cu/Polymer Hybrid Bonding Interfaces, oral presentation in International Symposium on Microelectronics and Packaging (ISMP), Daegu, South Korea, November 2025
3. **S. Kang**, C. S. Jeon, J. Park, S. Park, K. M. Kim*, S. Kim*, Planarization of Cu/Polymer Interfaces via Plasma-Assisted CMP for Hybrid Bonding, oral presentation in International Conference on Planarization Technology (ICPT), Hong kong, China, October 2025
4. **S. Kang**, C. S. Jeon, K. M. Kim*, S. Kim*, Chemical Mechanical Polishing of polymer surface for hybrid bonding in advanced semiconductor packaging, oral presentation in Korean Tribology Society (KTS), Jeju, South Korea, October 2025

5. **S. Kang**, S. Yun, H. Hwang, S. Kim*, Analysis of Bearing Friction Deviation in Bolted Joints of Coated Steel Sheets, oral presentation in Korean Tribology Society (KTS), Jeju, South Korea, October 2025
6. S. Kim*, S. Park, **S. Kang**, D. G. Kim, Mitigation of Cu dishing in chemical mechanical polishing using micro-structured pads, oral presentation in CIRP General Assembly, Stockholm, Sweden, August 2025
7. S. Park, **S. Kang**, D. G. Kim, S. Kim*, Improvement of Structural Uniformity in Pad Surfaces for Control of Dishing Defect in Chemical Mechanical Polishing, oral presentation in Korean Society for Precision Engineering (KSPE), Jeju, South Korea, May 2025
8. S. Kim*, S. Park, **S. Kang**, D. G. Kim, Chemical Mechanical Polishing for Enhancement of Hybrid Bonding Strength, oral presentation in Korean Society for Precision Engineering (KSPE), Jeju, South Korea, May 2025
9. Y.-J. Kim*, G. Kang, J. Kim, J. H. Park, **S. Kang**, D. G. Kim, S. Kim*, High-precision Terahertz Interferometry for Monitoring Semiconductor Wafer Thinning Process, oral presentation in Korean Society for Precision Engineering (KSPE), Jeju, South Korea, May 2025
10. **S. Kang**, S. Yun, H. Hwang, S. Kim*, Effect of Plowing Friction in Bolt Fastening on Coated Steel Plates, oral presentation in International Conference on Manufacturing, oral presentation in Machine Design and Tribology (ICMDT), Himeji, Japan, April 2025
11. C. S. Jeon, **S. Kang**, S. Kim*, K. M. Kim*, Ru Passivation Layer Enables Cu-Cu Direct Bonding at Low Temperatures with Oxidation Inhibition, poster presentation in Material Research Society (MRS), Seattle, WA, USA, April 2025
12. **S. Kang**, C. S. Jeon, J. Park, S. Park, K. M. Kim*, S. Kim*, Cu/Polymer Hybrid Bonding with Plasma-Assisted Chemical Mechanical Polishing, oral presentation in The Korean Microelectronics and Packaging Society (KMEPS), Incheon, South Korea, April 2025
13. S. Park, **S. Kang**, D. G. Kim, S. Kim*, Modeling and Reduction of Cu Dishing according to Pad Surface Properties in Chemical Mechanical Polishing, poster presentation in The Korean Microelectronics and Packaging Society (KMEPS), Incheon, South Korea, April 2025
14. **S. Kang**, J.-h. Jeong, H. J. Ryu, S. Kim*, Nano Sandpaper using Carbon Nanotubes as Coated Abrasives for Ultraprecision Surface Finishing, oral presentation in Young Korean Academy of Science and Technology (YKAST) International Conference, Busan, South Korea, February 2025
15. **S. Kang**, C. S. Jeon, S. Park, J. Park, K. M. Kim*, S. Kim*, Cu/Polymer CMP Technology for Heterogeneous Semiconductor Integration, oral presentation in 80th Korea Chemical Mechanical Planarization Users Group Meeting (CMPUGM), Suwon, South Korea, November 2024
16. J.-H. Son, J. Han, H.-D. Lee, **S. Kang**, S. Kim*, H.-J. Lee*, Optimization of Additives to Fabricate Fine-Grained Cu via Electroplating for Cu-Cu Direct Bonding, poster presentation in International Symposium on Microelectronics and Packaging (ISMP), Busan, South Korea, November 2024
17. **S. Kang**, H. J. Ryu, J.-h. Jeong, T. Kim, S. Kim*, Nano Sandpaper for Precise Surface Refinement Using Vertically Aligned Carbon Nanotubes, oral presentation in Korean Society of Mechanical Engineers (KSME) Annual Meeting, Jeju, South Korea, November 2024
18. D. G. Kim, **S. Kang**, S. Park, S. Kim*, Soft Microstructured Surfaces with Ultrathin Hard Skin Fabricated by Stereolithography, oral presentation in Korean Society of Mechanical Engineers (KSME) Annual Meeting, Jeju, South Korea, November 2024
19. S. Park, **S. Kang**, D. G. Kim, S. Kim*, Precision Dishing Control in Chemical Mechanical Polishing using Surface Structured Pads for Hybrid Bonding, poster presentation in Korean Society of Mechanical Engineers (KSME) Annual Meeting, Jeju, South Korea, November 2024
20. I. Yang, D. Won, **S. Kang**, S. Kim*, Ultrathin Nanoporous Cu with Lithiophilicity-Lithiophobicity Gradient by MWCNT for Anode-Free Li-Metal Battery Anode Current Collector, poster presentation in Korean Society of Mechanical Engineers (KSME) Annual Meeting, Jeju, South Korea, November 2024

21. **S. Kang**, C. S. Jeon, S. Park, J. Park, K. M. Kim*, S. Kim*, Chemical Mechanical Polishing of Polymer Surfaces for Cu/Polymer Hybrid Bonding Process, oral presentation in Korean Research Group for Polishing Technology (KRGPT), Daejeon, South Korea, October 2024
22. H. Hwang, **S. Kang**, S. Yun, S. Kim*, Development of Methodology for Predicting Friction Coefficient in Bolt and Coated/Uncoated Steel Plate Fastening, oral presentation in Korean Society of Automotive Engineers (KSAE), Geoje, South Korea, June 2024
23. **S. Kang**, C. S. Jeon, K. M. Kim*, S. Kim*, CMP Technology for Cu/Polymer in 3D Stacked Semiconductor Fabrication, oral presentation in Korean Society for Precision Engineering (KSPE), Jeju, South Korea, May 2024
24. H. Choi, **S. Kang**, M. Gyeon, Y. Kim, M. Jeong, K. Kang*, S. Kim*, J. Heo*, Low-temperature polycrystalline Ge growth on PtSe₂ for BEOL compatible devices, poster presentation in International Conference on Electronics, Information, and Communication (ICEIC), Taipei, Taiwan, January 2024
25. **S. Kang**, J. Park, C. S. Jeon, K. M. Kim*, S. Kim*, CMP Technology for Cu/Polymer Hybrid Bonding, oral presentation in Korean Conference on Semiconductors (KCS), Gyeongju, South Korea, January 2024
26. **S. Kang**, J.-h. Jeong, H. J. Ryu, D. Won, S. Kim*, Plasma etched vertically aligned carbon nanotube embedded polyurethane surface for precision semiconductor wafer polishing, poster presentation in Material Research Society (MRS), Boston, MA, USA, November 2023
27. I. Yang, D. Won, **S. Kang**, S. Kim*, Ultrathin Nanofibrillar Cu Sheet Covered with Directly Grown Lithiophobic CNT for Anode-free Li-metal Battery Anode Current Collectors, poster presentation in Material Research Society (MRS), Boston, MA, USA, November 2023
28. M. Kim, **S. Kang**, S. Kim*, K. M. Kim*, Demonstration of Ruthenium Passivation for Cu-to-Cu Direct Bonding, oral presentation in International Conference on Advanced Electromaterials (ICAE), Jeju, South Korea, November 2023
29. **S. Kang**, J. Park, C. S. Jeon, K. M. Kim*, S. Kim*, Plasma-Assisted CMP for Planarization of Adhesive Polymers in 3D Stacked Semiconductor Devices, poster presentation in International Conference on Planarization Technology (ICPT), Kanazawa, Japan, November 2023
30. **S. Kang**, J.-h. Jeong, S. Kim*, Advanced Polishing Technology Using Vertically Aligned Carbon Nanotube Thin Films, poster presentation in Advanced Epitaxy for Freestanding Membranes and 2D Materials (AEFM), Seoul, South Korea, July 2023
31. **S. Kang**, S. Yun, H. Hwang, S. Kim*, Effect of coating hardness and thickness on friction in bolt fastening, poster presentation in 3rd Korea-Tribology International Symposium (K-TRIB), Busan, South Korea, April 2023
32. H. J. Ryu, J.-h. Jeong, **S. Kang**, Y. S. Eom, S. Kim*, Fracture and Wear Behavior of Hard-on-Soft Bi-layered Polyurethane Surfaces, oral presentation in 3rd Korea-Tribology International Symposium (K-TRIB), Busan, South Korea, April 2023
33. **S. Kang**, J. Park, K. M. Kim*, S. Kim*, Characterization of Friction between Bolts and Coated Steel Plates, oral presentation in 3rd Korea-Tribology International Symposium (K-TRIB), Busan, South Korea, April 2023
34. S. Yun, **S. Kang**, H. Hwang, S. Kim*, Characterization of Friction between Bolts and Coated Steel Plates, oral presentation in 3rd Korea-Tribology International Symposium (K-TRIB), Busan, South Korea, April 2023
35. J. Park, **S. Kang**, S. Kim*, K. M. Kim*, Polymer/Cu hybrid CMP process for high-reliability of Cu direct bonding, oral presentation in International Conference on Electronic Materials and Nanotechnology for Green Environment (ENGE), Jeju, South Korea, November 2022
36. **S. Kang**, S. Shin, H. Hwang, S. Kim*, Friction Variation in Bolt Fastening according to Contact Surface Profiles, oral presentation in Korea-Japan Tribology Symposium (KTS), Gyeongju, South Korea, October 2022

37. **S. Kang**, J.-h. Jeong, S. Kim*, Fabrication and Characterization of Fixed-Nano-Abrasive Polishing Pads using Vertically Aligned Carbon Nanotubes, poster presentation in International Conference on Planarization Technology (ICPT), Portland, Oregon, USA, September 2022
38. S. Kim*, **S. Kang**, S. Shin, H. Hwang, Predictive model for bearing torque in bolt fastening, oral presentation in CIRP General Assembly, Bilbao, Spain, August 2022
39. S. J. Kim, J.-h. Jeong, **S. Kang**, S. Kim*, Engineered vertically-aligned CNT for plasmon-enhanced optical sensing with programmable molecular delivery, poster presentation in Material Research Society (MRS), Honolulu, Hawaii, USA, May 2022
40. **S. Kang**, S. J. Kim, J.-h. Jeong, S. Kim*, Abrasive Wear and Surface Polishing by Vertically Aligned Carbon Nanotubes, oral presentation in Korean Society for Precision Engineering (KSPE), Busan, South Korea, November 2021
41. **S. Kang**, S. Shin, H. Hwang, S. Kim*, Effect of bolt surface properties on characteristics of tightening friction, poster presentation in Korean Society for Precision Engineering (KSPE), Busan, South Korea, November 2021
42. H. J. Ryu, D. G. Kim, **S. Kang**, J.-h. Jeong, S. Kim*, Manipulating Mechanical Properties of Pad Surface Asperities for Material Removal Rate Enhancement in Chemical Mechanical Polishing, oral presentation in Korean Society for Precision Engineering (KSPE), Busan, South Korea, November 2021
43. **S. Kang**, S. Shin, H. Hwang, S. Kim*, Prediction of underhead friction coefficient in bolt tightening, oral presentation in Korean Tribology Society (KTS), Jeju, South Korea, October 2021
44. S. Kim*, H. J. Ryu, D. G. Kim, **S. Kang**, J.-h. Jeong, Mechanical abrasion by bi-layered pad micro-asperity in chemical mechanical polishing, oral (online) presentation in CIRP General Assembly, Paris, France, August 2021
45. **S. Kang**, S. J. Kim, J.-h. Jeong, S. Kim*, Abrasive polishing using composite pads with fixed vertically aligned carbon nanotubes, oral (online) presentation in in PRESM, Jeju, South Korea, July 2021
46. **S. Kang**, S. J. Kim, J.-h. Jeong, S. Kim*, Fabrication of fixed-abrasive pads using vertical aligned CNTs and analysis of its mechanical polishing performances, poster (online) presentation in Korean Society for Precision Engineering (KSPE), Jeju, South Korea, May 2021
47. **S. Kang**, S. Shin, H. Hwang, S. Kim*, Characteristics of tightening friction by surface topography of bolt underhead, oral (online) presentation in Korean Tribology Society (KTS), South Korea, April 2021
48. H. J. Ryu, D. G. Kim, **S. Kang**, J.-h. Jeong, S. Kim*, Chemical-mechanical polishing of soft pad asperity with protective hard thin film, poster (online) presentation in International Conference on Precision Engineering and Sustainable Manufacturing (PRESM), Seoul, South Korea, November 2020
49. H. J. Ryu, D. G. Kim, **S. Kang**, J.-h. Jeong, S. Kim*, Characterization of CMP Process at Single Contact Point of Pad Micro-Asperity, poster presentation in Korean Tribology Society (KTS), Daejeon, South Korea, September 2020