Gagyeong Park

Ph.D. Candidate, Department of Aerospace Engineering, Korea Advanced Institute of Science and Technology (KAIST)

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RESEARCH INTERESTS

Deployable structures · Antenna systems · Aerospace robotics

EDUCATION

Ph.D., Department of Aerospace Engineering *Mar. 2023 – Present*

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea

Advisor: Prof. Dae-Young Lee

Dissertation in preparation: Integrated Crease-and-Hole Pattern Design Framework for Damage-Free, High-Efficiency Packaging of Membrane Reflectors in Deployable Spaceborne Antennas

M.S., Cho Chun Shik Graduate School of Mobility *Mar. 2021 – Feb. 2023*

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea

Advisor: Prof. Seungyoung Ahn

Thesis: Package Design for Signal Integrity of Low-power Double Data Rate Memory

B.S., School of Mechatronics Engineering *Mar. 2017 – Feb. 2021*

Korea University of Technology and Education (KOREATECH), Cheonan, Republic of Korea

JOURNAL PUBLICATIONS

*† indicates equal contribution. * indicates corresponding author.*

[1] **G. Park**, D.-W. Yang, M.-W. Oh, J.-S. Chae, H. Yoon, J.-H. Han, and D.-Y. Lee*, "Deployable mesh reflector antenna for global navigation satellite system radio occultation within 1U CubeSat form factor," *Aerospace Science and Technology*, vol. 167, art. no. 110694, Dec. 2025.

[2] **G. Park**†, K.-H. Lee†, S.-J. Lee, S. Lee, M. Lee, D. Kim, and D.-Y. Lee*, "Transformable Underwater Docking Mechanism based on Origami-inspired Deployable and Bistable Structures," *Structural Engineering and Mechanics*, vol. 95, no. 6, pp. 507–520, Sept. 2025.

[3] M.-W. Oh, D.-W. Yang, S.-B. Lee, **G. Park**, S.-J. Park, K.-H. Lee, T.-Y. Lee, N.-S. Cho, G.-J. Shim, J.-W. Kim, J.-T. Jang, and D.-Y. Lee*, "Advances and Trends in Space Robotics Technology Development and Research," *Journal of the Korean Society for Aeronautical & Space Sciences*, vol. 53, no. 10, pp. 1083–1102, 2025. (in Korean)

[4] **G. G. Park**, J. Y. Kim, J. Y. Keum, and S. S. Lee*, "Development of Runway Cleaning Robot Based on Deep Learning," *Journal of Semiconductor & Display Technology*, vol. 20, no. 3, pp. 140–145, 2021. (in Korean)

CONFERENCE PUBLICATIONS

[1] **G. Park**, D.-W. Yang, M.-W. Oh, and D.-Y. Lee, "1U-Scale Deployable Mesh Reflector Antenna for GNSS-RO CubeSat," *International Conference on ICT Convergence (ICTC)*, Jeju, Korea, Oct. 14–17, 2025.

[2] **G. Park**, K.-H. Lee, S.-J. Lee, and D.-Y. Lee, "Design of Deployable Underwater Docking Station for Autonomous Underwater Vehicle," *ACEM24 / Structures24*, Seoul, Korea, Aug. 19–22, 2024.

[3] S. Ryu, H. Kim, **G. Park**, S. Lee, D. Park, S. Lee, J. Rhee, J. Kim, and S. Ahn, "Signal Integrity Analysis and Design for Cascaded Wire Bonding of Low-Power Double Data Rate (LPDDR)," *2024 IEEE Joint International Symposium on Electromagnetic Compatibility, Signal & Power Integrity (EMC Japan/APEMC Okinawa)*, Ginowan, Okinawa, Japan, 2024, pp. 221–224.

[4] H. Kim, **G. Park**, S. Ryu, J. Kim, J. Lee, and S. Ahn, "Signal Integrity Analysis of Wire Bonding Finger Capacitance to Reduce the Reflection of Multi-drop Topology for Low-Power Double Data Rate (LPDDR)," *2023 IEEE Symposium on Electromagnetic Compatibility & Signal/Power Integrity (EMC+SIPI)*, Grand Rapids, MI, USA, 2023, pp. 141–146.

[5] S. Lee, H. Kim, D. Park, J. Ahn, S. Ryu, **G. Park**, and S. Ahn, "Deep Reinforcement Learning-based Decoupling Capacitor Optimization Method for Multi-Power Domain considering Transfer Noise in 3D-ICs," *2022 IEEE Electrical Design of Advanced Packaging and Systems (EDAPS)*, Urbana, IL, USA, 2022, pp. 1–3.

[6] S. Lee, S. Woo, H. Kim, **G. Park**, Y. Shin, S. Son, and S. Ahn, "Double C-Shaped Reactive Shielding Coils for Low EMF and High Efficiency Wireless Power Transfer System," *2022 Wireless Power Week (WPW)*, Bordeaux, France, 2022, pp. 610–613.

PATENTS

All patents are filed in the Republic of Korea.

[1] J.-H. Han, J.-H. Lim, D.-Y. Lee, and **G. Park**, "DEPLOYABLE STRUCTURE AND HELICAL ANTENNA INCLUDING THE SAME," Patent Application No. 10-2025-0214520 (filed).

[2] D.-Y. Lee, **G. Park**, J.-H. Han, and J.-H. Lim, "DEPLOYABLE PLANAR REFLECTOR DEVICE," Patent Application No. 10-2026-0000408 (filed).

[3] D.-Y. Lee, **G. Park**, K.-H. Lee, S.-J. Lee, and S.-J. Lee, "HULL-MOUNTED DEPLOYABLE DOCKING APPARATUS FOR UNDERWATER RECOVERY OF AUTONOMOUS UNDERWATER VEHICLES," Patent Application No. 10-2025-0079669 (filed).

[4] D.-Y. Lee, M.-W. Oh, **G. Park**, D.-S. Choi, and J.-H. Kim, "POINTING MECHANISM WITH TWO-AXIS DIRECT DRIVE MOTORS FOR REFLECTOR," Patent Application No. 10-2025-0032546 (filed).

[5] D.-Y. Lee, **G. Park**, D.-W. Yang, J.-H. Han, and J.-S. Chae, "SELF-LOCKING HINGE DEVICE WITH OBLIQUE ROTATION AXIS FOR DEPLOYABLE WRAPPED RIB ANTENNA AND MANUFACTURING METHOD THEREOF," Patent Application No. 10-2024-0094872 (filed).

[6] S. Ahn, H.-W. Kim, and **G. Park**, "SEMICONDUCTOR PACKAGE WITH WIRE BONDING FINGER CAPACITOR," Patent Application No. 10-2024-0061172 (filed).

[7] S.-S. Lee, J.-Y. Keum, J.-Y. Kim, **G. Park**, M.-K. Jeon, and Y.-J. Choi, "Mobile robot equipped with FOD detection module and FOD collection method using the same," Patent No. 10-2302312 (granted; Application No. 10-2019-0137879).

TEACHING EXPERIENCE

Teaching Assistant, Department of Aerospace Engineering, KAIST

Spring 2023	Aerospace Thermodynamics
Fall 2023	Aerospace Engineering Laboratory I
Spring 2024	Aerospace System Design I
Fall 2024	Aerospace Engineering Laboratory I
Spring 2025	Special Lectures in Aerospace Engineering (Space Materials and Testing)
Fall 2025	Aerospace Engineering Laboratory I
Spring 2026	Mechanics of Aerospace Materials

TECHNICAL SKILLS

SolidWorks, Autodesk Fusion 360, ANSYS Electronics, ANSYS Workbench, HSPICE, Advanced Design System (ADS), MATLAB, Python