

## Curriculum Vitae



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- **Affiliation:** Dept. of Naval Architecture and Ocean Engineering, Pusan National University,  
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- **R&D Interests and Experiences:**
  - Fatigue design and analysis for large welded structures
  - Structural integrity assessment to determine repair, maintenance and life extension of ship and offshore structures
  - Nonlinear FE analysis for characterization of elasto-plastic behavior of welded structures
  - Thermal-elasto-plastic analysis for the evaluation of residual stress and distortion
  - Assessment of fatigue and fracture characteristics of low temperature materials
- **Academic History:**
  - Ph.D., Engineering Science and Mechanics, Virginia Polytechnic Institute and State University, U.S.A., 1995 – 2000.
  - M.S., Dept. of Naval Architecture and Ocean Engineering, Pusan National University, Korea, 1993 – 1995.
  - B.S., Dept. of Naval Architecture and Ocean Engineering, Pusan National University, Korea, 1987 – 1993.
- **Professional positions:**
  - Adjunct professor, International School of Ocean Science and Engineering of Harbin Institute of Technology, China, 2016 – Present.
  - Professor, Department of Naval Architecture and Ocean Engineering, Pusan National University, Korea, 2012 – Present.
  - Associate Dean of College of Engineering (Academic Affairs), Pusan National University, Korea, 2016 – 2018.
  - Department Chair, Department of Naval Architecture and Ocean Engineering, Pusan

National University, Korea, 2011 – 2013.

- Visiting professor, Department of Mechanical Engineering, Virginia Polytechnic Institute and State University, U.S.A., 2009 – 2010.
- Associate Professor, Department of Naval Architecture and Ocean Engineering, Pusan National University, Korea, 2007 – 2012.
- Assistant Professor, Department of Naval Architecture and Ocean Engineering, Pusan National University, Korea, 2003 – 2007.
- R&D engineer, New York Power Authority, NY, U.S.A., 2001 – 2003.
- Postdoc, Virginia Polytechnic Institute and State University, VA, U.S.A., 2000 – 2001.

- **Academic Society Activity:**

- President, The Society of Naval Architects of Korea, 2024-present
- Vice President, Society of Korean Welding and Joining, 2023-present
- Standing Committee, International Ship and Offshore Structures Congress (ISSC), 2019 – Present.
- Korean National Delegate, International Institute of Welding (IIW), 2015 – Present.
- Member of American Society of Mechanical Engineers, 1999 – Present.
- Chairman, Korea Ship and Offshore Structures Congress (KSSC), 2022-2023
- International Vice President, Society of Korean Welding and Joining, 2021-2022.
- Editor, Journal of Korean Welding and Joining, 2020 – 2021
- Associate Editor of the International Committee on Journal, The Society of Naval Architects of Korea, 2020 – 2023.
- Chairman of Education Committee, The Society of Naval Architects of Korea, 2020 – 2022.
- Committee Member, International Ship and Offshore Structures Congress (ISSC), Materials and Fabrication Technology, 2013 – 2018
- Associate Editor, Journal of Offshore Mechanics and Arctic Engineering, 2011 – 2018.
- Associate Editor, Journal of Korean Welding and Joining Society, 2009 – 2019.
- Scientific Committee Member, International Conference on Ocean, Offshore and Arctic Engineering (OMAEE) Materials Technology, 2009 – 2019.

- **Public Activity:**

- Technical review committee member, Korean Register, 2024-Present
- Executive Director, Research Institute of Medium & small Shipbuilding, 2024-Present
- Board of Director (External member), CHOSUN WELDING, 2020-Present
- Director of human resource development program for marine resource development, Creative Korea 1 (CK1), Pusan National University, Korea, 2014 – 2019.
- Director of the Startups and Entrepreneurship Education Center, Pusan National University,

Korea, 2012 – 2014.

- Director of Center for Business Incubation and Venture, Pusan National University, Korea, 2012 – 2014.
- Director of the Center for Industry-Academic Collaboration for SMBA, Korea, 2011 – 2013.
- Director of the Center for Busan-Kyungnam Branch of Korean Institute of Industrial Technology, Korea, 2011 – 2013.

- **Honors and awards:**

- Best Paper Award, The Society of Naval Architects of Korea, 2023.
- Presentation Award for The Best Paper, Korean Welding and Joining Society, 2023.
- Presentation Award for The Best Paper, Korean Welding and Joining Society, 2023.
- KISWEL Technology Innovation Award, Korean Welding and Joining Society, 2022.
- Presentation Award for The Best Paper, Korean Welding and Joining Society, 2022.
- Presentation Award for The Best Poster Paper, Korean Welding and Joining Society, 2021.
- Best Paper Award, Korean Welding and Joining Society, 2020
- Presentation Award for The Best Poster Paper, Korean Welding and Joining Society, 2019.
- Outstanding Paper Award, Korean Welding and Joining Society, 2018.
- Minister of Trade, Industry and Energy Award, Ministry of Trade, Industry and Energy, 2018.
- Outstanding Paper Award, The Society of Naval Architects of Korea, 2018.
- Outstanding Paper Award, Korean Welding and Joining Society, 2017.
- Appreciation Award, The American Society of Mechanical Engineers, 2016.
- Science and Technology Best Paper Award, Korean Federation of Science and Technology Societies, 2015.
- Best Paper Award, Korean Welding and Joining Society, 2015.
- Marine Science and Technology Award, Korea Association of Marine Industry, 2013.
- 100 Leaders of the Science Technical in 2020 Korea Industry, National Academy Engineering of Korea, 2013.
- Best Paper Award, Korean Welding and Joining Society, 2013.
- Best Lecture Award, Pusan National University, 2012.
- Best Paper Award, Korean Welding and Joining Society, 2009.
- Young Faculty Recognition Award, Pusan National University, 2007.
- Outstanding New faculty Award, Pusan National University, 2007.
- Best paper award for young researcher, Korean Welding and Joining Society, 2006.

- **Patent:**

- Method of measuring fracture toughness considering the plastic rotational factor based on double clip gauge, No. 10-2456685, Korea, 2022

- Cushion System for Elevator Crash, No. 10-1933198, Korea, 2018.
- Smartphone Displayed Warning Messages, No. 10-1678634, Korea, 2016.
- Apparatus for Decreasing Sloshing in Liquid Storage Tank, No. 10-1295688, Korea, 2013.
- Jig Structure for Tensile and Fatigue of Thin plates and Method for Tensile and Fatigue Test Using the Same, No. 10-1262893, Korea, 2013.
- Device for Structural Health Monitoring of Insulation System in LNG Carriers, No. 10-0898110, Korea, 2009.

- **Books and Chapters:**

- Fracture and Non-destructive Damage Evaluation, Hongrung, 2023
- Sensor solutions for assessing and monitoring offshore structures in Sensor Technologies for Civil Infrastructures, 2<sup>nd</sup> Edition, Woodhead Publishing, 2022
- Weld Joint Terminology Dictionary (Strength Field), Korean Welding and Joining Society, 2018
- Proceeding of the 20<sup>th</sup> ISSC Congress (ISSC) Chap. Materials, CRC Press, 2017
- Mechanical Behavior of Materials (Norman E. Dowling, Pearson), Hongrung, 2015
- Sensing solutions for assessing and monitoring offshore structures in Sensor Technologies for Civil Infrastructures, Woodhead publishing, 2014
- Engineering Mechanics Statics, 6/e (J. L. Meriam, Wiley), Bumhan Book, 2010
- Ships and Offshore Structures in Encyclopedia of Structural Health Monitoring, John Wiley & Sons Ltd, 2009
- Mechanical behavior of marine structures, Pusan National University, 2008
- Engineering Mechanics Statics, 5/e (J. L. Meriam, Wiley), Bumhan Book, 2006

- **Representative Publication:**

- **International Journal**

- Park, Y. I., Kang, M. S., Kim, M. H., Choi, J. H., Kim, J. H., Experimental and Numerical Study on the Shock Characteristics of an Electric Switchboard with Wire Rope Isolators in Naval Ships, Journal of Engineering for the maritime Environment, 2024.01, In progress
- Kang, M. S., Kim, J. H., Kim, M. H., Experimental and numerical study on the vibration characteristics of an electric switchboard with wire rope isolators in naval ships, Ocean Engineering, 283, 1, 2023.09
- Cho, D. P., Nam, S. K., Cho, C. H., Lee, D. J., Jeong, E. Y., Jeong, Y. C., Lee, J. Y., Cridland, M., Kim, J. S., Kim, J. H., Kim, M. H., A New Study on the Fatigue Properties of SA Weld Joints by Considering the Effects of Welded Bead Shape, Journal of Marine Science and Engineering, 10, 10, 1527, 2022.10

- Lee, M. S., Kim, M. H., A new fatigue crack growth model considering underloads and overloads history together with stress ratio, *International Journal of Naval Architecture and Ocean Engineering*, 14, 100481, 2022.08
- Kim, J. H., Park, J. Y., Kim, M. H., Estimation of Fracture Toughness of API 2W Gr.50 Steel in Ductile to Brittle Transition Behavior Using Master Curve Approach, *Journal of Marine Science and Engineering*, 10, 8, 1066, 2022.08
- Chung, D. H., Kim, D. C., Baek, S. W., Kim, M. H., Na, Y. S., Thermodynamics-based design strategy for optimizing strength and ductility of Cr-Ni-Mn-Fe medium-entropy alloys, *Journal of Alloys and Compounds*, 899, 2022. 04
- Park, J. Y., Kim, B. K., Nam, D. G., Kim, M. H., Effect of Nickel Contents on Fatigue Crack Growth Rate and Fracture Toughness for Nickel Alloy Steels, *Metals*, 12, 173, 2022. 01
- Kim, T. Y., Yoon, S. W., Kim, J. H., Kim, M. H., Fatigue and Fracture Behavior of Cryogenic Materials Applied to LNG Fuel Storage Tanks for Coastal Ships, *Metals*, 11, 1899, 2021. 11
- Im, Y. C., Kim, D. Y., Lim, S. W., Yoon, S. J., Choi, C. H., Kim, M. H., Fatigue Life Prediction for Carbon-SMC and Carbon-FRP by Considering Elastic Modulus Degradation, *Journal of Composite Science*, 5, 54, 2021. 02
- S. Song., P. Dong., Kim, M. H., Residual stresses in narrow-groove girth welds and applications for fitness-for-service assessment, *International Journal of Pressure Vessels and Piping*, 188, 104238, 2020.12
- Lee, J. H., Kim, M. H., Low-cycle fatigue evaluation for girth-welded pipes based on the structural strain method considering cyclic material behavior, *International Journal Naval Architecture and Ocean Engineering*, 12, 868-880, 2020.11
- Pei, X., Dong. P., Kim, M. H., A Simplified Structural Strain Method for Low-Cycle Fatigue Evaluation of Girth-Welded Pipe Components, *International Journal of Fatigue*, 139, 105732, 2020.10
- Park, J. H., Kim, S. H., Moon, H. S., Kim, M. H., Cho, D. W., Effect of process parameters on root pass welding and analysis of microstructure in V-groove Pulsed gas metal arc welding for mild steel, *The International Journal of Advanced Manufacturing Technology*, 2020.06
- Park, J. Y., Kim, M. H., Investigation of fatigue and fracture characteristics for low-temperature metals considering the effects of various alloying, *Welding in the world*, 1-12,2020.06
- Park, J. Y., Oh, D. J., Kim, M. H., Comparison of The Fatigue Performance of Ferrite-Pearlite and Ferrite-Bainite Dual Phase Steels, *Journal of Marine Science and Technology*,1-13, 2020.06
- Lee, J. H., Park, H. J., Kim, M. H., Kim, H. J., Suh, J. Y., Kang, N. H., Role of Hydrogen and Temperature in Hydrogen Embrittlement of Equimolar CoCrFeMnNi High-entropy Alloy, *Metals and Materials International*, 27, 1, 166-174, 2020.05

- Kim, D. Y., Kim, M. H., Fatigue Life Estimation for HFMI Treated Weldments Considering Weld Toe Magnification Factors, *Journal of Offshore Mechanics and Arctic Engineering*, 142, 6, 1-9, 2020.04
- Kim, S. H., Ha, J. R., Yoon, S. W., Kim, M. H., A study on mechanical properties after bonded repair of sandwich composite materials, *Modern Physics Letters B*, 34, 07n09, 1-5, 2020. 03
- Lee, J. S., Kim, M. H., Strain-based Failure Assessment Based on a Reference Strain Method for Welded Pipelines, *Journal of Offshore Mechanics and Arctic Engineering*, 142, 4, 1-7, 2020.02
- Park, J. H., Kim, S. H., Moon, H. S., Kim, M. H., Influence of Gravity on Molten Pool behavior and Analysis of Microstructure on Various Welding Positions in Pulsed Gas Metal Arc Welding, *Applied Science*, 9, 21, 1-12, 2019. 10
- Kim, B. E., Park, J. Y., Lee, J.S., Kim, M. H., Effects of the Welding process and consumables on the fracture behavior of 9 wt. % nickel steels, *Experimental Techniques*, 1-12, 2019. 09
- Park, J. Y., Kang, N. H., Kim, M. H., Effects of the welding processes and consumables on the fatigue and fracture performances for 3.5 wt.% nickel steels, *Welding in the world*, 1355-1367, 2019. 09
- Lee, D. J., Shin, S. B., Kim, M. H., Prediction of transitional behavior of out-of-plane welding distortion by solar radiation in upper deck of hull structure, *Journal of Marine Science and Technology*, 1-16, 2019. 05
- Lee, D. J., Kim, M. K., Walsh, J., Jang, H. K., Kim, H. I., Oh, E. Y., Nam, J. D., Kim, M. H., Surh, J., Experimental characterization of temperature dependent dynamic properties of glass fiber reinforced polyurethane foams, *Polymer Testing*, 74, 30-38, 2019. 04
- Kim, T. Y., Yoon, S. W., Cho, J. H., Kim, M. H., Vibration characteristics of laminated wound composite tubes applied to the intermediate shaft in ship propulsion system, *Modern Physics Letters B*, 33, 2019. 04
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- Oh, D. J., Kim, N. K., Song, S. W., Kim, Y. D., Kim, M. H., Investigation of fatigue performance of new membrane-type LNG CCS at cryogenic temperature, *Marine Structures*, 62, 2018. 09

- Park, J. H., Oh, D. J., Kim, M. H., Kim, K. H., Moon, H. S., Fatigue Strength of A LNGC Secondary Barrier made of Composite Material with Aramid Fibers, *Mechanics of Composite Materials*, 54(4), 2018. 09
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- Moon, D. H., Park, J. Y., Kim, M. H., Effects of the Crack Tip Constraint on the Fracture Assessment of an Al 5083-O Weldment for Low Temperature Applications, *MATERIALS*, 10 (7), 815, 2017. 07
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- Oh, D. J., Lee, J. M., Noh, B. J., Kim, W. S., Ryuichi, A., Toshiyuki, M., Kim, M. H., Investigation of Fatigue Performance of Low Temperature alloys for Liquefied Natural Gas Storage Tanks, *Proceedings of the Institution of Mechanical Engineers Part C-Journal of Mechanical Engineering Science*, 229(7), 1300-1314, 2015. 06
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- Dong, P., Pei, X., Xing, S., Kim, M. H., A Structural Strain Method for Low-cycle Fatigue Evaluation of Welded Components, *International Journal of Pressure Vessels and Piping*, 119, 39-51, 2014. 07
- Oh, D. J., Lee, J. M., Kim. M. H., Fatigue Strength Assessment of Invar alloy Weld Joints using the Notch Stress Approach, *Engineering Failure Analysis*, 42, 87-99, 2014. 07
- Kim, J. H., Kim, S. K., Kim, M. H., Lee, J. M., Numerical Model to Predict Deformation of Corrugated Austenitic Stainless Steel Sheet under Cryogenic Temperatures for Design of Liquefied Natural Gas Insulation System, *Materials and Design*, 57, 26-39, 2014. 05
- Kim, J. H., Park, J. S., Lee, K. H., Kim, J. H., Kim, M. H., Lee, J. M., Computational Analysis and Design Formula Development for the Design of Curved Plates for Ships and Offshore Structures, *Structural Engineering and Mechanics*, 49(6), 705-726, 2014. 03
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- Lee, C. S., Heo, H. S., Kim, Y. N., Kim, M. H., Kim, S. H., Lee, J. M., Investigation of Structural Responses of Breakwaters for Green Water based on Fluid-structure Interaction Analysis, *International Journal of Naval Architecture and Ocean Engineering*, 4(2), 83-95, 2012. 06
- Kim, J. H., Park, W. S., Chun, M. S., Kim, J. J., Bae, J. H., Kim, M. H., Lee, J. M., Effect of Pre-straining on Low-temperature Mechanical Behavior of AISI 304L, *Materials Science & Engineering A*, 543, 50-57, 2012. 05
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- Kim, S. K., Lee, C. S., Kim, M. H., Lee, J. M., Numerical Analysis of Hydrogen Transport using a Hydrogen-Enhanced Localized Plasticity Mechanism, "World Academy of Science, Engineering and Technology", 61(1), 398-401, 2012. 01
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- Shin, Y. T., Shin, H. S., Kim, H. J., Kang, S. W., Kim, M. H., The influence of Heat Input on Fracture toughness(CTOD) in Submerged Arc Offshore Steel Weldments, Proceeding of The Annual Spring Meeting The Society of Naval Architects of Korea 2004 Apr., Tongyeong, South Korea, 2004. 04
- Seo, J. K., Lee, J. M., Paik, J. K., Kang, S. W., Kim, M. H., Heo, H. Y., Jang, T. W., Development of an Expert System for the Fatigue-Property Assessment of Ship Structural Steel, Proceeding of 2003 Spring Conference of the Korean Welding and Joining Society, Busan, South Korea, 2003. 05

- **Representative National Research Projects (Last 10 years)**

- Development of intelligent inspection and integrated control systems for welded parts of sub-assembly in ship production with the accuracy of over 95%(Development of implementation

technology and intelligent manufacturing system for sub-assembled part of shipstructure), Ministry of Trade, Industry and Energy, 2023.04-2023.12

- Advanced engineer education program for smart yard, Korea Institute for Advancement of Technology, 2021.03 - present
- Development of cryogenic manganese SAW pipe and drawing steel pipe for shipbuilding and offshore platform, Ministry of Trade, Industry and Energy, 2017. 03 – 2021. 02
- Development of a highly accurate fracture toughness assessment method based on fracture mechanics, National Research Foundation of Korea, 2017. 06 – 2020. 02
- Reliability and strength assessment of core parts and material system, Ministry of Science and ICT, 2011. 09 – 2021. 02
- Running Cost 10% reduction in fishing boats designed for core technology development, Ministry of Trade, Industry and Energy, 2013. 06 – 2018. 05
- Establishment of fracture test and structure integrity assessment based on ECA, Ministry of Trade, Industry and Energy, 2015. 09 – 2016. 08
- A study on mechanical properties and fatigue performance of hull and rudder structure hybrid composite for sailing yacht keel for 20ft ~ 40 ft grade, Ministry of Trade, Industry and Energy, 2015. 01 – 2015. 05
- Development of fuel storage tank(Type C, 20m<sup>3</sup>) for LNG fueled ship and Sloshing Reduction Device of LNG Storage Tank, Ministry of Science and ICT, 2014. 11 – 2015. 10
- Development of fracture toughness assessment and ECA technology for welds in ship and offshore planet, Ministry of Science and ICT, 2014. 10 – 2017. 09
- Localization Development of 8"~46" Range Pipeline for Floating Offshore Oil & Gas Manufacturing Plant(FPSO/FSRU), Ministry of Trade, Industry and Energy, 2013. 09 – 2015. 08.
- Development of Safety Evaluation System for Large Welded Structures Based on Fracture Mechanics, Ministry of Science and ICT, 2010. 09. – 2015. 08.
- Development of full stochastic fatigue analysis program for ships and offshore structures with consideration of key parameters, Ministry of Science and ICT, 2011. 05. – 2014.04.

- **Representative Industrial Research Projects (Last 10 years)**

- Fatigue test for CFRP(Carbon fiber reinforced plastic) composite, Hyundai Motors Group, 2023. 09 – 2023. 12
- Measurement of brake pedal's deformation using digital image correlation method, Hyundai Motors Group, 2023. 09 – 2023. 12
- Fatigue performance evaluation for LNG CCS, DONGSUNG FINETEC, ltd., 2023. 03 – 2023. 12

- Fatigue performance evaluation for bonded RPUF and secondary barrier, DSME Co., Ltd., 2022. 11 – 2022. 12
- Characteristics and fatigue strength evaluation method of cryogenic steels, KRISO, 2022.11-2022.12
- Standardization of fatigue test procedure for secondary barrier insulation system, Ministry of Trade, Industry and Energy, 2022.10-2022.12
- A study on the expansion of the fracture toughness evaluation for cryogenic materials II, Samsung Heavy Industries Co., Ltd., 2022. 09. – 2022. 12
- Evaluation of fatigue performance for Idler shell, HEUNGKUK, 2022. 09 – 2023. 06
- Evaluation of fatigue performance for LNG CCS IV, DONGSUNG FINETEC, Ltd., 2022. 06 – 2023. 06
- A study on the expansion of the fracture toughness evaluation for cryogenic materials, Samsung Heavy Industries Co., Ltd., 2022. 04 – 2022. 06
- Fatigue life assessment for KC-2B insulation system, Hanguk Carbon co., 2022. 04 – 2022. 09
- Evaluation of fatigue performance for LNG CCS III, DONGSUNG FINETEC, ltd., 2021. 10 – 2022. 03
- The development of S-N curve for die material, Hyundai Motors Group, 2021. 06 – 2022. 06
- Evaluation of Fatigue Characteristics on High Mn butt welded joint, POSCO, 2021. 04 – 2021. 07
- J-Integral analysis reflecting Residual Stress after Pipeline Cutting, Samsung Heavy Industries Co., Ltd., 2021. 03 – 2021. 12
- Evaluation of fatigue crack propagation characteristics on high tensile steel and welded joints, DSME Co., Ltd., 2020. 11 – 2021. 08
- Fatigue performance test of membrane type for LNG CCS primary barrier, TMC. Co., LTD, 2020. 04 – 2020. 06
- Development of small and medium LNG fuel storage module for coastal ships(Mechanical Properties Test of Materials for LNG Fuel Storage Tank), Research Institute of Medium and Small Shipbuilding., 2020. 04 – 2020. 11
- Evaluation of Fatigue Characteristics of Welded T-Joints Considering Low Cyclic Fatigue under Compressed Load, DSME Co., Ltd., 2020. 03 – 2021. 07
- Fatigue performance test of KMS secondary barrier, Hyundai Heavy Industries Co., Ltd., 2020. 03 – 2020. 12
- Establishing multiple-cracks assessment techniques, Samsung Heavy Industries Co., Ltd., 2020. 03 – 2020. 12
- Evaluation of Fatigue Crack Propagation Characteristics on 9% Ni Steel Welded Joints, Korea Ship Ocean Engineering Co., ltd., 2019.12 – 2020. 06

- Fatigue test of MLNGC CCS secondary barrier, Korea Ship Ocean Engineering Co., ltd., 2019. 11 – 2021. 04
- Simplified numerical evaluation of welded deformation in rutherford trunk structure, Kopicobest, ltd., 2019. 12 – 2020. 01
- Tensile test evaluation of SUS304L material considering plastic deformation and rolling direction, DSME Co., Ltd., 2019. 11 – 2019. 12
- Development of small and medium LNG fuel storage module for coastal ships, Research Institute of Medium and Small Shipbuilding, 2019, 11 – 2019, 12
- Evaluation of spray-type insulation system for IMO type B tank with double structure, Gas Pack, 2019. 09 – 2019-11
- Assessment of fatigue strength considering fatigue improvement method, Hyundai Rotem, 2019. 08 – 2019. 11
- Prediction of fatigue life and fatigue test for carbon SMC composite, Hyundai Motor Group, 2019. 07 – 2020. 09
- Fatigue strength assessment for Mark-Flex Aramid FSB, Hankuk Carbon Co., 2019. 03- 2019. 08.
- Fatigue test of the LNG primary barrier, Dong Sung FINETEC, 2019. 03- 2019. 08.
- Assessment of fatigue and fracture performance of 5% nickel steel for ethane carrier application, POSCO, 2018. 11 – 2020. 12.
- Assessment of fatigue strength of EH51 steel for very large container ship application, Hyundai Heavy Industry, 2018. 05- 2019. 05
- Development of automatic ECA Program for Marine Tubular Welded Joint, Hyundai Heavy Industry, 2017. 12 – 2019. 03.
- Fatigue Crack Propagation Characteristics Assessment of Brittle Crack Arrest Steel, Daewoo Shipbuilding & Marine Engineering, 2017. 09 – 2018. 12.
- Evaluation of Fatigue Performance for LNG CCS, Dongsung FINETEC, 2017. 09 – 2017. 11.
- KC-1 Corner Membrane with Wrinkle Fatigue Test under Cryogenic, KC LNG Tech, 2017. 09 – 2017. 09.
- KC-1 Corner Membrane with Minimum Thickness Point Fatigue Test under Cryogenic, TMC, 2017. 08 – 2017. 09.
- Development of a highly accurate fracture toughness assessment method based on fracture mechanics, National Research Foundation of Korea, 2017. 06 – 2020. 02.
- Evaluation of Fatigue Performance for HMX-III LNG Insulation System Secondary Barrier, Hyundai Heavy Industry, 2017. 05 – 2017. 10.
- Evaluation of Fatigue Strength of Dissimilar Weldment for Excavator Ring Support Part, Volvo Construction Equipment, 2017. 04 – 2017. 09.

- Assessment of Fatigue and Fracture Performances of 3.5% Nickel Steel for Ethane Carrier Applications, POSCO, 2016. 12 – 2017. 11.
- Evaluation of Fatigue Strength of SOLIDUS Insulation System, Daewoo Shipbuilding & Marine Engineering, 2016. 11 – 2017. 07.
- Longitudinal Tensile Fatigue Test of Fillet Weldment for Fatigue DB Construction, Doosan Infracore, 2016. 10 – 2016. 12.
- Evaluation of Fatigue and Tensile Properties for Carbon Fiber Rope, Hyundai Heavy Industry, 2016. 10 – 2016. 12.
- Assessment of Fatigue Strength for Dissimilar Weldment, Volvo Construction Equipment, 2016. 10 – 2017. 03.
- Assessment of Fatigue Performance for Casting and Forging Steels, Doosan Heavy Industry, 2016. 10 – 2017. 06.
- Development of High Performance Pipe and Field Connection Structure Technology in Arctic and Cold Area, Steelflower, 2016. 09 – 2017. 02.
- Evaluation of CTOD / Fatigue Crack Propagation Characteristics and Application of Structural Design for 9% Nickel Steel, POSCO, 2016. 07 – 2016. 12.
- Evaluation of the primary barrier fatigue performance of LNG carriers, Dongsung FINETEC, 2016. 05 – 2016. 11.
- Assessment of Fatigue Performance of LNG Insulation System for Aramid FSB Application, Hankuk Carbon Co., 2016. 05 – 2016. 11.
- Structural Integrity Assessment (SIA) for Welded Joints in Ship and Offshore Structures, Class NK, 2016. 01 – 2017. 12.
- Fatigue Strength Assessment for Dissimilar Welded Joint, Volvo Construction Equipment, 2015. 09 – 2015. 12.
- Fatigue Strength Assessment of the Secondary barrier for LNG Insulation System, Hankuk Carbon Co., 2015. 09 – 2016. 04.
- Fatigue Strength Assessment of the Cast Steel in the High Cycle and Low Cycle Regions, Daewoo Shipbuilding & Marine Engineering, 2015. 05 – 2016. 02.
- Analysis of Material Characteristics and Structural Analysis of Gas Valve Unit(GVU) Housin, Steelflower, 2015. 01 – 2015. 04.
- Evaluation of Fatigue Crack Propagation Characteristics for Excavator Boom Weldment, Hyundai Heavy Industry, 2014. 12 – 2015. 07.
- Development of Fuel Storage Tank (Type C, 20m<sup>3</sup>) for LNG Fueled Ship and Sloshing Reduction Device of LNG Storage Tank, the Innopolis Foundation of Korea, 2014. 11 – 2016. 11.
- Assessment of Fatigue Strength for Weldment with Special Installation Line of Offshore Wind Power Generator, Samsung Heavy Industry, 2014. 10 – 2015. 07.

- Evaluation of Fatigue Strength of Aircraft Rivet Joint (II), Soosung Airframe Ind., 2014. 09 – 2014. 09.
- The Fatigue and Fracture Performances of 3.5% Nickel Steel, Hyundai Heavy Industry, 2014. 09 – 2016. 03.
- Evaluation of Fatigue Strength of Aircraft Rivet Joint (I), Korea Aerospace Industry, 2014. 08 – 2014. 09.
- A Study on Fatigue and Fracture Analysis of Cast Steel, Daewoo Shipbuilding & Marine Engineering, 2014. 06 – 2015. 05.
- Assessment of Fracture Toughness for High Strength Steel Weldment (II), 2014. 04 – 2014. 04.
- Evaluation of Fatigue Crack Propagation for Dual Phase Steel, Samsung Heavy Industry, 2014. 04 – 2015. 08.
- Development of Advanced Concept Fuel-Storage Tank of LNG Fueled Ship, Samsung Heavy Industry, 2014. 04 – 2015. 05.
- Assessment of Fracture Toughness for High Strength Steel Weldment (I), POSCO PLANTEC, 2014. 02 – 2014. 04.
- JIP for Assessment of Low Temperature Strength of UACJ aluminum, Sumitomo Corporation, 2013. 12 – 2014. 04.
- Structural Integrity Assessment of Subsea Pipelines, Class NK, 2013. 11 – 2015. 10.
- A Study on Fracture Toughness and Fatigue Life Prediction of Sailing Yacht Keel for 20ft ~ 40ft Grade, Research Institute of Medium and Small Shipbuilding, 2013. 11 – 2014. 03.
- Development of Engineering Critical Assessment and Strength Evaluation Method for Riser Weldment and Joint Part, Daewoo Shipbuilding & Marine Engineering, 2013. 06 – 2014. 02.
- Fatigue Strength Assessment of Anti Fatigue Damage Steel, Samsung Heavy Industries, 2013. 05 – 2014. 03.
- Assessment of 7% Nickel Steel Cargo Tank in LNGC and FLNG, Hyundai Heavy Industry, 2012. 07 – 2014. 06.
- Evaluation of Fatigue Strength for Gear Heat Treatment Material, Samsung Heavy Industries, 2012. 07 – 2013. 07.
- Fatigue Performance Assessment for Adhesive Structure Connection, Samsung Heavy Industries, 2012. 03 – 2013. 02.
- JDP for Assessment of 7% Nickel steel for Type-B LNG tanks, Class NK, 2011. 07 – 2013. 06.
- Evaluation of Fatigue Strength for HC10 LNG Heat Dissipation System, Hyundai Heavy Industry, 2011. 02 – 2013. 06

- **The following list will be provided upon request.**

- **International Journals (106 papers)**
- **International proceedings (97 papers)**
- **Domestic journals (67 papers)**
- **Domestic proceedings (210 papers)**