

Curriculum Vitae of Hong Gun Sung

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Personal Information

Name Hong Gun SUNG
Birth Date June 7, 1970
Birth Place Geochang-gun, Gyoungsamnam-do, Rep. Korea
Home Address #104-2105, 33, Jijokbuk-ro (NounKumeGreen Apt. Block #1), Yuseong-gu, Daejeon, Rep. Korea
Current Affiliation Offshore Plant Research Department, Korea Research Institute of Ships & Ocean Engineering (KRISO), Rep. Korea



Education

- 03/1995 – 02/1999** Ph.D. degree, Dept. of Naval Architecture & Ocean Engineering, Seoul National University, Korea (Supervisor: Prof. Hang Shoon Choi)
Title of Ph.D. Thesis:
A Numerical Analysis of Nonlinear Diffraction Problem in Three Dimensions by Using Higher-Order Boundary Element Method
Major Research Topics:
Water Waves, Floating Body Dynamics, Offshore Structures, Control Dynamics, Applied Mathematics, Continuum Mechanics, Numerical Analysis, Boundary Element Method
- 03/1993 – 02/1995** MS degree, Dept. of Naval Architecture & Ocean Engineering, Seoul National University, Korea
Title of Master Thesis: Motion Response of a 2-D Oil Boom Model
- 03/1989 – 02/1993** BS degree, Dept. of Naval Architecture & Ocean Engineering, Seoul National University, Korea

Employment

- 03/2000 – Present** Korea Research Institute Ships and Ocean engineering (KRISO), Daejeon, Korea
Principal researcher in Offshore Plant Research Department
Director of Research Department (2014~Present), ATEC (Advanced Technology & Engineering Center)
- 02/2004 – 02/2005** Visiting Scientist, the Department of Ocean Engineering in the University of Rhode Islands, USA
Title of Research Topic: Numerical Modeling of Nonlinear Free Surface Flow around Fast Advancing Body by Using Higher-Order Boundary Element Method
- 02/1999 – 02/2000** Special Researcher, Research Institute of Engineering Science, Seoul National University, Korea

Research Experience and Managerial Mission

- Theory of water waves (esp. nonlinear waves)
- Floating body dynamics
- Mooring design and analysis
- Hydrodynamic analysis of ships and offshore structures
- Wave Green function method (i.e. Panel method)
- Boundary Element Method (BEM) for offshore structure motion
- N-S solver development by using Spectral Element Method
- Inverse method for beams and wave-making problems through collaboration

- Model testing of offshore structure and special type vessels in offshore basin
- Design of offshore structures: LNG FSRU, Floating LNG Bunkering Terminal (FLBT), innovative novel concept design, substructure for offshore solar power plant, etc.
- Project management of a number of national projects: Transportation and Marine Operation, LNG FSRU, FLBT, Offshore Installation Technology, etc.
- Establishment of World-class Offshore Test Basin (DOEB; Busan)
- Establishment of Regional Center Abroad (KRISO Houston-Lab.; Houston, TX)
- Establishment of Offshore Engineering Center (ATEC; Busan, Rep. Korea)
- Establishment of CFD Research Team under the Department
- Establishment of Structure Analysis Research Team under the Department

Academic Activities

- 2006 – Present** **Member, ISOPE**
Participating in ISOPE annually since 1995
TPC Member (2008~Present), TC Member (2009~Present)
Contributing to ISOPE in IOTC (Offshore Installation and Marine Operation)
Initiated LNG Bunkering Technology Focus Session (2015-)
Inviting dozens of papers for annual ISOPE Conferences with high influences (2008~Present)
Contributing as **LOC Secretariat of ISOPE PACOMS 2018, Jeju Symposium**
- 1995 – Present** Member, the Korean Society of Ocean Engineers (KSOE)
Board Member (2012~Present)
Director of General Affairs (2014~2015)
Auditor (2016~2017)
Director of Industry Technology (2018~2019)
- 1995 – Present** Member, the Society of Naval Architecture of Korea (SNAK)
- 2000 – Present** Member, the Korean Society of Marine Environment & Energy (KOSMEE)
- 2012 – Present** Member, the Korean Society of Coastal & Ocean Engineers (KSCOE)
- 2000 – Present** Contributing to Academic Societies as Journal Article Reviewer for IJOPE, Ocean Engineering, SNAK, KSOE, KSCOE, etc.
- 2007 – Present** Contributing to Academic Societies and Industry Sectors by participating in a number of Joint Industry Projects and Joint Development Projects: ① WILS IP, ② LM-FPSO JIP, ③ SNAME OC-8 Wind Load JIP, ④ TESK CFD JIP, ⑤ TAMU OSSCL JIP, ⑥ Unified Equipment JIP

Awards

- Academic Award by the Ministry of Lands and Maritime Affairs (2008)
- Academic Award by the Prime Minister (2017)

- Special Meritorious Award for Engineering Innovation by Hart Energy in consideration of LM-FPSO(Low Motion FPSO) Development with a Houston based engineering company, INTECSEA (2017)
- Academic Award by the Korean Society of Ocean Engineers (KSOE) (2017)

Publications (Selective)

Journal Articles

- BW Kim, SY Hong and HG Sung, Comparison of drift force calculation methods in time domain analysis of moored bodies, *OCEAN ENGINEERING*, Vol. 126, No. 1, pp. 81~91, 2016.
- HG Sung, HS Baek, S Hong and JS Choi, Numerical study of vortex-induced vibration of pivoted cylinders, *Ocean Engineering*, Vol. 93, No. 1, pp. 98~106, 2015.
- BW Kim, HG Sung, JH Kim and SY Hong, Comparison of linear spring and nonlinear FEM methods in dynamic coupled analysis of floating structure and mooring system, *Journal of Fluid and Structures*, Vol. 42, No. C, pp. 205~227, 2013.
- TS Jang and HG Sung 2012, A new method for the non-linear analysis of an infinite beam on a non-linear elastic foundation: a general approach to a variable beam cross-section, *International Journal of Non-Linear Mechanics*, pp. 132~139
- BW Nam, SY Hong and HG Sung 2012, Numerical Simulation of Diffracted Wave by Vertical Cylinder Using VOF Method, *International Journal of Offshore and Polar Engineering*, pp. 7~12.
- T.S Jang, H.G. Sung, S.R. Han, S.H. Kwon, 2008, Inverse Determination of the Loading Source of the Infinite Beam on Elastic Foundation, *Journal of Mechanical Science and Technology* , Vol. 22, No. 8, pp. 2350~2356.
- H.G. Sung & S.T. Grilli, 2008, BEM Computations of 3D Fully Nonlinear Free Surface Flows Caused by Advancing Surface Disturbances, *International Journal of Offshore and Polar Engineering*, Vol. 18. No. 3, pp. 292~301.
- HG Sung, SY Hong and HS Choi 2000, "Evaluation of non-linear wave forces on a fixed body by the higher-order boundary element method", *Journal of Mechanical Engineering Science (Proceedings of the Institution of Mechanical Engineers Part C)*, Vol. 214, pp. 825~839.

International Conference Proceedings (Selective)

- HG Sung, HD Song, JP Hong, SC Hwang, TH Jung, A Mansour, C Wu, A Numerical Study for Low Motion FPSO with Solid Ballast Tank, *PACOMS 2016*, Gold Coast, Australia, Oct. 4~8, 2016.
- JP Hong, SK Cho, YH Kim, HD Song, DH Jung, SC Hwang and HG Sung, Numerical Study of Current Forces Acting on Floating Bodies in Side-by-Side Configuration, *Proc. of ISOPE 2016*.
- BW Nam, HG Sung, SK Cho, SY Hong and NW Kim, "Nonlinear Wave-induced Motion Response of a Heavy Transport Vessel during Dry Transportation," appeared in the *Proc. of the 23th International Offshore and Polar Engineering*, Alaska, USA, July, 2013.
- YH Kim, HG Sung, SK Cho and HS Choi, "An Experimental Study on the 2-DoF Motion of Side-by-Side Connected 2D Rectangular Cylinders with Sloshing Effect," appeared in the *Proc. of the 23th International Offshore and Polar Engineering*, Alaska, USA, July, 2013.
- SK Cho, HG Sung, SY Hong, SW Hong, YS Kim, MG Ha, YD Choi, BS You, and RD Jang, "Experimental Study on the Side-by-Side Offloading Operation of FSRU and LNGC," appeared in the *Proc. of the 22th International Offshore and Polar Engineering*, Rhodes, Greece, June, 2012.

* Many more journal articles and international conference papers