

Curriculum Vitae

Kurniawan Teguh Waskito, Ph.D.

Department of Mechanical Engineering | Tropical Renewable Energy Center
Faculty of Engineering, Universitas Indonesia | UI Campus, Depok 16426, Indonesia
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PERSONAL DETAILS

	Nationality	Indonesia
	Research Interests	Marine Hydrodynamics, Ship Performance in Actual Seas, Ocean Renewable Energy, Hydrogen Energy, Wind Energy, Floating Solar PV
	Profile Pages	Scopus Profile ORCID: 0000-0002-9719-9559 Google Scholar Dept. of Mechanical Engineering – Faculty Page

EDUCATION

2009–2013	Bachelor of Engineering, Naval Architecture Universitas Indonesia, Indonesia Undergraduate thesis: <i>Experimental Study and CFD Prediction of Total Hull Resistance of an Asymmetric Pentamaran Model with Separation and Staggered Arrangement Variations of the Inner Side Hulls</i>
2012–2014	Master of Engineering (Fast-track), Mechanical Engineering Universitas Indonesia, Indonesia Master's thesis: <i>Drag Reduction of Crude Oil Flow with CMC Additive and Bacterial Cellulose Fibre Suspension in Circular and Spiral Pipes</i>
2017–2020	Doctor of Engineering, Naval Architecture & Ocean Engineering Osaka University, Japan Dissertation: <i>Prediction of Vertical Bending Moment Using Measured and Computed Wave-Induced Pressure Distribution on Ship Hull</i>

PROFESSIONAL EXPERIENCE

2016–Present	Lecturer Department of Mechanical Engineering, Universitas Indonesia
2016–Present	Industrial Engineering Expert and Consultant P2M, Department of Mechanical Engineering, Universitas Indonesia <i>Turbomachinery, Hydraulics & Pneumatics, Reliability Engineering, Machine Health Diagnosis & Prognosis</i>
2021–2022	Postdoctoral Fellowship – Associate Professorship Faculty of Maritime Sciences, Kobe University, Japan
2020–2021	Postdoctoral Fellowship, Fluids Engineering & Ship Performance Evaluation National Maritime Research Institute (NMRI), Japan
2014–2016	Field Operation Professional – Coil Tubing Halliburton Oil Field Services, Indonesia

Oil and gas well pressure pumping (workover & well intervention); operation and maintenance of coil tubing, pumps, wellheads, and N2 equipment

INDUSTRIAL PROJECT EXPERIENCE

2025-2026	Piping and Mechanical Engineer Feasibility Study for Development and Operation of a Terminal Automation System – Fuel & LPG Product Distribution, PT. Pertamina Patra Niaga
July 2025	Industrial Trainer Maintenance Management, PT. Steel Pipe Industry of Indonesia
June 2025	Industrial Trainer Pump Operation, Maintenance, and Troubleshooting, PT. Coca Cola Indonesia
Feb-Apr 2025	Technical Expert Survey and Assessment of the Bank Indonesia Representative Office Building (KPWDN) – MEP Systems
2024-2025	Technical Expert Expert Technical Documentation, PT. United Tractor
2024-2025	Technical Expert Deck Cargo Optimisation for Crew Boats and Supply Vessels, PT Pertamina Hulu Energi OSES
2024-2026	Technical Expert Competency Assessment Development, Power Generation, PT. PLN
December 2024	Industrial Trainer Pump Operation, Maintenance, and Troubleshooting, PT. Kaltim Parna Industri
2024-2025	Project Manager Design & Fabrication of Oil Spill Response Equipment, PT. Pertamina Hulu Energi Offshore South East Sumatra
September 2023	Industrial Trainer Maintenance Development, PT. Veolia Services Indonesia
July 2023	Industrial Trainer Maintenance Management, PT. Veolia Services Indonesia
June 2023	Industrial Trainer Reliability Engineering, PT. Prima Transportasi Servis Indonesia
June 2023	Industrial Trainer Maintenance Development & Planning, PT. Indonesia Power
March 2023	Industrial Trainer Planning, Scheduling, and Maintenance of Hydraulic System Units, PT. Epiroc Southern Asia
Oct-Dec 2017	Technical Expert Process Engineering Competency Mapping, PT. Medco E&P Indonesia
Jan-Oct 2017	Technical Expert Turbomachinery Training Module Development, PT. Medco E&P Indonesia
Apr-Aug 2016	Industrial Trainer In-house Turbomachinery Training, PT. Pertamina EP Subang
Aug 2014-Feb 2016	Field Operations Professional Hydraulic and Pneumatic Systems for Oil and Gas Fields, High-Pressure Plunger Pumps, Preventive and Condition-Based Maintenance

RESEARCH GRANTS	
2026-2028	Co-Investigator Sustainable Technology for Electroconversion of Palm-Oil Glycerol into Lactic Acid with Hydrogen Co-Production Using Nickel Alloy Catalysts <i>Palm Oil Research Grant (GRS), BPDPKS</i>
2025-2026	Principal Investigator Development of Platinum- and Ruthenium-Catalysed Electrolysers for Green Hydrogen Production in Marine Energy Applications <i>Innovation Grant FTUI, Universitas Indonesia</i>
2025-2026	Co-Investigator Real-time Multi-Objective Optimisation of Oscillating Water Column (OWC) Performance Using Surrogate Models <i>RIIM Competitive Grant, BRIN</i>
2025-2026	Principal Investigator Floater Design Optimisation Using Hybrid Design of Experiments for a Multi-Cylinder Floating Point Absorber Wave Energy Converter: A Pelabuhanratu Case Study <i>PUTI Q1, Universitas Indonesia</i>
2024-2025	Principal Investigator CFD Hydrodynamic Analysis of Floater Geometry for a Double-Cylinder Floating Point Absorber Wave Energy Converter (WEC) <i>Seed Funding (Lector), Faculty of Engineering, Universitas Indonesia</i>
2024-2025	Principal Investigator Nearshore Power Generation Technology (Floating PV, Wind, etc.) <i>Prime Engineering Seed Fund Batch I 2024</i>
2024-2025	Co-Investigator Estimation of Hydraulic Power Take-Off Parameters for a Floating Absorber Wave Energy Converter Using a Genetic Algorithm <i>PUTI Q2, Universitas Indonesia</i>
2024-2025	Principal Investigator Seakeeping Performance Prediction of Passenger Ferries in Intact and Damaged Conditions Based on Probabilistic Damage Stability Using CFD and Potential Flow Theory <i>PUTI Q2, Universitas Indonesia</i>
2024-2025	Principal Investigator Design of a Hydraulic Power Take-Off (HPTO) System with a Double-Cylinder Floating Point Absorber for Coastal Wave Energy Converters <i>PUTI Q1, Universitas Indonesia</i>
2022-2025	Co-Investigator Electronic Monitoring System for Capture Fisheries (Fish-monitoring) <i>RISPRO Invitation, LPDP</i>
2022-2023	Co-Investigator Innovative Power Take-Off (PTO) Design Based on Hydraulic Cylinders and Multi-Absorber Arrays for Coastal Wave Energy Converters <i>PUTI Q2, Universitas Indonesia</i>
2022-2023	Co-Investigator Renewable Power Plant Concept for Wave Energy Conversion: Hydraulic Power Take-Off (PTO) System with Multiple Absorbers <i>PDUPT, Ministry of Education, Culture, Research and Technology</i>

BOOK

Yanuar, Gunawan, **Kurniawan T. Waskito**, Ibadurrahman, Fajri A. Rayhan. *Multi-hull Ship Resistance*. DTM Press, 2022. ISBN: 978-602-98412-9-9

INTELLECTUAL PROPERTY

Pushing the Utilization of Ocean Space on the Blue Energy System and Green Ship Technology

Creator: Kurniawan T. Waskito

Type: Video recording (recorded video work)

Registration No.: 000641773

JOURNAL ARTICLES

- [1] Arrosyid W.A., Sari W.R., Waskito K.T., Yanuar. Evaluation and Optimization of Wave Energy Converters: A Systematic Perspective on Methods and Design Optimization Research Trend. *Engineering Journal*, 30(3), pp. 1-27 (2026). [Link](#)
- [2] Waskito K.T., Tarigan L.G., Yanuar et al. Resistance and Propulsion Study of a 17,500-DWT Oil Tanker Using CFD and Slender-Ship Theory: Effects of Energy-Saving Device Fins. *J. Marine. Sci. Appl.* (2026). [Link](#)
- [3] Liu C., Jiang X., Li H., Sun S., Ren H., Riadi A., Waskito K.T. Experimental and numerical investigation of floating offshore substation dynamic responses with mooring line failures. *Ocean Engineering*, Vol. 348 (2026). [Link](#)
- [4] Arrosyid W.A., Waskito K.T., Geraldi A. et al. Hydrodynamic analysis of multi-cylinder floating-point-absorber wave energy converter. *J. Ocean Eng. Mar. Energy* (2025). [Link](#)
- [5] Geraldi A., Waskito K.T., Arrosyid W.A., Sari S.P., Yanuar. Estimation of Hydraulic Power Take-Off Parameters in a Floating Absorber Type Wave Energy Converter Using the Genetic Algorithm Method. *Eng. J.*, 29(7), pp. 1-15 (2025). [Link](#)
- [6] Arrosyid W.A., Sari W.R., Waskito K.T., Yanuar, Utama I.K.A.P., Soesanto Q.M.B., Bramantya A., Nugroho B. Recent advancements in wave energy converter technologies: A comprehensive review on design and performance optimization. *Ocean Engineering* 340(2) (2025) 122328. [Link](#)
- [7] Abimanyu R.F.S., Waskito K.T., Sari W.R., Ogata S. Impact of Reynolds Number on Flow Behavior in Spiral Pipe Profiles: A Review. *J. Adv. Res. Fluid Mech. Thermal Sci.*, 129(2), pp. 216-243 (2025). [Link](#)
- [8] Sari W.R., Gunawan G., Waskito K.T. et al. Integrating Marine Renewable Energy with Green Hydrogen Production from Seawater: Feasibility and Future Prospects for Sustainable Energy Development in Indonesia. *J. Marine. Sci. Appl.* (2025). [Link](#)
- [9] Arrosyid W.A., Waskito K.T., Yanuar, Nasruddin, Sholahudin, Geraldi A., Zhao Y. Hydrodynamic performance and multi-objective optimization of multi-cylinder floating point absorber wave energy converter. *Ocean Engineering* 317 (2025) 120040. [Link](#)
- [10] Waskito K.T., Siahaan J.A.C., Chuzain M.A.N., Yanuar, Pal S. Design Optimization of a Point Absorber and Hydraulic Power Take-Off Unit for Wave Energy Converter. *International Journal of Technology*, 15(5), pp. 1524-1538 (2024). [Link](#)
- [11] Waskito K.T., Geraldi A., Ichi A.C., Yanuar, Rahardjo G.P., Al Ghifari I. Design of hydraulic power take-off systems unit parameters for multi-point absorbers wave energy converter. *Energy Reports*, Vol. 11 (2024), pp. 115-127. [Link](#)
- [12] Waskito K.T., Yudho R.H., Yanuar Y., Rahardjo G.P. Evaluating Wave Potential and Assessing the Economic Viability of Wave Energy Converters in the South Java Seas. *Kapal*, 20(3), pp. 391-400 (2023). [Link](#)
- [13] Waskito K.T., Sasa K., Chen C., Kitagawa Y., Lee S.-W. Comparative study of realistic ship motion simulation for optimal ship routing of a bulk carrier in rough seas. *Ocean Engineering*, 260 (2022) 111731. [Link](#)
- [14] Lee S.-W., Sasa K., Chen C., Waskito K.T., Cho I.-S. Novel safety evaluation technique for ships in offshore anchorage under rough seas conditions for optimal ship routing. *Ocean Engineering*, 253 (2022) 111323. [Link](#)
- [15] Waskito K.T., Yanuar. On the High-Performance Hydrodynamics Design of a Trimaran Fishing Vessel. *J. Adv. Res. Fluid Mech. Thermal Sci.*, 83(1), pp. 17-33 (2021). [Link](#)
- [16] Waskito K.T., Kashiwagi M., Iwashita H., Hinatsu M. Prediction of nonlinear vertical bending moment using measured pressure distribution on ship hull. *Applied Ocean Research*, Vol. 101 (2020) 102261. [Link](#)

- [17] Gunawan, Yanuar, Waskito K.T. Determination the optimum location for microbubble drag reduction method in self-propelled barge model: An experimental approach. *Energy Reports*, 6 Suppl. 2 (2020), pp. 774–783. [Link](#)
- [18] Yanuar, Waskito K.T., Gunawan, Candra B.D., Perdana A.Y. Micro-bubble drag reduction by multi discrete hole plate on self-propelled barge ship model. *J. Adv. Res. Fluid Mech. Thermal Sci.*, 53(1), pp. 111–121 (2019). [Link](#)
- [19] Yanuar, Waskito K.T., Pratama S.Y., Candra B.D., Rahmat B.A. Comparison of microbubble and air layer injection with porous media for drag reduction on a self-propelled barge ship model. *J. Marine. Sci. Appl.* 17, pp. 165–172 (2018). [Link](#)
- [20] Yanuar, Ibadurrahman, Waskito K.T., Karim S., Ichsan M. Interference resistance of pentamaran ship model with asymmetric outrigger configurations. *J. Marine. Sci. Appl.* 16, pp. 42–47 (2017). [Link](#)
- [21] Yanuar, Waskito K.T., Mau S., Wulandari W., Sari S.P. Helical twisted effect of spiral pipe in generating swirl flow for coal slurries conveyance. *Jurnal Teknologi*, 79(7-3) (2017). [Link](#)
- [22] Yanuar, Waskito K.T., Gunawan, Budiarto. Drag reduction and velocity profiles distribution of crude oil flow in spiral pipes. *International Review of Mechanical Engineering (IREME)*, 9(1), pp. 1–10 (2015). [Link](#)
- [23] Yanuar, Gunawan, Waskito K.T., Jamaluddin A. Experimental study resistances of asymmetrical pentamaran model with separation and staggered hull variation of inner side-hulls. *Int. Journal of Fluid Mechanics Research*, 42(1), pp. 82–94 (2015). [Link](#)

CONFERENCE PROCEEDINGS

- [1] Gerald A., Waskito K.T., Sari S.P., Yanuar. Performance Evaluation of a Wave Energy Converter Equipped with a Pneumatic-Driven Hydraulic Power Take-Off System. *Journal of Physics: Conference Series*, IOP Publishing, Vol. 3186, 012032 (2026). [Link](#)
- [2] Gu N., Zhou X., Ren H., Waskito K.T. Study on wave loads of large multi-body floating offshore platform by model test. *IET Conference Proceedings*, Vol. 2025, 46, pp. 245–250 (2026). [Link](#)
- [3] Waskito K.T., Yanuar. Development of wave-induced loads program for global ship hull strength. *AIP Conf. Proc.* 2749, 020005 (2023). [Link](#)
- [4] Kitagawa Y., Tsukada Y., Waskito K.T. An experimental study on effects of propeller slipstream to hydrodynamic pressure on astern hull surface in waves (in Japanese). *JASNAOE Annual Autumn Meeting, Yokohama, Japan, 2021*.
- [5] Kashiwagi M., Iwashita H., Waskito K.T., Hinatsu M. Prediction of wave loads with measured unsteady pressure distribution on ship hull surface. *35th International Workshop on Water Waves and Floating Bodies, Seoul, Korea, 2020*. [Link](#)
- [6] Waskito K.T., Kashiwagi M., Iwashita H., Hinatsu M. Prediction of nonlinear wave loads using measured pressure distribution on ship hull. *International Symposium on Novel Computational and Experimental Methods for Complicated Fluid-Structure Interactions, Fukuoka, Japan, 2020*.
- [7] Waskito K.T., Kashiwagi M. Improvement of wave loads estimation from spatial pressure distribution on ship hull. *ASME OMAE2019, Glasgow, UK, 2019*. [Link](#)
- [8] Yanuar, Waskito K.T. Experimental Study of Total Hull Resistance of Pentamaran Ship Model with Varying Configuration of Outer Side Hull. *Procedia Engineering*, 10th MARTEC 2016, Dhaka, Bangladesh, 2017. [Link](#)

AWARDS & SCHOLARSHIPS

- Outreach scholarship for the engineering specialist forum at OMAE 2019, Glasgow, UK
- Doctoral scholarship from the Japan International Cooperation Agency (JICA) – Innovative Asia, Osaka University, Japan. October 2017 – September 2020
- Best Presentation Award, 9th International Meeting on Advances in Thermofluids (IMAT2017), Johor, Malaysia
- Master's scholarship from the Indonesian Directorate General of Higher Education (DITJEN-DIKTI), fast-track programme, Universitas Indonesia. September 2012 – August 2014
- Outstanding Student, Naval Architecture Academic Award, 2011, Faculty of Engineering, Universitas Indonesia
- Finalist, National Student Scientific Week (PIMNAS) XXIV, PKM-GT, 2011, DITJEN-DIKTI, UNHAS, Makassar, Indonesia

Depok, 29 April 2026

Kurniawan Teguh Waskito, Ph.D.