

# CURRICULUM VITAE

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**Year of birth:** 1958

**Nationality:** Republic of Korea(ROK, South Korea)

**Position:** Research Chair Professor(Professor *emeritus*)

**Affiliation:** Center for Offshore wind & Green hydrogen Ammonia Research(COGAR, [www.kmou-cogar.kr](http://www.kmou-cogar.kr)), Korea Maritime & Ocean University (<https://www.kmou.ac.kr/english/main.do>, KMOU)

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## Education for degrees:

1976 - 1980 Department of Marine Engineering, Bachelor of Engineering, KMOU

1980 - 1982 Department of Marine Engineering, Master of Engineering, KMOU

1986 - 1989 Department of Mechanical Engineering, Ph.D. Program(Monbusho scholarship), The University of Tokyo

1992 Was awarded Ph.D. 23<sup>rd</sup> January, 1992

## Affiliation works:

1980 - 1985 Marine engineer(3<sup>rd</sup>, 2<sup>nd</sup>, 1<sup>st</sup>), on board training ship HANBADA, KMOU

1983 - 1999 Assistant professor(department of marine engineering), Associate professor (department of mechanical engineering), KMOU

2000 - 2023 Full professor at division of mechanical engineering, KMOU

2023 - present Professor *emeritus*, KMOU

2024 - present Research Chair Professor, KMOU

## Academic and society experiences:

2025 - present Member of Kyushu University Offshore Wind Asia Advisory Board

2024 - present Standing committee member, Asia-Pacific Conference for Offshore Wind Technology(APCOW series, <https://apcow2024.org/>, <https://www.apcow2025.com/>, <https://apcow.org/2026/>)

2022 - present Leader, Expert committee for Green Energy Initiative on Shipping(GEIS)

2022 - 2026 Founding director, Center for Offshore wind & Green hydrogen Ammonia Researches (COGAR, KMOU)

2019 - present Member of executive committee, research institute of northeast Asia renewable energy, KSNRE( <https://www.ksnre.or.kr/> )

2017 - present Associate Director, IAHR Asia Working Group Executive Committee

2016 - present Editorial Board Member(offshore wind, hydro & ocean), Renewable Energy (Impact Factor=9.1, 2024), Subject editor(2016-2025)

2010 - present Leadership Team, IAHR, Committee on Hydraulic Machinery and Systems

2021 - 2024 President, Busan Industry University Convergence Agency(BIUCA)

2020 - 2023 Director, BrainKorea21-Global R&E Program for Interdisciplinary Technology of Ocean Renewable Energy(<https://ore.bk21fourkmou.org/en/main/>), KMOU

2019 - 2021 Chairman, Green Energy Strategy Institute(GESI, <https://gesi.kr/> ), Korea

2017 - 2023 Director, Center of renewable energy turbine researches, KMOU

2013 - 2015 Expert committee (energy & environment division) of national science &

- technology council, Korea
- 2001 - 2003 Founding president, Korea Marine Equipment Research Institute (KOMERI, <https://www.komeri.re.kr/>)
- 2000 - 2002 Director, research center for marine equipment, KMOU
- 1996 - 1999 Chairman, PIV research group, Korea Research Foundation
- 1992 - 1992 Visiting professor, department of mechanical engineering, Imperial college, U.K.
- 1982 - 1983 Marine engineer(LPG engineer), Japan Sanko line

#### **Other society experiences:**

- 2017- 2019 Board member, Clean energy strategy committee, Busan city
- 2010 - 2016 Vice-president, Korean Society for New and Renewable Energy(KSNRE)
- 2010 - 2015 Vice-president, Korean Society for Fluid Machinery(KSFM)
- 2009 - 2016 Expert member, technical committee of Korea Energy Technology & Plan Institute(KETEP)
- 2007 - 2012 Vice-president, Korean Society of Power Machinery Engineers, Korea
- 2005 - 2009 Board member, KSFM
- 2005 - 2007 Advisory member, Busan development 2020(renewable energy)

#### **Main research fields:**

- PIV(2D, 3D, dynamic, commercial software, industrial application)
- CFD(source code, CFX, FLUENT, STAR-CCM, Orcaflex etc.)
- Wind energy(turbine blade design, offshore wind floating platform & mooring, small turbine)
- Floating Lidar stability analysis for floating offshore wind farm
- Hydro power(micro hydro turbine design, Francis, cross flow, propeller, vortex, bulb etc.)
- Ocean energy(wave energy converter, tidal current turbine, OTEC)
- Energy storage system(micro pump storage, compressed-air offshore pump storage)
- Pump sump model test(HI/ANSI guideline, international projects, CFD prediction)
- Green shipping(Power to X-offshore wind-green hydrogen/ammonia production, Ship to Ship bunkering, green e-fuel ship)

#### **Membership in academic and professional committees:**

- President, Korean Society for New and Renewable Energy(KSNRE, <https://www.ksnre.or.kr/eng/>), 2016-2018
- President, Korean Society for Fluid Machinery(KSFM, <https://ksfm.org/>), 2016
- Vice-president, Korea Wind Energy Association(KWEA, <https://kwea.or.kr/>), 2005-2016
- Chair, Asian offshore Wind, Wave & Tidal Energy Technology(AW<sup>2</sup>TEC2024), October, 2024, Busan, Korea
- Chair, 2nd IAHR-Asia 2019 Symposium on Fluid Machinery & System(Busan, KSFM, 2019)
- General chair, Asia Pacific World Congress on Engineering(APWCE2018), 2018 Nov., Fiji
- Co-chair, Asia-pacific Forum on Renewable Energy(AFORE2018), Aug. 2018, Mongolia
- Chair, Asia-pacific Forum on Renewable Energy(AFORE2017), Nov., 2017, Busan, Korea
- Co-chair, Asia-pacific Forum on Renewable Energy(AFORE2016), Nov. 2016 Guangzhou
- Expert member, Pump division, ISO TC115, Korea Standard Agency, 1997-2014
- Expert member, Ocean energy IEC-TC 114, Korea Standard Agency, 2008-2013
- Chair, program committee, Asia-pacific Forum on Renewable Energy(AFORE2013), Nov., 2013, Jeju, Korea
- Chair, organizing committee, International Symposium on Fluid Machinery and Fluid Engineering(ISFMFE2012), Dec. 2012, Jeju, Korea
- Founding chair, organizing committee, 1<sup>st</sup> Asia-pacific Forum on Renewable Energy (AFORE2011, KSNRE), Nov., 2011, Busan, Korea

- Chair, organizing committee, International Symposium on Low Carbon and renewable energy Technology(ISLCT2010, KSNRE), Nov., 2010, Jeju, Korea
- Chair, 3<sup>rd</sup> Asia workshop on sump model test, Oct., 2010, Busan, Korea
- Chair, organizing committee, World Wind Energy Conference(WWEC 2009, KWEA), June, 2009, Jeju, Korea
- Chair, research group for spray droplet dynamics, Korea research foundation, 2005-2006

#### **Major prizes and awards:**

- Grand Prize of Engineering, Busan Metropolitan City Science & Technology (2017)
- Minister Prize, Ministry of Trade, Industry & Energy(2015), ROK
- Research Grand Excellence Awards from KSFM(2012), KSNRE(2013), KMOU(2013, 2015), KWEA(2014), ROK
- Prime Minister Prize(1992), ROK

#### **Academic R&D activities:**

- More than 200 papers are published in international Journals and proceedings since 1989
- 4 books published(in Korean):Fluid dynamics(2001), Introduction to ocean energy(2008), Ocean energy engineering(2016), Offshore wind farm development technology(2019)
- Supervisor of more than 90 PhD & master degree students since 1989

#### **Personally selected representative achievements:**

- Commercialization & Utilization of dynamic PIV S/W & H/W system “CACTUS” since 1997
- Establishment of KOMERI (<https://www.komeri.re.kr/>) in 2001 as founding president to support national marine equipment R&D for domestic shipbuilding & offshore plant industry, now global top growth
- Launch of annual AFORE(Asia-Pacific Forum on Renewable Energy) series as founding chair of organizing committee, KSNRE in 2011, now internationally well-known as one of global renewable energy and policy conference
- Launch of IAHR-Asia Symposium on Fluid Machinery & System in 2017 with China and Japan in 2017 and organization of 2<sup>nd</sup> IAHR-Asia Symposium, Busan, Korea in 2019
- Establishment of Center for Offshore wind & Green hydrogen Ammonia Research in 2022
- Launch of APCOW(Asia-Pacific Conference for Offshore Wind Technology) with Japan and China in 2024 and organization of 3<sup>rd</sup> APCOW, Incheon, Korea in 2026
- Development of novel principle based wave energy converter(WEC) turbine(KMOU WAVESHIP) in 2010 and its continuous performance enhancement researches
- Highly cited research certificate from Journal of Wind Engineering & Industrial Aerodynamics, December 2016, recognizing journal quality contribution
- Plenary lecture entitled “Experiences and Prospects of Fluid Machinery Researches in Renewable Energy” at IAHR-Asia 2025, Jeju, Korea in 2025

#### **Current activities:**

- Green shipping networking for 2050 net-zero emission in maritime sector via COGAR ([www.kmou-cogar.kr](http://www.kmou-cogar.kr))
- Renewable Energy based Green Hydrogen & Ammonia ecosystem for global GHG reduction
- Floating offshore wind, Offshore green e-fuels(PtX-hydrogen & ammonia), WESS(Water ESS)
- Numerical analysis of over 10MW floating offshore wind platform mooring system
- Commercialization of KMOU WAVESHIP & air-turbine wave energy converter system
- Sump model HI/ANSI test for global industry pump station since 2005