THANH HOANG PHAN Last updated: **Dec. 30, 2021**

Pusan National University
School of Mechanical Engineering
Busan 46241, South Korea

Phone: (+82) 10-3095-0978
E-mail: phanhoang90@pusan.ac.kr
Lab website: https://cfd.pusan.ac.kr

EDUCATION

PhD., Mechanical Engineering (Energy System Major)

Pusan National University (South Korea), **02/2020**

Dissertation: Numerical analysis of compressible multiphase flows: Applications to film boiling, condensation, and underwater explosion problems

Advisor: Prof. Warn-Gyu Park

B.Sc., Road and Bridge Engineering

Danang University of Science and Technology (Vietnam), **06/2013**

Dissertation: Research on aerodynamics and Flutter simulation using a CFD Model in Long-Span Bridges

Advisor: Dr. Van-My Nguyen and Dr. Hoang Nam Phan

EMPLOYMENT

Pusan National University, **Postdoctoral Researcher**, 03/2020-present

Danang Architecture University, Assistant Lecturer, 09/2013-02/2015

AWARDS

Brain Korea (BK) scholarship: 2015-2019, Korea Government

Third prize in “Student scientific research”: 2013, The University of Danang

Vietnamese government full scholarship: 2008-2013, The University of Danang

TEACHING EXPERIENCE

10/2013-10/2014: Assistant Lecturer, Faculty of Road and Bridge Engineering, Danang Architecture University, Danang, Vietnam.

RESEARCH INTERESTS

Computational Fluid Dynamic, Multiphase Flow, Heat and Mass Transfer modeling, Thermodynamic, Hydrodynamic, Boiling, Condensation, Underwater explosion, Partial/super-cavitation, Fluid-structure interaction.

TECHNICAL SKILLS

Fortran, In-house CFD code, Pointwise, Tecplot, Ansys FLUENT, Ansys GAMBIT, MATLAB, Latex

PUBLICATION LIST

2021

16. **T.-H. Phan,** V.-T. Nguyen, D-T Nguyen, D-H Kim, and W.-G. Park, "*Influence of phase-change on the collapse and rebound stages of a single spark-generated cavitation bubble*", **International Journal of Heat and Mass Transfer**, pp. 122270, 2021/11. **(IF=5.584, Top 10%).**

15. Ebrahim Kadivar, **T.-H. Phan**, W.-G. Park, and Ould el Moctar, "*Dynamics of a single cavitation bubble near a cylindrical rod"*, ***Physics of Fluids*****,** 33, 113315, 2021/11 **(IF=3.514, Q1).**

14. **T.-H. Phan,** V.-T. Nguyen, D-T Nguyen, D-H Kim, and W.-G. Park, "*Study on simultaneous thermodynamic and hydrodynamic mechanisms of underwater explosion*", **International Journal of Heat and Mass Transfer**, vol. 178, pp. 121581, 2021/10. **(IF=4.947, Top 10%)**

13. Anh, Dinh Le, **T.-H. Phan**, and Hung, Tran The, "*Assessment of Homogeneous Model for Simulating the Cavitating Flow in Wide-range Temperature Water"* **ASME Journal of Fluid Engineering,** vol. 143, no. 10, 2021, **(IF=2.056)**.

12. V.-T. Nguyen, **T.-H. Phan**, and W.-G. Park, "*Numerical modelling of multiphase compressible flows with the presence of shock waves using an interface-sharpening five-equation model",* **International Journal of Multiphase Flow,** vol. 135, pp. 103542, 2021/02, **(IF=3.083)**.

11. V.-T Nguyen, **T.-H Phan**, D.-T Nguyen, and W.-G. Park, *Numerical modeling for compressible two-phase flows and application to near-field underwater explosions,* **Computers & Fluids***,* vol. 215, pp. 104805, 2021/01, **(IF=2.399)**.

10. D.-T Nguyen, V.-T Nguyen, **T.-H Phan**, and W.-G. Park, "*An enhancement of coupling method for interface computations in incompressible two-phase flows*", **Computers & Fluids***,* vol. 214, pp. 104763, 2021/01. **(IF=2.399)**

9. **T.-H. Phan**, J-G. Shin, V.-T. Nguyen, D-T Nguyen, and W.-G. Park, "*Numerical analysis of an unsteady natural cavitating flow around an axisymmetric projectile under various free-stream temperature conditions",* **International Journal of Heat and Mass Transfer**[*]*,* vol. 164, pp. 120484, 2021/01. **(IF=4.947, Top 10%)**

2020

8. V.-T Nguyen, **T.-H Phan**, D.-T Nguyen, and W.-G. Park, *3D simulation of water entry of an oblique cylinder with six-degree-of-freedom motions using an efficient two-phase flow model,* **Ocean Engineering***,* 108409, 2020/12 **(IF=3.068, Top 10%)**

7. **T.-H. Phan**, V.-T. Nguyen, and W.-G. Park, "*Numerical study on strong nonlinear interactions between spark-generated bubbles and a free surface",*

International Journal of Heat and Mass Transfer[*]*,* vol. 163, pp. 120506, 2020/12. **(IF=4.947, Top 10%)**

6. V.-T. Nguyen, **T.-H. Phan**, and W.-G. Park, "*Modeling and numerical simulation of ricochet and penetration of water entry bodies using an efficient free surface model",* **International Journal of Mechanical Sciences**[*]*,* 82, pp. 105726, 2020/09. **(IF=4.134, Top 10%)**

5. SalaiSargunan S Paramanantham, **T.-H. Phan**, and W.-G. Park, "Numerical analysis of *bubble condensing behavior under high-pressure flow conditions",* **Part C: Journal of Mechanical Engineering Science 0(0), 1-17***,* 2020/04. **(IF=1.359)**

4. V.-T. Nguyen, T.-N. Nguyen, **T.-H. Phan**, and W.-G. Park, "*Efficient three-equation two-phase model for free surface and water impact flows on a general curvilinear body-fitted grid*", **Computers & Fluids***,* vol. 196, 2020/01 **(IF=2.223)**

2019

3. **T.-H. Phan**, V.-T. Nguyen, and W.-G. Park, "*Numerical study on dynamics of an underwater explosion bubble based on compressible homogeneous mixture model*", **Computers & Fluids**, vol. 191, 2019 **(IF=2.223)**

2018

2. **T.-H. Phan**, S.-S. Won, and W.-G. Park, "*Numerical simulation of air-steam mixture condensation flows on a vertical tube*", **International Journal of Heat and Mass Transfer**[*]**,** vol. 127, 2018 **(IF=4.346, Top 10%)**

1. **T.-H. Phan**, C.-T. Ha, and W.-G. Park, "*Numerical simulation of bubble collapse between two parallel walls and saturated film boiling on a sphere*", **International Journal of Heat and Mass Transfer**[*], vol. 127, 2018 **(IF=4.346, Top 10%)**

GRANTS/FUNDING

2022/01-2022/12: ***Co-Principal Investigator*****, Korea-Germany R&D Network Program**, "*Experimental and numerical investigation of thermodynamic effects on single cavitation bubble dynamics*", funding: **25,000,000 won.**

2020/06-2023/05: ***Principal Investigator*****,** The **National Research Foundation of Korea (NRF)**, Grand Number: 2020R1I1A1A01071163, "*Code development for numerical analysis of thermodynamic mechanisms of natural/ventilated cavitation in thermos-fluids*", total funding: **150,000,000 won**.

2018-2020: ***Participator,*** The National Research Foundation of Korea, Grand Number: 2018R1A2B6008864, "*Numerical analysis of water impact force and 6DOF behaviors of high-speed water entry bodies using calculations of free surface and multiphase flow*", funding: 300,000 usd/3 years.

2015-2017: *Participator*, The Nuclear Safety Research Program, Grand Number: 1305011, "*Development of basic thermal hydraulic model and code improvement for advancement of nuclear safety regulation technology*".

SELECTED TALK

5. **T.-H. Phan et al.** *"Fully compressible multiphase model and simulation of underwater explosion and cavitation bubble dynamic behaviors",* **34th Symposium on Naval Hydrodynamics,** June 26th - July 1st, 2022**, Washington, DC, USA. (Abstract accepted)**

4. **T.-H. Phan**, V.-T. Nguyen, D-T Nguyen, and W.-G. Park, "*Numerical study on the wall pressure caused by spark-generated underwater bubble near a hemispheric boundary*", **11th International Symposium on Cavitation 2021 (CAV2021)**, May 10-13, 2021, Daejeon, **Korea**.

3. **T.-H. Phan**, V.-T. Nguyen, and W.-G. Park, "*Numerical analysis of nonlinear interaction between an underwater explosion bubble and a free surface*", **The 21st Cross Straits Symposium on Energy and Environmental Science and Technology (CSS-EEST)**, **China**, 2019. 11.26.

2. **T.-H. Phan**, V.-T. Nguyen, and W.-G. Park, "*Numerical simulation of the dynamics of a spark-generated bubble near a free surface*," **The Korean Society of Mechanical Engineers Conference (KSME) Conference**, **Korea**, 2019. 11.15.

1. **T.-H. Phan**, C.-T. Ha, and W.-G. Park, "*Numerical simulation of air-stream mixture jet condensation flows*," **Korean Society for Computational Fluids Engineering (KSCFE) Conference**, **Korea**, 2018.11.01.

SERVICE

Reviewer: Ocean Engineering, International Journal of Mechanical Engineering and Applications, Journal of Hydrodynamics, Computer Modeling in Engineering & Sciences.

REFERENCES

WARN-GYU PARK, (Ph.D. dissertation advisor)
School of Mechanical Engineering, Pusan National University, South Korea.
e-mail: wgpark@pusan.ac.kr

EBRAHIM KADIVAR, (Collaboration researcher)
Institute of Ship Technology, Ocean Engineering and Transport Systems, University of Duisburg-Essen, 47057 Duisburg, Germany.
e-mail: ebrahim.kadivar@uni-due.de

HOANG NAM PHAN, (B.Sc. dissertation advisor)
The University of Danang - University of Science and Technology, Da Nang 550000, Vietnam.
e-mail: phnam@dut.udn.vn