Thanh T. Banh | Curriculum Vitae

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Citations: **319** ◇ h-index: **11** ◇ i10-index: **11**

Education and Qualifications

Sejong University, Seoul, South Korea

Integrated Master-Doctoral Degree Program, Grade Point Average: ***4.21/4.50***   *2016 to 2022*
Department of Architectural Engineering
Advisor: Prof. Dongkyu Lee

University of Science, Vietnam National University, Ho Chi Minh City

*Bachelor (**Honor Class**), Grade Point Average:* ***8.2/10*** *(Thesis mark: 10/10)*   *2011 to 2015*
Faculty of Mathematics and Computer Science, Specialized in Applied Mathematics
Advisor: Prof. Trung Nguyen-Thoi

Professional Experiences

o November 2024 to Present: *Postdoctoral Researcher*, Computational Mechanics, Laboratory for Multiphysics Systems Design, Department of Mechanical Systems Engineering, Jeonbuk National University, Jeonju, South Korea

o March 2022 to October 2024: *Postdoctoral Researcher*, Laboratory of Steel Structures and Structural Optimization for Buildings, Department of Architectural Engineering, Sejong University, Seoul, South Korea

o March 2016 to February 2022: *Research Assistant*, Laboratory of Steel Structures and Structural Optimization for Buildings, Department of Architectural Engineering, Sejong University, Seoul, South Korea

o August 2015 to February 2016: *Research Intern*, Institute for Computational Science, Ton Duc Thang University, Ho Chi Minh City, Vietnam.

Research Interests

o Computational mechanics.
o Numerical methods (finite element method, finite difference method, isogeometric analysis).
o Structural optimization (stability/vibration-related, multimaterial systems, stress/strength-driven, time-dependent, additive manufacturing-related, multiphysics systems).
o Small/large deformation problem.
o Multiphysics systems (thermoelastic problems, coupled thermo-mechanical systems, design-dependent pressure loads, piezoelectric material, soft robotics).
o Functionally graded structures, incompressibility, metamaterial (multiscale/concurrent).

Research Skills and Expertise

o Read, write, report, and publish scientific articles.
o Programing computational code and simulation finite element models of engineering structures.
o Research collaboration with scientists in different countries (e.g., Vietnam, Korea, Germany).

o Possess strong independent research skills.

Technical skills

OS: Microsoft Windows, macOS

Programming: Microsoft Office, MATLAB, LaTeX

Soft Skills

Self-motivated, adaptable, teamwork, communication, problem solving, and ability to manage working under pressure.

Characteristic and Hobbies

Characteristic: Hardworking, enthusiastic, responsible, persevering, independent, sociable.

Hobbies: Enjoy reading, cooking, and listening to music.

Languages

Vietnamese: Native (Mothertongue)

English: Advanced

Research projects

German-Korean cooperation project (GENKO): A multi-material Rhino-Grasshopper plugin was developed through a collaborative effort between the University of Applied Sciences Luebeck and Sejong University. The work was supported by a grant from the National Research Foundation of Korea (NRF), funded by the Korean government (MSIT) (No. 2022R1A2C1003776).

Selected Publications

UnderReview *International Journal of Mechanical Sciences* (IF: 7.1),
Thanh T. Banh, Dongkyu Lee.
Comprehensive thermoelastic stress-driven approach for thermo-mechanical-pressure multiphysics systems.

UnderReview *Engineering with Computers* (IF: 8.7),
Thanh T. Banh, Dongkyu Lee.
Efficient topology optimization for geometrically nonlinear multi-material systems under design-dependent pressure loading.

Oct. 2024 *Composite Structures* (IF: 6.3),
Thanh T. Banh, Son H. Nguyen, Dongkyu Lee.
Comprehensive stress-driven multi-material problem for heat-sinking heterogeneous structures.

Sep. 2024 *International Journal of Mechanical Sciences* (IF: 7.1),
Thanh T. Banh, Qui X. Lieu, Son H. Nguyen, Dongkyu Lee.
Stress-driven design of incompressible multi-materials under frequency constraints.
DOI: `https://doi.org/10.1016/j.ijmecsci.2024.109416`.

May 2024 *Steel and Composite Structures, An International Journal* (IF: 4.0),
Thanh T. Banh, Joowon Kang, Soomi Shin, Dongkyu Lee.
Multi-material polygonal topology optimization for functionally graded isotropic and incompressible linear elastic structures.
DOI: `https://doi.org/10.12989/scs.2024.51.3.261`.

Arp. 2024 *Engineering with Computers* (IF: 8.7),
Thanh T. Banh, Dongkyu Lee.
Comprehensive polygonal topology optimization for triplet thermo-mechanical-pressure multi-material systems.
DOI: `https://doi.org/10.1007/s00366-024-01982-4`.

Mar. 2024 *Thin-Walled Structures* (IF: 5.7),
Thanh T. Banh, Soomi Shin, Joowon Kang, Dongkyu Lee.
Frequency-constrained topology optimization in incompressible multi-material systems under design-dependent loads.
DOI: `https://doi.org/10.1016/j.tws.2023.111467`.

Fer. 2024 *Engineering with Computers* (IF: 8.7),
Thanh T. Banh, Soomi Shin, Joowon Kang, Ji Zhang, Dongkyu Lee.
Comprehensive multi-material topology optimization for stress-driven design with refined volume constraint subjected to harmonic force excitation.
DOI: `https://doi.org/10.1007/s00366-023-01939-z`.

Jul. 2023 *Steel and Composite Structures, An International Journal* (IF: 4.0),
Thanh T. Banh, Nam G. Luu, Dongkyu Lee.
A smooth boundary scheme-based topology optimization for functionally graded structures with discontinuities.
DOI: `https://doi.org/10.12989/scs.2023.48.1.073`.

May 2023 *Engineering with Computers* (IF: 8.7),
Thanh T. Banh, Qui X. Lieu, Joowon Kang, Youngkyu Ju, Soomi Shin, Dongkyu Lee.
A novel robust stress-based multimaterial topology optimization model for structural stability framework using refined adaptive continuation method.
DOI: `https://doi.org/10.1007/s00366-023-01829-4`.

Mar. 2023 *Structural and Multidisciplinary Optimization* (IF: 3.6),
Thanh T. Banh, Qui X. Lieu, Jaehong Lee, Joowon Kang, Dongkyu Lee.
A robust dynamic unified multi-material topology optimization method for functionally graded structures.
DOI: `https://doi.org/10.1007/s00158-023-03501-3`.

Sep. 2022 *Steel and Composite Structures, An International Journal* (IF: 4.0),
Thanh T. Banh, Nam G. Luu, Dongkyu Lee.
The level set-based topology optimization for three-dimensional functionally graded plate using thin-plate spline.
DOI: `https://doi.org/10.12989/scs.2022.44.5.633`.

Nov. 2021 *Steel and Composite Structures, An International Journal* (IF: 4.0),
Thanh T. Banh, Nam G. Luu, Qui X. Lieu, Jaehong Lee, Joowon Kang, Dongkyu Lee.
Multiple bi-directional FGMs topology optimization approach with a preconditioned conjugate gradient multigrid.
DOI: `https://doi.org/10.12989/scs.2021.41.3.385`.

Oct. 2021 *Composite Structures* (IF: 6.3),
Thanh T. Banh, Nam G. Luu, Dongkyu Lee.
A non-homogeneous multi-material topology optimization approach for functionally graded structures with cracks.
DOI: `https://doi.org/10.1016/j.compstruct.2021.114230`.

Apr. 2020 *Steel and Composite Structures, An International Journal* (IF: 4.0),

Thanh T. Banh, Xuan, Q. Nguyen, Michael Herrmann, Filip C. Filippou, Dongkyu Lee. Multiphase material topology optimization of Mindlin-Reissner plate with nonlinear variable thickness and Winkler foundation.
DOI: `https://doi.org/10.12989/scs.2020.35.1.129`.

Jan. 2019 *Structural and Multidisciplinary Optimization* (IF: 3.6),
Thanh T. Banh, Dongkyu Lee.
Topology optimization of multi-directional variable thickness thin plate with multiple materials.
DOI: `https://doi.org/10.1007/s00158-018-2143-8`.

Feb. 2018 *Composite Structures* (IF: 6.3),
Thanh T. Banh, Dongkyu Lee.
Multi-material topology optimization design for continuum structures with crack patterns.
DOI: `https://doi.org/10.1016/j.compstruct.2017.11.088`.

Feb. 2017 *Composite Structures* (IF: 6.3),
Thanh Banh-Thien, Hau Dang-Trung, Linh Le-Anh, Vinh Ho-Huu, Trung Nguyen-Thoi.
Buckling analysis of non-uniform thickness nanoplates in an elastic medium using the isogeometric analysis.
DOI: `http://dx.doi.org/10.1016/j.compstruct.2016.11.092`.

Awards

2016 to 2022: Integrated Master-Doctoral Scholarships awarded by Sejong University.

2015, 2016: Encouraging scholarships of the University of Science (top ranking students).

2012, 2014 and 2015: Honor Class Scholarships of the Vietnam National University.

Other Information

H-Index: 11 (Citation: 319) (Google Scholar, updated on Oct. 2024).

Link (Google Scholar): `https://scholar.google.com/citations?hl=en&user=4E52l2AAAAAJ`.
Link (Research Gate): `https://www.researchgate.net/profile/Thanh-Banh`.
Link (ORCID): `https://orcid.org/0000-0001-5618-5532`.

Collaborators

Prof. Dongkyu Lee
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Sejong University, Seoul, South Korea
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Dr. Son H. Nguyen

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