

# JOURNAL OF P-ISSN 1859-2996 e-ISSN 2734-9268 SCIENCE AND TECHNOLOGY IN C I V I L ENGINEERING

(ACI Indexed Journal - www.stce.huce.edu.vn)

Vol.19 No.3 9 - 2025



## HANOI UNIVERSITY OF CIVIL ENGINEERING



### **AIMS AND SCOPE**

Journal of Science and Technology in Civil Engineering (JSTCE) is an international, peer-reviewed journal dedicated to advancing knowledge and innovation in civil and construction engineering. Published quarterly in English by Hanoi University of Civil Engineering (HUCE) (p-ISSN 1859-2996 | e-ISSN 2734-9268), the journal serves as a platform for disseminating high-quality research and practical applications in civil engineering and related fields. JSTCE welcomes original research articles and reviews that address contemporary challenges and emerging trends in science, technology and sustainable development of the construction industry. The journal particularly encourages interdisciplinary and innovative contributions with strong theoretical foundations and real-world implications. The journal covers a wide spectrum of topics, including but not limited to: structural, building and industrial engineering; bridge, road and transportation engineering; coastal, offshore and hydraulic engineering; advanced construction materials and mechanical engineering; architecture, urban design and planning; construction economics, management and project delivery; environmental engineering and sustainability; digital technologies in construction (e.g., BIM, AI, simulation and computer science applications).

### **JOURNAL RECOGNITION AND SUBMISSION**

Since 2019, JSTCE has been recognized as a prestigious national journal by the National Science and Technology Development (NAFOSTED) and has been indexed in the ASEAN Citation Index (ACI) since 2020. All submissions undergo a rigorous double-blind peer-review process by at least two independent experts. Manuscript submission, peer review and publication are managed through the journal's online system: https://stce.huce.edu.vn/index.php/en.

**EDITOR-IN-CHIEF** 

**Dinh Van Thuat** 

Hanoi University of Civil Engineering, Vietnam

**MANAGING EDITOR** 

Do Thanh Cong

Hanoi University of Civil Engineering, Vietnam

**ADVISORY EDITORS** 

John van de Lindt Colorado State University, USA **Antonio Nanni** 

University of Miami, USA

### **EDITORIAL BOARD MEMBERS**

Mizan Ahmed

Curtin University, Australia

**Nguyen Viet Anh** 

Thanh T. Banh

Jeonbuk National University, Korea

Ha H. Bui

Monash University, Australia

**Ngoc Kien Bui** 

The University of Tokyo, Japan

**Tinh Quoc Bui** 

Tokyo Institute of Technology, Japan

**Ying-Chieh Chan** 

National Taiwan University, Taiwan

Po-Han Chen

Concordia University, Canada

Wensu Chen

Curtin University, Australia

**Gael Combe** 

Université Grenoble Alpes, France

Tommaso D'Antino

Politecnico di Milano, Italy

Thang N. Dao

University of Alabama, USA

**Daniel Dias-da-Costa** 

The University of Sydney, Australia

**Kien Dinh** 

Embry-Riddle Aeronautical University, USA

**Nguyen Hoang Giang** 

Hanoi University of Civil Engineering, Vietnam

**Benoit Gilbert** 

Griffith University, Australia

Yifei Hao Hebei University of Technology, China Jun He

Changsha Univ. of Science and Technology, China Marshall University, USA

**Nguyen Trung Hieu** 

Hanoi University of Civil Engineering, Vietnam Hanoi University of Civil Engineering, Vietnam

**DeChun Huang** 

Hohai University, China

Shang-Hsien (Patrick) Hsieh

National Taiwan University, Taiwan

**Truong Viet Hung** 

Thuyloi University, Vietnam

**Ken Kawamoto** 

Saitama University, Japan

Danielle Labbé

Université de Montréal, Canada

Thien-Phu Le

Université d'Évry Val-d'Essonne, France

**Jaehong Lee** 

Sejong University, Korea

**Natt Leelawat** 

Chulalongkorn University, Thailand

Liang-Jenq Leu

National Taiwan University, Taiwan

Jun Li

University of Technology Sydney, Australia

Ye Li

University of Southampton, UK

Szu-Yun Lin

National Taiwan University, Taiwan

**Nguyen Minh Long** 

Ho Chi Minh City Univ. of Technology, Vietnam

Xing Ma

University of South Australia, Australia

**Phan Hoang Nam** 

The University of Danang, Vietnam

Hien Manh Nghiem

Tuan Ngo

The University of Melbourne, Australia

Long D. Nguyen

Florida Gulf Coast University, USA

Giang D. Nguyen The University of Adelaide, Australia

May Huu Nguyen

Hiroshima University, Japan

Adrianto Oktavianus

Bandung Institute of Technology, Indonesia

**Cao Hung Pham** 

The University of Sydney, Australia

Thong M. Pham

University of South Australia, Australia

**Quoc Tri Phung** 

Belgian Nuclear Research Centre, Belgium

**Nguyen Viet Phuong** 

University of Civil Engineering, Vietnam

**Keerthan Poologanathan** 

Northumbria University, UK

Ravipudi Venkata Rao Sardar Vallabhbhai Nat'l Inst. of Technology, India

**Jaroon Rungamornrat** 

Chulalongkorn University, Thailand

Amardeep Singh Changzhou Institute of Technology, China

**Elaina J. Sutley** 

University of Kansas, USA

Anh Minh Tang Institut Polytechnique de Paris, France

**Duc-Kien Thai** Sejong Univesity, Korea Chanachai Thongchom

Thammasat University, Thailand

**Quy-Dong To** 

Université Gustave Eiffel, France

Tran Minh Tu

Hanoi University of Civil Engineering, Vietnam

**Nguyen Van Tuan** 

Hanoi University of Civil Engineering, Vietnam

Thuc Vo

La Trobe University, Australia

Minh-Ngoc Vu

French Nat'l Radioactive Waste Mamt. Agency, France

Son Tung Vy

Queensland University of Technology, Australia

**Xiao-Yong Wang** 

Kangwon National University, Korea

**Youde Wang** 

Xi'an University of Architecture and Technology, China

**Kuo-Hsin Yang** 

National Taiwan University, Taiwan

Hidenari Yasui

University of Kitakyushu, Japan

Qianqian Yu

Tongji University, China Dong Zhang

Fuzhou University, China

**Hao Zhang** The University of Sydney, Australia

JOURNAL SECRETARIES Nguyen Huong Thao, Le Phuong Chi, Nguyen Thu Thuy

# **Table of Contents**

1.	Cluster analysis of consumer characteristics influencing willingness to pay for green buildings
	and associated energy-efficient purchases in Taiwan
	Simeon N. Ingabo, Christian K. Bambang, Non Phichetkunbodee, Ying-Chieh Chan
2.	Shear performance of prestressed hollow-core slabs strengthened with CFRP: Finite element
	modeling and parametric insights
	Nguyen Thi Nguyet Hang, Tran Viet Hung, Fan Shengxin
3.	Numerical investigation on local buckling capacity of cold-formed steel compression members
	made of advanced high strength steels at elevated temperatures
	Son Tung Vy
4.	Numerical investigation of the axial compressive capacity of reinforced concrete-filled double-
	skin steel tubular short columns
	Nguyen Van Ninh, Pham Tuan Dung, Vu Quang Viet, Zhengyi Kong, Pham Thai Hoan
5.	A CS-MITC3+ plate element for static analysis of HSDT-type functionally graded plates under
	thermo-mechanical loading
	Thanh Chau-Dinh, Minh La-Tuan, Binh Le-Phuong
6.	Evaluation of the port operation conditions influencing the selection of Berth Occupancy Rates
	(BOR)
	Nguyen Minh Quy, Nguyen Duc Manh
7.	Free vibration of axially loaded functionally graded carbon nanotube-reinforced composite
	curved beams
	Nguyen Ngoc Hieu, Phan Thanh Thi, Bui Van Tai, Nguyen Ngoc Duong
8.	Practical formulation for estimating the compressive strength of self-compacting fly ash
	concrete using gene-expression programming
	Van-Ngoc Pham