HANOI UNIVERSITY OF CIVIL ENGINEERING

JOURNAL OF SCIENCE AND TECHNOLOGY IN CIVIL ENGINEERING

JOURNAL OF SCIENCE AND TECHNOLOGY IN CIVIL ENGINEERING

p-ISSN 1859-2996
e-ISSN 2734-9268

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

Vol.20 No.2 - 6/2026

Vol.20 No.2
6 - 2026

HANOI UNIVERSITY OF CIVIL ENGINEERING

JOURNAL OF SCIENCE AND TECHNOLOGY IN CIVIL ENGINEERING

p-ISSN 1859-2996
e-ISSN 2734-9268

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). 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
Hanoi University of Civil Engineering, Vietnam

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

Nguyen Trung Hieu
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
Marshall University, USA

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

Eldon R. Rene
IHE Delft, The Netherlands

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 Mgmt. 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**

Address: 4th floor, Library Building, Hanoi University of Civil Engineering, 55 Giai Phong Street, Bach Mai Ward, Hanoi, Vietnam
Tel: (84) 3215 1343; Fax: (84) 3869 1684; E-mail: stce@huce.edu.vn; Website: http://stce.huce.edu.vn/index.php/en
License No. 118/GP-BTTTT dated 12 April 2023 by Ministry of Information and Communications (the old ones in 2007, 2012, 2016)
Printed at Ngoc Tram Printing Joint Stock Company (Address: Room 107 - E8 Thanh Xuan Bac, Hanoi, Vietnam)

Table of Contents

1. Hydraulic conductivity estimation for ballasted railway tracks: A systematic review
Oleg Gorbunov, Chana Sinsabvarodom, Damrongsak Rinchumphu 1
2. CFD modeling of mudflow impact on rigid barriers using the Herschel–Bulkley rheology
Nhu H. T. Nguyen, Thanh-Trung Vo, Tran-Hieu Nguyen, Ngoc-Phan Nguyen, Trung-Kien Nguyen .. 20
3. Buckling analysis for plates using finite strip method based on refined Mindlin–Reissner plate theory
Cuong Hung Bui, Quoc Dang Tu Chiem, Son Tung Vy, Andy Nguyen 33
4. Workplace injury prevention in construction: A data-driven evaluation using WIPAS
Thalente Lungile Nkosi, Fidelis Emuze, John Smallwood 48
5. Greenhouse gas emissions mitigation in municipal solid waste collection systems
Trinh Bao Khanh, Hoang Minh Giang, Vu Viet Ha, Nguyen Huong Giang 60
6. Target value design as a conditional tool system: How A3, CBA, and BIM enable value-driven decision-making in construction projects
Quan T. Nguyen, Juliana Brahim 76
7. Effect of recycled sugarcane bagasse as an internal curing additive on mechanical strength, abrasion resistance, and drying shrinkage of paving concrete
Dinh-Thang Nguyen, Phuong N. Pham, Trong-Phuoc Huynh 90
8. Generative AI adoption in civil engineering: A mini review of benefits, barriers, and risks
Vu Van Phong, Nguyen Quoc Toan, Nguyen Van Tam 105