

JOURNAL OF STRUCTURAL ENGINEERING & APPLIED MECHANICS

VOLUME 8 • ISSUE 2 • JUNE 2025

ISSN: 2630-5763

Editor-in-Chief

VOLKAN KAHYA

KARADENİZ TECHNICAL UNIVERSITY, TÜRKİYE

Managing Editor

AHMET CAN ALTUNIŞIK

KARADENİZ TECHNICAL UNIVERSITY, TÜRKİYE



www.dynaaca.com



www.goldenlightpublish.com

Journal of Structural Engineering & Applied Mechanics

ISSN: 2630-5763 (online)

Editor-in-Chief

Volkan Kahya

Karadeniz Technical University  volkan@ktu.edu.tr

Managing Editor

Ahmet Can Altunışık

Karadeniz Technical University  ahmetcan@ktu.edu.tr

Design & Layout Editor

Hasan Basri Başağa

Karadeniz Technical University  hasanbb@ktu.edu.tr

Journal of Structural Engineering & Applied Mechanics is an international journal quarterly published by Golden Light Publishing®. Each paper submitted is subject to peer review, and only papers of the highest quality that contain original ideas will be published.

Golden Light Publishing® is a trademark of Dynamic Academy®.

Contact

Golden Light Publishing®

Tel: +90 530 223-2169

E-mail: info@goldenlightpublish.com

Webpage: <https://www.goldenlightpublish.com/journals/1/jseam>

EDITORIAL BOARD (in alphabetical order)

Abdullah Avey İstanbul Ticaret University, Türkiye
Adem Doğangün Uludağ University, Türkiye
Ahmet Birinci Karadeniz Technical University, Türkiye
Alp Caner Middle East Technical University, Türkiye
Barış Sevim Yıldız Technical University, Türkiye
Daniel V. Oliveira University of Minho, Portugal
Dimitri Georgievskii Moscow State University, Russia
Eckart Schnack Karlsruhe Institute of Technology, Germany
Ehsan Noroozinejad Western Sydney University, Australia
Erol Tutumluer University of Illinois, Urbana-Champaign, USA
Halil Sezen Ohio State University, USA
Hasan Biglari University of Tabriz, Iran
Hui-Shen Shen Shanghai Jiao Tong University, China
Kemal Hacıefendioğlu Karadeniz Technical University, Türkiye
Korhan Özgan Karadeniz Technical University, Türkiye
Kurtuluş Soyluk Gazi University, Türkiye
Majid Ayatollahi Iran University of Science and Technology, Iran
Mehmet Hakkı Omurtag İstanbul Medipol University, Türkiye
Mehmet Ülker (Emeritus) Maltepe University, Türkiye
Metin Hüsem Karadeniz Technical University, Türkiye
Mohammad Reza Eslami (Emeritus) Amirkabir University of Technology, Iran
Mohammad Shariyat K.N. Toosi University of Technology, Iran
Murat Emre Kartal İzmir Democracy University, Türkiye
Nihal Eratlı İstanbul Technical University, Türkiye
Ömer Civalek Akdeniz University, Türkiye
Parsa Ghannadi Islamic Azad University, Iran
Raafat El-Hacha University of Calgary, Canada
Roland Duduchava A. Razmadze Mathematical Institute, Georgia
Samir Khafir Ghent University, Belgium
Seyed Sina Kourehli Azarbaijan Shahid Madani University, Iran
Sez Atamturktur Pennsylvania State University, USA
Thuc P. Vo La Trobe University, Australia
Vagif Hacıyev Azerbaijan National Academy of Sciences, Azerbaijan

Journal of Structural Engineering & Applied Mechanics

Volume 8, Issue 2, June 30, 2025

CONTENTS

Haluk Görkem Alcan

- High-temperature response of geopolymer concrete: influence of silica fume content
and fiber type on mechanical and structural integrity 49
Research Article

Kamran Samadi, Baris Gunes, Baris Sayin

- The impact of local soil class on the seismic behavior of a high-rise RC building 76
Research Article

Oguzhan Akarsu, Abdulkadir Cüneyt Aydın

- Enhancing axial load prediction of CFDST columns using machine learning models 103
Research Article

Zafer Yılmaz, Murat Günaydın, Fatih Yesevi Okur, Ertugrul Taciroglu

- Performance of enhanced modal participation ratio in multiple-story damage localization 133
Research Article

Tarun Kansal

- Linear theory of thermoelastic diffusion in triple porosity materials with
microtemperatures and microconcentrations 152
Research Article