

*Challenge Journal of*

# CONCRETE RESEARCH LETTERS

Vol.14 No.2 (2023)

absorption aerated concrete artificial neural network

compressive strength concrete corrosion

cracking curing ductility durability energy

absorption ferrocement flexural strength

fly ash fracture mechanics mechanical properties

mortar nanoparticle reinforced concrete

self-compacting concrete steam curing

strengthening superplasticizer tensile strength

workability waste disposal water absorption



ISSN 2548-0928

**TULPAR**  
ACADEMIC PUBLISHING



# Challenge Journal

## OF CONCRETE RESEARCH LETTERS

### EDITOR IN CHIEF

Prof. Dr. Mohamed Abdelkader ISMAIL

*Miami College of Henan University, China*

### EDITORIAL BOARD

Prof. Dr. Ashraf Ragab MOHAMED	<i>Alexandria University, Egypt</i>
Prof. Dr. Ayman NASSIF	<i>University of Portsmouth, United Kingdom</i>
Prof. Dr. Gamal Elsayed ABDELAZIZ	<i>Benha University, Egypt</i>
Prof. Dr. Hamidah Mohd SAMAN	<i>Universiti Teknologi Mara, Malaysia</i>
Prof. Dr. Han Seung LEE	<i>Hanyang University, Republic of Korea</i>
Prof. Dr. Zubair AHMED	<i>Mehran University, Pakistan</i>
Prof. Dr. Jiwei CAI	<i>Henan University, China</i>
Prof. Dr. Jahangir MIRZA	<i>Hydro-Québec Research Institute, Canada</i>
Prof. Dr. Ahmet Ferhat BİNGÖL	<i>Atatürk University, Türkiye</i>
Assoc. Prof. Dr. Meral OLTULU	<i>Atatürk University, Türkiye</i>
Assoc. Prof. Dr. Saleh Omar BAMAGA	<i>University of Bisha, Saudi Arabia</i>
Assoc. Prof. Dr. Mohammed Seddik MEDDAH	<i>Sultan Qaboos University, Oman</i>
Assoc. Prof. Dr. Brabha NAGARATNAM	<i>Northumbria University, United Kingdom</i>
Dr. Aamer Rafique BHUTTA	<i>Aramco, Saudi Arabia</i>
Dr. Khairunisa MUTHUSAMY	<i>Universiti Malaysia Pahang, Malaysia</i>
Dr. Mahmoud SAYED AHMED	<i>Ryerson University, Canada</i>
Dr. Jitendra Kumar SINGH	<i>Hanyang University, Republic of Korea</i>
Dr. Türkay KOTAN	<i>Erzurum Technical University, Türkiye</i>
Dr. Ali KEYVANFAR	<i>Kennesaw State University, United States</i>
Dr. Arezou SHAFAGHAT	<i>Kennesaw State University, United States</i>

**E-mail:** [cjcr1@challengejournal.com](mailto:cjcr1@challengejournal.com)

**Web page:** [cjcr1.challengejournal.com](http://cjcr1.challengejournal.com)

**TULPAR Academic Publishing**  
[www.tulparpublishing.com](http://www.tulparpublishing.com)





# Challenge Journal

## OF CONCRETE RESEARCH LETTERS

## CONTENTS

---

### *Research Articles*

---

**Chemical resistance of hardened mortar containing andesite and marble industry waste powder** 31–38

*İsmail İsa Atabey, Serhat Çelikten, Mehmet Canbaz*

---

**Use of crushed bricks and recycled concrete as replacement for fine and coarse aggregates for sustainable concrete production** 39–46

*Alaa Abdeltawab Abuellaella, Abeer Elmalky*

---

**Efficacies of suggested strength-based prediction models for estimation of compressive and tensile properties of normal concrete** 47–58

*Mukunda Matada Nalina*

---

