

*Challenge Journal of*

# CONCRETE RESEARCH LETTERS

Vol.16 No.3 (2025)

acoustic emission   aerated concrete   artificial neural  
network   compressive strength   corrosion  
cracking   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



**TULPAR**  
ACADEMIC PUBLISHING

ISSN 2548-0928



# Challenge Journal

## OF CONCRETE RESEARCH LETTERS

### EDITOR-IN-CHIEF

Prof. Dr. Mohamed Abdelkader ISMAIL  
*Brunel University London, United Kingdom*

### EDITORIAL BOARD

Prof. Dr. Gamal Elsayed ABDELAZIZ	<i>Benha University, Egypt</i>
Prof. Dr. Zubair AHMED	<i>Keyano College, Canada</i>
Prof. Dr. Ahmet Ferhat BİNGÖL	<i>Atatürk University, Türkiye</i>
Prof. Dr. Jiwei CAI	<i>Henan University, China</i>
Prof. Dr. Ferit ÇAKIR	<i>Gebze Technical University, Türkiye</i>
Prof. Dr. Mohamed GHRICI	<i>Hassiba Benbouali University of Chlef, Algeria</i>
Prof. Dr. Khandaker M. Anwar HOSSAIN	<i>Toronto Metropolitan University, Canada</i>
Prof. Dr. Jamal KHATIB	<i>Beirut Arab University, Lebanon</i>
Prof. Dr. Han Seung LEE	<i>Hanyang University, Republic of Korea</i>
Prof. Dr. Jahangir MIRZA	<i>Hydro-Québec Research Institute, Canada</i>
Prof. Dr. Ashraf Ragab MOHAMED	<i>Alexandria University, Egypt</i>
Prof. Dr. Meral OLTULU	<i>Atatürk University, Türkiye</i>
Prof. Dr. Hamidah Mohd SAMAN	<i>Universiti Teknologi Mara, Malaysia</i>
Prof. Dr. Xiao-Yong WANG	<i>Kangwon National University, Republic of Korea</i>
Assoc. Prof. Dr. Saleh Omar BAMAGA	<i>University of Bisha, Saudi Arabia</i>
Assoc. Prof. Dr. Zinnur ÇELİK	<i>Atatürk University, Türkiye</i>
Assoc. Prof. Dr. Mohammed Seddik MEDDAH	<i>Sultan Qaboos University, Oman</i>

---

Assoc. Prof. Dr. Brabha NAGARATNAM	<i>Northumbria University, United Kingdom</i>
Assoc. Prof. Dr. Ayman Youssef NASSIF	<i>University of Technology and Education HCMC, Vietnam</i>
Dr. Mahmoud SAYED AHMED	<i>Toronto Metropolitan University, Canada</i>
Dr. Ibrahim ALAMERI	<i>Sana'a University, Yemen</i>
Dr. Salam Rafea ARMOOSH	<i>University of Anbar, Iraq</i>
Dr. Aamer Rafique BHUTTA	<i>Aramco, Saudi Arabia</i>
Dr. Ali KEYVANFAR	<i>Kennesaw State University, United States</i>
Dr. Türkay KOTAN	<i>Erzurum Technical University, Türkiye</i>
Dr. Khairunisa MUTHUSAMY	<i>Universiti Malaysia Pahang, Malaysia</i>
Dr. Arezou SHAFAGHAT	<i>Kennesaw State University, United States</i>
Dr. Jitendra Kumar SINGH	<i>Jindal Steel and Power, India</i>
Dr. Chunjiang ZOU	<i>Brunel University London, United Kingdom</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

**Experimental study on the mechanical performance of polypropylene fiber-reinforced concrete incorporating palm oil fuel ash as partial cement replacement** 115–124

*Alaa Omar Tanash, Ahmed Mokhtar Albshir Budiea,  
Mohd Faizal Md Jaafar, Khairunisa Muthusamy, Fahrizal Zulkarnain*

**Predictive modelling of acoustic emission signal data for corrosion assessment: A modified dimensional analysis based approach** 125–132

*Shilpa Vishal Patil*

**Impact of wrap quantity on strength of damaged and undamaged CFRP-reinforced structural members** 133–141

*Serdal Ünal, Ahmet Burak Kurt, Mehmet Canbaz*

**Design of reactive powder concrete mortar mixes through high strength and durability** 142–154

*Yousry B. I. Shaheen, Zeinab A. Etman, Hanan Lotfy Sabiha*

### Case Studies

**Exploring deflection challenges: A case study on the influence of heavy concrete weight on profiled steel deck slabs** 155–163

*Sudhakaran Arumugam, Vijayaprabha Chakrawarthy, Manicka Mamallan Andavar*

