Lecture Notes in Civil Engineering

Abdullah Al Mamun
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Ahmed Tareq Noaman *Editors*

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About This Book

This book contains the selected papers presented in the 2nd International Conference on Civil Engineering for Sustainability and Disaster Resilience 2024 (ICCESDiRe'24), held at the Kulliyyah (Faculty) of Engineering, International Islamic University Malaysia (IIUM), Gombak, Malaysia, on 13–14 August 2024. The papers include contributions from researchers, scientists, academia, authorities, and practitioners covering topics from the civil engineering fields of structure and construction, traffic and pavements, geo-environment, and water resources related to sustainability and disaster resilience. The papers are produced based on contemporary research works, which were in line with the theme of the conference. This international conference was organised by IIUM in collaboration with Dr. Nik Associates, the Malaysian Institute of Road Safety Research (MIROS) and the University Technology Brunei (UTB).

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About the Editors

Dr. Abdullah Al Mamun is affiliated as a professor in the Department of Civil Engineering at the International Islamic University Malaysia (IIUM). He obtained a B.Sc. in Civil Engineering from Bangladesh University of Engineering and Technology (BUET) in 1993, and completed his Ph.D. in environmental engineering in 2005 from the University Putra Malaysia (UPM). He has 19 years of engineering teaching experience at an International University and 32 years of professional experience in Civil Engineering (water and environment sector). Dr. Abdullah is a chartered and professional engineer and a member of various professional bodies. He is active in conducting research (25 grants), presenting conference papers (106 papers) and publishing research findings in indexed and peer reviewed journal papers (91 papers), writing and editing books and chapters. He is an associate editor of the *IIUM Engineering Journal* (Scopus and WOS Indexed). Every year, he reviews manuscripts for top-level journals and conferences in his field of expertise. Dr. Abdullah is also keen to develop environmentally friendly products and processes (27 awards, 3 patents granted, and 1 pending) and is often involved in part-time engineering consultancy (36 various projects). His academic, industrial, and research work are mainly focused on hydrology, water pollution control, water and wastewater treatment, urban stormwater management, flood mitigation, and integrated river basin management.

Dr. Hiroshi Takebayashi is affiliated as an associate professor in the Disaster Prevention Research Institute (DPRI) at Kyoto University. He obtained his B.Eng. degree from Ritsumeikan University in 1995 and completed his Ph.D. in 2000 from the same University. He has 24 years of engineering teaching experience at Japanese Public Universities and 30 years of research experience in Civil Engineering (water and environment sector). Dr. Takebayashi is a chairperson and a member of various professional bodies (e.g. Visiting Professor at Advanced Disaster Prevention Engineering Center, Nagoya Institute of Technology, Advisory Board Member at UNESCO International Sediment Initiative, Chairperson of iRIC Research Institute). He has completed 60 research grants, published 122 journal papers, written/edited 9 books, delivered 105 invited lectures, and presented research works in newspapers and TV

shows. Dr. Takebayashi is also keen to develop products for river management and disaster prevention (e.g. iRIC, Doshaburu). iRIC is a free software to simulate river flow and channel deformation. His academic research works are mainly focused on river engineering, fluvial morphology, flood and sediment disaster mitigation, and integrated river basin management.

Dr. Ahmed Tareq Noaman is an assistant professor of Construction Technology in the College of Engineering, University of Anbar, Iraq. He obtained his B.Sc. in Civil Engineering in 2002 and M.Sc. in Structural Engineering in 2005 from the University of Anbar. He received his Ph.D. from Universiti Sains Malaysia (USM) in 2017. He was appointed as the head of the Civil Engineering department at the University of Anbar from 2021 until 2024. His academic experience is dedicated to teaching under and higher graduate students at the same university. His teaching experience includes advanced engineering mathematics, scientific research methodology, concrete technology, strength of materials, calculus, and steel structures. He published many papers in local and international journals. As a presenter or keynote speaker, he presented numerous papers at international conferences in Iraq and overseas countries. He received awards for publication in top journals (two awards). He was an editor of the *Iraqi Journal of Civil Engineering* (2018–2021). Dr. Noaman reviewed more than a hundred papers in Publons until 2024. His current research interest is in sustainable constructions and green concrete, impact, and toughness. Currently, he is focusing on the utilisation of agro-waste to produce green building materials.