

Jordan Journal of Mechanical and Industrial Engineering (JJMIE)

JJMIE is a high-quality scientific journal devoted to fields of Mechanical and Industrial Engineering. It is published by The Jordanian Ministry of Higher Education and Scientific Research in corporation with the Hashemite University.

EDITORIAL BOARD

Editor-in-Chief

Prof. **Mousa S. Mohsen**

Editorial board

Prof. **Bilal A. Akash**
Hashemite University

Prof. **Adnan Z. Al-Kilany**
University of Jordan

Prof. **Ayman A. Al-Maaitah**
Mutah University

Prof. **Moh'd A. Al-Nimr**
Jordan University of Science and Technology

Prof. **Ali A. Badran**
University of Jordan

Prof. **Naseem M. Sawaqed**
Mutah University

THE INTERNATIONAL ADVISORY BOARD

Abu-Qudais, Mohammad
Jordan University of Science & Technology, Jordan

Abu-Mulaweh, Hosni
Purdue University at Fort Wayne, USA

Afaneh Abdul-Hafiz
Robert Bosch Corporation, USA

Afonso, Maria Dina
Institute Superior Tecnico, Portugal

Badiru, Adedji B.
The University of Tennessee, USA

Bejan, Adrian
Duke University, USA

Chalhoub, Nabil G.
Wayne State University, USA

Cho, Kyu-Kab
Pusan National University, South Korea

Dincer, Ibrahim
University of Ontario Institute of Technology,
Canada

Douglas, Roy
Queen's University, U. K

El Bassam, Nasir
International Research Center for Renewable
Energy, Germany

Haik, Yousef
United Arab Emirates University, UAE

Jaber, Jamal
Al- Balqa Applied University, Jordan

Jubran, Bassam
Ryerson University, Canada

Kakac, Sadik
University of Miami, USA

Khalil, Essam-Eddin
Cairo University, Egypt

Mutoh, Yoshiharu
Nagaoka University of Technology, Japan

Pant, Durbin
Iowa State University, USA

Riffat, Saffa
The University of Nottingham, U. K

Saghir, Ziad
Ryerson University, Canada

Sarkar, MD. Abdur Rashid
Bangladesh University of Engineering &
Technology, Bangladesh

Signer, Dennis
Wichita State University, USA

Sopian, Kamaruzzaman
University Kebangsaan Malaysia, Malaysia

Tzou, Gow-Yi
Yung-Ta Institute of Technology and Commerce,
Taiwan

EDITORIAL BOARD SUPPORT TEAM

Language Editor

Dr. Zeinab Abu Samak

Publishing Layout

Eng. Sultan M. Amr

Editorial Secretary

Khuloud Al-Zyoud

SUBMISSION ADDRESS:

Prof. **Mousa S. Mohsen**, Editor-in-Chief
Jordan Journal of Mechanical & Industrial Engineering,
Hashemite University,
PO Box 330127, Zarqa, 13133, Jordan

E-mail: jjmie@hu.edu.jo