

May 2024

Proceedings of the International Conference on Industrial Engineering and Operations Management  
ISSN / E-ISSN: 2169-8767  
ISBN: 979-8-3507-1736-5

# 9th North American Conference on Industrial Engineering and Operations Management

(Washington D.C., USA, June 4-6, 2024)

**Editor-in-Chief**  
**Mizanur Rahman, Ph.D.**

**Editorial Board:**

- Dr. Ahad Ali,
- Dr. Nazrul Islam
- Dr. Ali El Kamel, Professor, Department Chemical and Petroleum Engineering, Khalifa University, Abu Dhabi, UAE and Professor of Chemical Engineering, University of Waterloo, Canada
- Dr. Mohammad Shamsuzzaman, Professor, Department of Industrial Engineering and Engineering Management, University of Sharjah, UAE
- Dr. Mohammad Miftaur Rahman Khan Khadem, Associate Professor, Department of Industrial Engineering and Engineering Management, University of Sharjah, UAE
- Dr. Suzan Alaswad, Chair, College of Business, Zayed University, UAE
- Dr. Mahmoud Awad, Associate Professor, Department of Industrial Engineering, American University of Sharjah, UAE
- Dr. Abroon Qazi, Associate Professor, Department of Marketing and Information Systems, School of Business Administration, American University of Sharjah, University City, Sharjah, UAE
- Dr. Balan Sundarakani, Associate Professor, School of Business, University of Wollongong Dubai, Dubai Knowledge Park, UAE
- Dr. Abdulrahim Shamayleh, Associate Professor, Department of Industrial Engineering, American University of Sharjah, UAE
- Dr. Salah Haridy, Associate Professor, Department of Industrial Engineering and Engineering Management, University of Sharjah, UAE
- Dr. Raid Al-Aomar, Professor, Industrial Engineering and Director of the Master of Engineering Management (MEM) program, Abu Dhabi University
- Dr. Mohamed Alblooshi, Assistant Professor, College of Business/Operations Management, Zayed University, UAE
- Dr. Sujana Piya, Associate Professor, Department of Industrial Engineering and Engineering Management, University of Sharjah, UAE

International Conference of Industrial Engineering and Operations Management (ICIEOM) aims to publish quality research work in the field of industrial engineering and operations management (IEOM) for academics, researchers and practitioners to advance the theory and practice as well as to identify major trends in industrial engineering and operations management. The journal is expected to advance the theory and practice through publishing research-oriented papers with a wide variety of problems related on real-life applications and research which affect in global levels.

ICIEOM covers academic research and industrial issues/applications related on fundamentals of industrial engineering, operations management, business management, operations, design, manufacturing, supply chain management, logistics, systems and service engineering, innovation, entrepreneurship, reliability, quality, lean, six sigma, modeling, simulation, optimization, sustainability, machine learning, and artificial intelligence. The application areas include manufacturing, healthcare, energy, transportation, financial, and business operations. Articles must have scientific research contribution with state-of-the-art review.

Published by IEOM Society International, 21411 Civic Center Dr., Suite # 205, Southfield, Michigan 48076, Phone 1-248-450-5660, Email: [info@ieomsociety.org](mailto:info@ieomsociety.org)

Open access proceedings are available online at <http://ieomsociety.org/ieom/proceedings/>

#### **Production Director**

Md Taufiqul Islam, Ph.D.

#### **Cover Illustration**

Takiyah Ali