

“Industrial Developments and Applications of Intelligent Mechatronic Systems”

Mechatronic Systems consist of mechanical, electrical, electronic and software components, also called “multi-technology systems”. Based on behavioral characteristics, there are three types of mechatronic systems, i.e., automated mechatronic systems, intelligent mechatronic systems and intelligent mechatronic networks. With “the third coming” of artificial intelligence (AI), intelligent mechatronic systems are getting to be the research hotspot because many practical problems in mechatronic systems can be solved innovatively by replacing automation with intelligence.

The replaced automation is generated from automated systems, which are pre-programmed to deliver given behavior and are therefore predictable. However, under conditions of uncertainty, intelligent systems are able to achieve specified goals in an unpredictable manner. In other words, these flexible” systems can respond to frequent changes without being re-programmed in their surrounding environments. In order to complete this replacement, distributed AI and traditional AI methods are always adopted, such as expert systems, fuzzy logic or neural networks intelligence. As a result, intelligent machine tools, intelligent robots, intelligent geometry compressors, autonomous road vehicles, self-parking cars, pilotless aircraft and goal-seeking missiles have been manufactured in the industrial domain.

The purpose of this special issue is to gain experience in the field of intelligent mechatronics from both academic and industrial perspectives, focusing on theory and methods that target real world problems and cases of real applications directly, where in particular studies with state-of-the-art progresses and applications are encouraged.

Potential topics include but are not limited to the following:

- Industrial development trends of intelligent mechatronic technologies
- New industrial applications of intelligent mechatronic systems
- Modelling, simulation and validation of intelligent mechatronic systems
- Architectures and algorithms for control intelligent mechatronic systems
- Performance monitoring of intelligent mechatronic systems
- Experimental design methodologies of intelligent mechatronic systems
- Fault detection and isolation of intelligent mechatronic systems
- Control, diagnosis and Supervision of intelligent mechatronic systems
- Reliability modelling, design and evaluation of intelligent mechatronic systems
- Resilient control and applications of intelligent mechatronic systems
- Emerging control theories and related technologies of intelligent mechatronic systems

LIST OF IMPORTANT DATES:

| | |
|---|--------------------------------------|
| <i>Manuscript Submission Deadline Date:</i> | <i>26thOctober, 2021</i> |
| <i>Authors Notification Date:</i> | <i>26thDecember, 2021</i> |
| <i>Revised Papers Due Date:</i> | <i>26thMarch, 2022</i> |
| <i>Final notification Date:</i> | <i>26thJune, 2022</i> |

INSTRUCTIONS TO AUTHORS

- All manuscripts should follow the author instructions of *IETE Journal of Research* at www.tandfonline.com/tijr and be submitted online at ScholarOneManuscripts™ submission site: <https://mc.manuscriptcentral.com/tijr>.

- During the submission, please indicate that your manuscript is for the special Open Access issue entitled, Industrial Developments and Applications of Intelligent Mechatronic Systems. You will be asked for this information in step one of the submission form.
- Selected conference papers must undergo substantial extensions of at least 40% new content with respect to the original versions before submission. Please make sure to disclose and reference your earlier version.
- As this special issue is to be published Open Access, there will be an Article Publishing Charge (APC) for each accepted special issue article. The APC will be **\$1,500 US dollars**.

GUEST EDITORS:

Dr. Yusri Yusof(LEAD GUEST EDITOR)

*Professor,
Faculty of Mechanical and Manufacturing Engineering,
Universiti Tun Hussein Onn Malaysia (UTHM),
Johor, Malaysia.*

Official Email:yusri@uthm.edu.my

Google Scholar Link:<http://scholar.google.com/citations?user=oWw4incAAAJ&hl=en>

Dr. Yusri Yusof has a PhD in Manufacturing, which he obtained from the University of Loughborough, United Kingdom in the year 2007. He is currently holding the Principle Researcher, Advanced Manufacturing and Materials Centre (AMMC), Institute of Integrated Engineering (IIE). He has multidisciplinary research interests and his main areas of research are manufacturing. He has published 75 papers indexed by Scopus, mainly in CAD/CAM and advanced manufacturing. He has served as the Editorial Board of the International Journals and currently involved in several international bodies such as, International Association of Engineers (IAENG), Senior member of the Science and Engineering Institute (SCIEI), The World Academy of Science, Engineering and Technology (WASET) Scientific and Technical Committees, editorial & reviewers' boards on Natural and Applied Sciences and Senior member of the International Association of Engineering Technology (IAET).

Dr. Morteza Mohammadzaheri

*Assistant Professor,
Department of Mechanical and Industrial Engineering,
Sultan Qaboos University,
AlKhoud, Sultanate of Oman.*

Email:morteza@squ.edu.om & mmzahery@gmail.com

Dr. Morteza Mohammadzaheri received a Ph.D. degree in Intelligent Control Systems, from University of Adelaide, Australia, in 2011. Currently, his main research interest is vibration-based structural health monitoring using AI. He has many publications in The Journal of Engineering Research, Smart Materials and Structures, Asian Journal of Control, Journal of Mechanical Science and Technology. He is an editorial board member of International Journal of Mechanical Engineering and Applications and Open Journal of Modelling and Simulation, International Journal of Artificial Intelligence & Applications, Journal of Innovative Ideas in Engineering and Technology, International Journal of Advanced Engineering

Sciences and Applications, Petroleum & Petrochemical Engineering Journal and International Journal of Applied Science, Engineering and Advanced Research.

Dr. Qingzhen Bi

Professor,

*School of Mechanical Engineering, Shanghai Jiao Tong University,
Shanghai, China*

Email: biqz@sjtu.edu.cn

Dr. Qingzhen Bi's research interesting includes machine tool design, machine tool inspection, machining process modelling and intelligent machining control. He has published about 30 papers in the top journal of advanced manufacturing technology, such as The International Journal of Advanced Manufacturing Technology, International Journal of Machine Tools and Manufacture and ASME Journal of Manufacturing Science and Engineering. He is also the member of reviewing committee of International Journal of Machine Tools and Manufacture.