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Advancing the future of intelligent mechatronic systems: a vision for mechatronics technology

Ruqiang Yan

School of Mechanical Engineering, Xi'an Jiaotong University, China; E-mail: yanruqiang@xjtu.edu.cn

It is my great honor to assume the role of Editor-in-Chief (EiC) of *Mechatronics Technology*. I would like to express my sincere appreciation to the founding EiC – Prof. Hamid Reza Karimi, the editorial team, authors, reviewers, and readers whose dedication and support have laid the foundation for the journal's continued growth. *Mechatronics Technology* was established as an international, interdisciplinary, peer-reviewed, and gold open access journal dedicated to disseminating advances in sensing, signal processing, modeling, control, actuation, and intelligent system integration across a broad range of engineering applications. The journal covers diverse topics including sensors and actuators, measurement and instrumentation, digital twins, artificial intelligence, robotics, autonomous systems, advanced manufacturing, energy systems, fault diagnosis, healthcare technologies, and intelligent electromechanical systems. By embracing this broad scope, the journal aims to serve as a platform where researchers from different disciplines can exchange ideas and contribute to the advancement of next-generation mechatronic systems.

As the new Editor-in-Chief, I envision *Mechatronics Technology* evolving from a multidisciplinary publication into a leading international forum for system-integrated intelligence. The future of mechatronics will not be defined by isolated advances in hardware or software alone. Rather, it will be characterized by the seamless integration of physical systems and intelligent algorithms, where sensing, modeling, control, and decision-making are co-designed to achieve levels of autonomy, efficiency, reliability, and adaptability that were previously unattainable.

To support this vision, the journal will place increasing emphasis on four interconnected research pillars:

Foundations of Mechatronic Systems, including advanced sensing, actuation, instrumentation, modeling, system identification, and digital integration technologies;

Intelligence-Enabled Mechatronic Systems, encompassing artificial intelligence, machine learning, hybrid physics–data methodologies, prognostics and health management, reliability engineering, and embedded intelligence;

Control and Autonomous Systems, covering advanced control theories, autonomous operation, human–machine collaboration, distributed systems, and intelligent decision-making;

Engineering Domain Applications, including manufacturing, robotics, energy systems, transportation, aerospace, marine systems, biomedical engineering, and other emerging application areas.

At the same time, maintaining high scholarly standards will remain a top priority. We seek contributions that provide clear methodological innovation, rigorous validation, reproducible findings,

and demonstrable engineering significance. Incremental algorithmic modifications or narrowly focused component-level improvements without clear system-level contributions are unlikely to meet the expectations of the journal. Our objective is to publish work that advances the state of the art while creating lasting value for both academia and industry.

The success of a journal depends on the collective efforts of its community. I invite researchers, practitioners, reviewers, and editorial board members worldwide to actively participate in shaping the future of *Mechatronics Technology*. Through collaboration, innovation, and scientific excellence, we can establish the journal as a premier venue for the dissemination of impactful research in mechatronics and intelligent engineering systems.

I look forward to working with all of you in this exciting journey.

Ruqiang Yan
Editor-in-Chief
Mechatronics Technology