Foreword

Toshiyuki Hayase

Institute of Fluid Science,
Tohoku University, Japan
2-1-1 Katahira, Aoba-ku,
Sendai 980-8577, Japan
Email: hayase@ifs.tohoku.ac.jp

Biographical notes: Toshiyuki Hayase graduated at the Master course in Graduate School of Engineering, Nagoya University in Mechanical Engineering in 1980, and became a Research Associate in the same university. He was an Associate Professor of the Institute of Fluid Science, Tohoku University in 1990, and a Professor since 2000, and a Director from 2008 to 2014. His research interest is measurement-integrated simulation of complex flow problems. He is a Fellow of Japan Society of Mechanical Engineers (JSME) and a member of Japan Fluid Power System Society (JFPS) and Society of Instrument and Control Engineers (SICE).

Hydromechatronics technology is one of the indispensable key technologies in the new round of industrial revolution with information technology and intelligent manufacturing as the core areas. Existing academic journals in this field, however, mainly focus on the theory and technology in mechanics, mechatronics or hydraulics independently, without the coverage of whole hydromechatronics. *International Journal of Hydromechatronics* (*IJHM*) has been established to provide an effective international academic platform for the scholars and technicians engaged in hydromechatronics in worldwide community. IJHM will provide a multidisciplinary forum for the publication of the latest research results in the integrated field of hydraulic, mechanical, and electrical engineering. Aspects involving the interaction phenomena between hydraulics and mechatronics, hydraulic elements integrated with mechatronic systems and vice versa will be covered, with emphasis on the application of hydromechatronics for the enhancement or creation of new functionalities for hydraulic or mechatronic components, devices, products and systems. The journal will provide significant new findings in the theory and methods, and innovative application of hydromechatronics, promote the scientific research, strengthen the academic exchanges, boost the technological progress, and serve our society.

International Journal of Hydromechatronics covers wide areas such as hydromechatronics technology and application; automation and control systems, robotics research; industrial engineering (manufacturing applications); material science related to hydromechatronics technology. Topics of *IJHM* in a wide spectrum in hydromechatronics are hydraulics, pneumatics, functional fluids, mechatronics, fluid mechanics, transmission and control, artificial intelligence, sensors, parameter identification, vibration control, measurement, signal processing, and fault diagnosis.

The journal is published by Inderscience Publishers in Geneva, Switzerland with editorial offices in Olney, UK. Publication of the new journal is handled by the publication department of Chongqing University of Technology, China, in cooperation

with Fluid Control Engineering Specialized Committee of The Chinese Society of Theoretical and Applied Mechanics and Chongqing Real Estate College.

In the first issue of *IJHM*, we invited leading researchers in the field of oil hydraulics from five countries worldwide and leading researchers in the field of mechanical and electrical devices from UK and China. Articles on oil hydraulics in Europe are: an electro-hydrostatic actuator for hybrid active-passive vibration isolation by Centre for Power Transmission and Motion Control, University of Bath, UK; independent metering systems by Institute of Fluid Power, Technische Universität Dresden, Germany, and autonomous energy efficient wheel loader research at Tampere University of Technology, Finland. Research paper from Japan deals with real-time implementation of Kalman filter for unsteady flow measurement in a pipe by Yokohama National University. Review paper concerning academic fluid power research in the USA is given by Center for Compact and Efficient Fluid Power, University of Minnesota. Invited papers on mechanical and electrical devices are the influence of rolling bearing clearances on diagnostic signatures based on a numerical simulation and experimental evaluation by Chongqing University, China, and a pin-moment model of flexoelectric actuators by University of Huddersfield, UK.

I sincerely appreciate the distinguished researchers on hydromechatronics worldwide who supported us to publish the first issue of the journal by giving valuable comments and, especially, by providing their state-of-the-art research papers. I also thank Editor-in-Chief Prof. Zhou Xiong with Chongqing University of Science and Technology, and the staff of the publication department for their excellent management during the publication.