Special Issue on Signal Collection, Processing, and System Integration in Automation Applications 2026 Part 1

Preface



With the rapid progress of industrialization in recent years, a wide variety of automation techniques have been developed and applied in industry. For this reason, signal sensing, measuring, processing, and system integration in automation fields have played a crucial role in industry. This rapid trend is now driving a significant progress beyond traditional mechanization. Furthermore, Industry 4.0 and AI techniques are bringing modern engineering into a new era. Accordingly, more complex problems, such as in automatization, robotics, mechatronics, measurement, and control systems, can be effectively resolved by using signal sensing, data collection and AI processing algorithms more efficiently.

All the papers in this issue are based on novel methodologies and implementations, creative and innovative automation systems, and integrated engineering associated with crucial fields. There are nine papers accepted for publication among four major topics on: 1. AI-driven applications in automation. 2. Signal sensing and processing. 3. Automation control. 4. System integration. Many valuable solutions have been presented covering both theory and applications in the field of sensors and materials.

Hsiung-Cheng Lin
Professor, Department of Electronic Engineering
National Chin-Yi University of Technology, Taiwan

Ming-Te Chen
Associate Professor, Department of Computer Science and Information Engineering
National Chin-Yi University of Technology, Taiwan

Chin-Yi Cheng
Assistant Professor, Department of Mechanical Engineering
National Yunlin University of Science and Technology, Taiwan