Spotlight Editorial: Five Golden Years for Intelligent Automation Technology

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In order to boost Taiwan's industrial competitiveness and respond to future industrial development needs, the Science and Technology Advisory Group held the Executive Yuan Strategy Conference on Development of the Intelligent Automation Industry at the end of last year. This conference drafted an intelligent automation industry development strategy and core industrial technology R&D focal points for the coming five years. This effort will accelerate promotion of the intelligent automation industry as part of the campaign to achieve the transformation of Taiwan's industrial structure and upgrade to high-tech, high added value industries. Emphasis will be placed on R&D, innovative manufacturing, and new service industry models, with the goal of ensuring Taiwan's prosperity over the next decade. **Intelligent automation industry** categories include the manufacturing industry (including both high-tech and traditional firms), the automation products and equipment industry, automation engineering and technical services, intelligent robot industry, service industry, and other industries (such as the energy industry, healthcare, tourist/travel industry, and cultural creativity industry, etc.). **Technologies** connected with intelligent automation include intelligent control, intelligent sensing and testing, intelligent manufacturing, virtual manufacturing, intelligent machinery, intelligent

medicine and healthcare, and intelligent robot technology.

This SPOTLIGHT takes intelligent automation technology as its theme and contains special articles on the three subjects of the intelligent control technology, virtual manufacturing technology, and intelligent medical technology. The invited contributors include domestic professors who have performed notable research in these fields. I hope that the content of this SPOTLIGHT will introduce some of the newest intelligent automation research results for the readers of International Journal of Automation and Smart Technology (auSMT). The articles in this SPOTLIGHT section include **Prof. Jyh-Horng Chou's** Application of Intelligent Evolutionary Algorithms in Optimized Automation System Design; **Prof. Rong Shean Lee's** Motion and Physical Cutting Simulation System for a Five-Axis Virtual Machine Tool, which deals with virtual manufacturing technology; and **Prof. Yeong-Hwa Chang's** Design and Development of a Medical Augmented Reality Force Feedback Virtual Surgery Training Platform concerning intelligent medical technology. I would like to thank these professors for taking the time out of their busy schedules to help write on these areas. Unfortunately, because of restrictions on the number of articles that could be published, many important topics and outstanding research results could not be included; we would like to apologize to all the professors affected.

The intelligent automation industry will receive the government's strategic assistance during the next five years, and the National Science Council and Department of Industrial Technology will bear joint responsibility for implementing core industrial technology R&D. In addition, automation experts and researchers will play an important role in relevant technology R&D. Finally, industry-academia collaborative projects will help transfer specialized technologies to industry, boosting industrial competitiveness. 🦉

Min-Hsiung Hung was born in Changhua County, Taiwan, on September 9, 1966. He received the B.S. degree from Chung Cheng Institute of Technology (CCIT), Taoyuan, Taiwan, the M.S. degree from National Cheng Kung University, Tainan, Taiwan, and the Ph.D. degree from The Ohio State University, Columbus, Ohio, U. S. A., in 1988, 1992, and 1999, respectively, all in electrical engineering. He was with the Department of Electrical Engineering, CCIT, as a Lecturer in 1992, and was promoted to Associate Professor and Professor in 2000 and 2006, respectively. He also served as the Chairman of the Department of Electrical and Electronic Engineering, CCIT, National Defense University (NDU), Taiwan, from September 2007 to August 2009, and as the Dean of School of Defense Science, CCIT, NDU, between September 2009 and July 2010. Currently, he is a Professor of the Department of Computer Science, Chinese Culture University, Taipei, Taiwan. His expertise is in the fields of e-Manufacturing, e-Diagnostics, Virtual Metrology, RFID and Wireless Sensor Networks, Dynamic Simulation and Control of Mobile Robots, and Microprocessor and Embedded Systems.