Special Issue on Novel Sensors and Related Technologies on IoT Applications: Part 1-1

Preface

In recent years, applications of novel sensors and related technologies in electronic and mechanical devices have become rapidly developing fields. Manufacturing is the economic lifeline of a country and has been regarded as a labor-intensive industry. Therefore, to cut production costs, devices for the internet of things (IoT) have been widely developed. IoT is composed of most integrated end devices and facilities, such as intelligent sensors for internal control, industrial systems, mobile terminal systems, floor control systems, and home intelligent facilities. Smart devices and external control information are utilized with the hope of attracting companies that manufacture high-value-added products in the fields of aerospace, automotive, IT molds, textiles, optoelectronics, watches, medical devices, automation, energy, and semiconductor-related parts and components to drive the country's economy. Therefore, the key to maintaining a competitive advantage in domestic manufacturing in the future is still to rely on the development of novel manufacturing and precision machinery-related technologies. The scope of this Special Issue, "Novel Sensors and Related Technologies on IoT Applications" covers fundamental sensors and materials used in electronic, mechanical, and electrical engineering including their synthesis and integration with many elements, the design of electronic and optical devices, sensing technologies, evaluation of various performance characteristics, and exploration of their broad applications to industry, environmental control, materials analyses, and so forth. Part 1-1 of this special issue selects 8 excellent papers about three categories of sensors and materials fields:

(1) Physical/Mechanical Sensors: "Wi-Fi 6E Antenna Design for All-metal Housing of Notebook" presented by Chien *et al*.

(2) Bio/Chemical Sensors: "Time Series and Mel-frequency Cepstrum Coefficient Analyses of Venous Pulsatile Tinnitus Vascular Sound and Flow Velocity Sensed by Transcranial/Retroauricular Doppler Ultrasound Approaches" presented by Hsieh *et al.* and "Adaptive Region of Interest Detection Method for Liver Cancer Image Based on Convolutional Neural Network for Biochemical Sensing System" presented by Gu.

(3) Related Technologies: "Recognition System for Cantonese Speakers in Different Noisy Environments Based on Estimate–Maximize Algorithm" presented by Fan et al., "Automatic System for Detecting Student Attendance in College Classroom Based on Template Matching

Method and Cellphone Storage Hanging Pocket" presented by Lv *et al*., "Parameter Combination Optimization in Three-Dimensional Convolutional Neural Networks and Transfer Learning for Detecting Alzheimer's Disease from Magnetic Resonance Images" presented by Lin *et al*., "Arrhythmia Detection Using a Taguchi-based Convolutional Neuro-fuzzy Network" presented by Li *et al*., and "Liquid Level Intelligent Detection for Oil Tank Based on Empirical Mode Decomposition and Deep Belief Network" presented by Zhao.

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