Special Issue on Novel Sensors and Related Technologies on IoT Applications: Part 4-1

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 4-1 of this special issue selects 10 excellent papers about two categories of sensors and materials fields:

(1) Physical Mechanical Sensors: "Diagnosis of Nonlinear Lamb Wave Characteristics of Closed Microcrack in Plates" presented by Zhang *et al*., "Using ANSYS Workbench as a Tool to Simulate and Analyze the Effects of Different Loads on Single-layer Reticulated Aluminum Domes" presented by Bakhtiar *et al*., and "Reliability Computation of Piezoelectric Actuator Embedded in Flexible Smart Rectangle Cantilever Beam under Complex Gust Load" presented by Fang *et al*.

(2) Related Technologies: "Multi-objective Game Learning Algorithm Based on Multi-armed Bandit in Underwater Acoustic Communication Networks" presented by Wang and Yang, "Design

and Analysis of an AC/DC Charger with High Power Factor andHigh Efficiency" presented by Tsai and Peng, "Application of Wireless Sensor Network Based on Improved Genetic Algorithm in Bridge Health Monitoring" presented by Ni *et al*., "Spatial and Temporal Distribution Characteristics of Electric Vehicle–Grid Interaction Scheduling Using Cluster Optimization" presented by Huang, "Hybrid Chaotic Keystream Generator Based on Dawson's Summation Generator" presented by Wu, "State of Charge Estimation of Electric Vehicle Power Batteries Enabled by Fusion Algorithm Considering Extreme Temperatures" presented by Xu and Ran, and "Using Edge Computing Technology in Programmable Logic Controller to Realize the Intelligent System of Industrial Safety and Fire Protection" presented by Su *et al*.

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