Special Issue on "Applications of Novel Sensors and Related Technologies for Internet of Things" Part 1-3

Preface

In recent years, applications of novel sensing and related technologies to electronic and mechanical devices have become very popular fields. The booming economic development in Asia, particularly the leading manufacturing industries from automobile, machinery, computer, communication, consumer products, and flat-panel displays to semiconductor and micro/nano applications have attracted intense attention from universities, research institutions and many industrial corporations. Manufacturing is the economic lifeline of a country and has been regarded as a labor- intensive industry. In order to cut production costs, devices for the Internet of Things have been widely developed. The Internet of Things is composed of 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 aerospace, automotive, IT mold, textiles, optoelectronic, watches, medical device, automation, energy, and semiconductor-related parts and components fields Therefore, the key to maintaining a competitive advantage in domestic manufacturing in the future is to continue to rely on the development of novel manufacturing and precision machinery-related technologies.

The scope of this Special Issue, entitled "Applications of Novel Sensors and Related Technologies for Internet of Things", 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 wide-ranging applications in areas such as industry, environmental control, and materials analyses. In part 1-3 of this special issue, 9 excellent papers in three categories of sensors and materials fields have been selected.

(1) Physical Mechanical Sensors: "Optical Projection System Design for Both Distant and Near Eye Charts" by Huang *et al.* and "Data Analyses of Structural Parameters Impacting the Sensing Characteristics of Single-axis Accelerometers" by Tsai *et al.*

(2) Related Technologies: "Finite Element Deformation Analysis of Fuel Cell Metal Bipolar Plate with Distorted Design Features" by Chen *et al.*, "Building a Rehabilitation Walking Behavior Pattern Analysis System in Living Environments" by Cheng *et al.*, "Performance of Media Access Control Protocol in Multi-hop Wireless Sensor Networks for Bridge Detection Systems" by Ni *et al.*, "Lossless Data Compression of Wireless Sensor in Bridge Inspection

System" by Ni *et al.*, "Application of 3D Convolutional Neural Networks for Continuous Motion Identification and Behavioral Safety Analysis of Factory Roll Cutting Machine Operators" by Lin *et al.*, and "Investigation into Virtual Reality Using the Unified Theory of Acceptance and Use of Technology as a Basis" by Tan.

(3) Sensor Applications: "Smart-sensors-based Medicine Identification System" by Kuo *et al.*

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