SPECIAL ISSUE ON NOVEL MATERIALS AND SENSING TECHNOLOGIES ON ELECTRONIC AND MECHANICAL DEVICES PART 3(1)

PREFACE

In recent years, applications of novel materials and sensing 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 Internet of Things (IoT) are widely developed. IoT is composed of the 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 to attract companies that manufacture high-value-added aerospace, automotive, IT mold, textile, optoelectronic, watch, medical, defense-related, automation, energy, and semiconductor-related parts and components to drive a country's economy. Therefore, the key to keeping up with the competitive advantage of domestic manufacturing in the future is still to rely on the development of advanced manufacturing and precision machinery-related technologies. The scope of this Special Issue "Novel Materials and Sensing Technologies on Electronic and Mechanical Devices" covers fundamental materials of electronic, mechanical, and electrical engineering, including their synthesis engineering, integration with many elements, designs of electronic or optical devices, evaluation of various performance characteristics, and exploration of their broad applications to industry, environmental control, materials analyses, and so forth. Part 3(1) of this special issue selects 14 excellent papers about four categories of sensors and materials fields:

(1) Physical/Mechanical Sensors: "Electric Podded Propulsor Propeller with Control Algorithm of Boat Based on Data Processing from Sensors" presented by Li *et al*. and "Household Goods Recognition Using Hierarchical Multi-object Segmentation" presented by Wang *et al*.

(2) Materials: "Effects of Sintering Temperature on Structural, Morphological, and Mechanical Properties of Co-Cr-Mo Alloys Coated with ZrO_2 Ceramic Films" presented by Huang *et al*.

(3) Related Technologies: "Intelligent Identification Technology of Attributes of Users' Transformers Based on Gray Correlation Analysis" presented by Liu *et al*., "Smart Earthquake Disaster Prevention System" presented by Fan *et al*., "Battery Energy Storage System for Frequency Regulation of Isolated Island Microgrid" presented by Hsu *et al*., "Implementation of Feeder Automation Using Colored Petri Nets" presented by Lin *et al*., "Hybrid Algorithm Based on Simulated Annealing and Bacterial Foraging Optimization for Mining Imbalanced

Data" presented by Lee *et al.*, "Investigation of Low-cost Cash Register Management System with Electronic Scale and Cloud Connection" presented by Cai *et al.*, "Rapid Local Image Style Transfer Method Based on Residual Convolutional Neural Network" presented by Huang *et al.*, "Network Flow Queuing Delay Prediction for City Public Services Based on Long Short-term Memory" presented by Zhang *et al.*, and "Proposed Model for Performance Analysis of Fourth-generation Mobile Wireless Communication System" presented by Li *et al.*

(4) Sensor Applications: "Strengthening Existing Internet of Things System Security: Case Study of Improved Security Structure in Smart Health" presented by Chang and Hung and "Platform for Simulating Six-rotor Unmanned Aerial Vehicle" presented by Tsai *et al.*

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