SPECIAL ISSUE ON NOVEL MATERIALS AND SENSING TECHNOLOGIES ON ELECTRONIC AND MECHANICAL DEVICES PART 3(2)

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(2) of this special issue selects 11 excellent papers about three categories of sensors and materials fields:

(1) Physical/Mechanical Sensors: "New Design of Compressor Blade with Moderate Material Properties for Performance Optimization" presented by Song *et al.* and "Simulation and Modal Analysis of Marine Diesel Engine Based on Finite Element Model and Vibration Sensor Data" presented by Liao *et al.*

(2) Related Technologies: "Wireless Body Area Network Auxiliary Relief Mechanism Based on Uneven Population Clustering and Rescue Request Information Diffusion Strategy" presented by Jiang *et al.*, "Proxy Signature for Sensor Networks against Cyber Attack" presented by Zheng *et al.*, "Hole Filling in Image Conversion Using Weighted Local Gradients" presented by Lee *et al.*, "Flow Control of Proton Exchange Membrane Fuel Cell With Theory of Inventive Problem Solving (TRIZ)" presented by Chuang *et al.*, "Application of Zadoff–Chu Sequences in Throughput Balancing Control of Self-organizing Long Term Evolution Communication

Network" presented by Lu *et al.*, "Integral-stiffness-based Optimization Method for Designing a Computer Numerically Controlled Grinding Machine" presented by Wang *et al.*, and "Reducing Raw Emissions from a Gasoline Direct Injection Engine via Sensor-aware Diluted Combustion" presented by Yan *et al.*

(3) Sensor Applications: "Multifunctional Bicycle Helmet Using Internet of Things Technology" presented by Tsai *et al.* and "Smart Home Power Management Based on Internet of Things and Smart Sensor Networks" presented by Chen *et al.*

The guest editors would like to thank the authors for their contributions to this special issue and all the reviewers for their constructive reviews. We are also grateful to Ms. Misako Sakano for her time and efforts in the publication of this special issue for *Sensors and Materials*.

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