

## SPECIAL ISSUE ON NOVEL MATERIALS AND SENSING TECHNOLOGIES ON ELECTRONIC AND MECHANICAL DEVICES PART 4(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 4(2) of this special issue selects 11 excellent papers about five categories of sensors and materials fields:

- (1) Physical/Mechanical Sensors: "Monitoring of Valve Gap in Diesel Engine Based on Vibration Response Feature Extraction" presented by Huang *et al.*
- (2) Bio/Chemical Sensors: "Epidemiological and Molecular Investigation of Multilocus Genotype of *Enterocytozoon bieneusi* Using Nested Polymerase Chain Reaction Sensor" presented by Fan *et al.*
- (3) Materials: "Material and Characteristics Analysis of a Carbon Fiber Badminton Shuttle by Using a Wind Tunnel" presented by Yeh and Chen.
- (4) Related Technologies: "Deep Convolutional Neural Network for Coffee Bean Inspection" presented by Wang *et al.*, "Optimal Pricing Based on Real-time Monitoring of Hotel Information" presented by Chen *et al.*, "Imaging of Rough Surfaces by Near-field Measurement" presented by Chien *et al.*, "Smart Rural E-Bus System Using Global Radio (GloRa)" presented

by Lin *et al.*, “Cyclonic Motion and Structure in Rotating Tank: Experiment and Theoretical Analysis” presented by Chen *et al.*, and “Fatigue Tests and Fracture Behavior Analysis of Porous Implant Materials Fabricated by 3D Metal Printing Technology” presented by Hu *et al.*  
(5) Sensor Applications: “Establishing a Screening System of Indoor Air Pollutants Using MEMS Sensor to Create Internet of Things Sensing Platform” presented by Yadav *et al.*, and “Fiber Bragg Grating Inclinator-enabled IoT Sensing System with Low Power Consumption and Small Size” presented by Cui *et al.*

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Teen-Hang Meen  
Distinguished Professor, Department of Electronic Engineering  
National Formosa University, Taiwan

Wenbing Zhao  
Professor, Department of Electrical Engineering and Computer Science  
Cleveland State University, USA

Hsien-Wei Tseng  
Professor, College of Artificial Intelligence  
Yango University, China