

SPECIAL ISSUE ON NOVEL SENSORS AND RELATED TECHNOLOGIES ON IOT APPLICATIONS: PART 2-2

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 2-2 of this special issue selects six excellent papers about four categories of sensors and materials fields:

- (1) Physical Mechanical Sensors: "Performance Analysis of a Propeller with Surface Protrusions" presented by Song *et al.* and "Development of Automated Optical Inspection and Classification Systems" presented by Tsai *et al.*
- (2) Bio/Chemical Sensors: "Self-tuning Integral-type Finite-time-stabilized Sliding Mode Control for State Synchronization of Coronary Artery Systems" presented by Yang *et al.* and "Prediction of Nitrite Content of Pickled Okra with *Lactobacillus plantarum* Using Sensors and by Numerical Simulation Based on Artificial Intelligence" presented by Chen *et al.*

(3) Materials: “Molecular Dynamics Simulation of Thermomechanical Properties of Hollow Palladium Nanoparticle Pairs during Additive Manufacturing” presented by Lai *et al.*

(4) Related Technologies: “Multi-objective Slime Mold Algorithm: A Slime Mold Approach Using Multi-objective Optimization for Parallel Hybrid Power System” presented by Zhu *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 on the publication of this special issue for *Sensors and Materials*.

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

Cheng-Fu Yang

Professor, Department of Chemical and Materials Engineering
National University of Kaohsiung, Taiwan