

SPECIAL ISSUE ON NOVEL SENSORS AND RELATED TECHNOLOGIES ON IOT APPLICATIONS: PART 3-2

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 3-2 of this special issue selects eight excellent papers about three categories of sensors and materials fields:

- (1) Physical Mechanical Sensors: "Optimization of Displacement by Fluid–Solid Coupled Vibration of Hydraulic Hoses" presented by Lan *et al.*
- (2) Related Technologies: "Important Elements of Sensor Technology and Data Management and Related Education" presented by Chan *et al.*, "Design and Research of Campus Culture Application Based on Sensor Data and Metaverse Technology" presented by Han *et al.*, "Development of Earthquake Detection and Warning System Based on Sensors" presented by Chen *et al.*, "Structural Design Optimization of Movable-column Horizontal Machining Center

Based on Integral Stiffness Analysis and Sensor Measurement” presented by Wang and Yang, and “Design and Implementation of Charging and Discharging Management System for Two-set Lithium Ferrous Phosphate Batteries” presented by Tsai and Peng.

(3) Sensor Applications: “Wireless Mesh Network and Its Application in Sports Agility Tests” presented by Tan *et al.* and “Research on Non-line-of-sight Collision Avoidance Warning Using the Vehicle-to-vehicle Communication System in 5G Mobile Communication Network” presented by Lu *et al.*

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