

SPECIAL ISSUE ON APPLICATIONS OF NOVEL SENSORS AND RELATED TECHNOLOGIES FOR INTERNET OF THINGS: PART 2-1

PREFACE



In recent years, applications of novel sensing and related technologies to electronic and mechanical devices have become very popular fields. The booming economic development in Asia, particularly the leading manufacturing industries from automobile, machinery, computer, communication, consumer products, and flat-panel displays to semiconductor and micro/nano applications have attracted intense attention from universities, research institutions and many industrial corporations. Manufacturing is the economic lifeline of a country and has been regarded as a labor-intensive industry. In order to cut production costs, devices for the Internet of Things have been widely developed. The Internet of Things is composed of 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 aerospace, automotive, IT mold, textiles, optoelectronic, watches, medical device, automation, energy, and semiconductor-related parts and components fields. Therefore, the key to maintaining a competitive advantage in domestic manufacturing in the future is to continue to rely on the development of novel manufacturing and precision machinery-related technologies.

The scope of this Special Issue, entitled “Applications of Novel Sensors and Related Technologies for Internet of Things”, 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 wide-ranging applications in areas such as industry, environmental control, and materials analyses. In part 2-1 of this special issue, 9 excellent papers in three categories of sensors and materials fields have been selected.

- (1) Materials: “Performance Enhancement of Chlorine-doped ZnO Nanorod as Piezoelectric Nanogenerators” by Lin *et al.*, and “Microstructure and Optical and Piezoelectric Properties of Polyvinylidene Fluoride/ZnO Nanowires for Tactile Sensors” by Kao *et al.*, and “Effects of Multiwalled Carbon Nanotubes and TiO₂ Composites of Different Concentrations on Characteristics of Dye-sensitized Solar Cell” by Hsu *et al.*
- (2) Related Technologies: “Text-independent Hakka Speaker Recognition in Noisy Environments” by Peng *et al.*

(3) Sensor Applications: “Hyperspectral Information Detection and Global-view Net for Enhanced Classification of Mold Stages in Cigarette Tobacco” by Liu *et al.*, and “Air Quality Monitoring and Controlling System Using Dust Sensor” by Chen *et al.*, and “Greenhouse for Effective Agriculture with Electricity Generation and Water Collection Systems” by Chen *et al.*, and “Construction of an Evaluation Index System for High-quality Development of Discipline Construction in Tertiary Public Hospital” by Huang *et al.*, and “Creating a Safe Living Environment for the Elderly Using Smart Devices” by Yang *et al.*

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