
Editorial

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Biographical notes: Mu-Chun Wang received his BS degree at the National Chung-Tung University in Taiwan in 1986 and his Master and PhD in Electrical Engineering from the Texas A&M University in 1992 and 1995, respectively. He is presently a Full Professor of Electronic Engineering at the Minghsin University of Science and Technology (MUST), Hsinchu, Taiwan and the Director of the Chip Research Center of MUST. Prior to joining MUST's Faculty in 1995, he was employed by Vanguard International Semiconductor Corporation (VIS) as a Senior Device Engineer and United Microelectronics Corporation (UMC) as a Semiconductor Device Manager. He has already published over 320 journal and conference papers, obtained over 52 USA or Taiwan patents. His current interests involve micro/nano semiconductor device and process, package, reliability, ESD/latchup, RF circuit design, TFT display, and fibre-optic sensors.

Xiaofeng Zhao received his PhD at the Heilongjiang University in 2008. Currently, he works in the Department of Electronics and Engineering of Heilongjiang University, Harbin, China as a Professor, Master Supervisor and Young Academic Backbone Teacher of Heilongjiang Province. He is interested in nanomaterials and nanodevices, sensor and micro electromechanical systems (MEMS). He is in charge of the project of National Natural Science Foundation of China and has published more than 20 research papers which are included in SCI, EI and so on.

Nanoscience is the engineering of functional systems at the molecular scale, and has become an emerging and rapidly expanding discipline in the past decade. Nanomanufacturing is a hot research topic in the nanoscience domain at present. Nanomanufacturing differs from molecular manufacturing, which is the manufacture of complex, nanoscale structures by means of non-biological mechanosynthesis. Active research areas include MEMS, NEMS, nanotube/nanowire devices, etc. This special issue will mainly focus on micro and nano manufacturing technology and management. Finally, three papers were selected for publication after a rigorous review process, which covers MEMS, NEMS, and nanotube/nanowire devices.

'Effect of SiO₂ nanoparticles on the thermal properties of dielectric composite films', by Lei Yao, Lu Chen, Yuqiang Chen and Xiaoxiao Sun, has studied the influence of SiO₂ nano-particles on the thermal properties of polyimide (PI) composite films, the experimental data of nanocomposite films with changing heat is determined by thermal-gravimetric analysis (TGA) and differential thermal analysis (DTA). Doping SiO₂ nano-particles is one of important reasons to improve the thermal properties of composite films.

'Design practices used in the development of microfluidic devices: a services-based view', by Katarzyna Panikowska, Ashutosh Tiwari, Jeffrey Alcock and Christopher Turner, presents the current state of microfluidic design from a practitioners perspective and research in the development of a formal design methodology for microfluidics.

'The microstructure and property study of tri-layer polyimide/Al₂O₃ nanocomposite films' by Hui Shi, Lizhu Liu, Ling Weng and Weiwei Cui, has prepared a 'sandwich' structure polyimide/nano-Al₂O₃ composite films. Comparing to the mono-layer composite films, tri-layer PI/Al₂O₃ nano-composite films have a great deal of improvement in the tensile strength and elongation at break. The tri-layer PI/Al₂O₃ nano-composite films have performed the better electric breakdown strength than that of pure films.

We would like to take this opportunity to thank the authors for the efforts they put in the preparation of the manuscripts and for their valuable contributions. We wish to express our deepest gratitude to the reviewer for their help in selecting papers for this issue and especially the referees of the selected papers for their thorough reviews under a tight time schedule. Last, but not least, our thanks go to the editorial board of the *International Journal of Manufacturing Technology and Management* for the exceptional effort they did throughout this process. In closing, we sincerely hope that you will enjoy reading this special issue.