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Description:	<p>Smart Materials are materials that can respond to environmental stimuli by exhibiting particular changes in some of their properties. Depending upon the change in some external condition, a smart materials can change its own characteristics (mechanical, electrical, appearance), structure, composition and/or response. These materials are usually embedded into systems whose inherent properties change favourably in order to meet performance needs.</p> <p>By integrating sensors and actuators into structures, real-time monitoring of potentially damaging structural responses within large-scale infrastructures becomes possible. Such responses might include, for example, fatigue cracks, degradation of structural connections or bearing wear in rotating machinery. Over the past decade, there has been increasing interest in the development of miniature smart structures and systems; particularly micro- and nano-systems (MEMs and NEMs). Integrated biosensor systems have opened a new chapter in the fields of science and engineering. This evolution has establishes the need to integrate technologies from different disciplines in order to provide structural health monitoring for materials, systems, devices and structures at the micro-scale level in order to ensure their integrity. Multi-functional materials systems are capable of performing multiple "primary" functions simultaneously or sequentially in time, and have been specifically developed to improve system performance by reducing the redundancy between sub-system materials and functions.</p> <p>The present 376 papers are the cream of 650 submitted abstracts, selected after rigorous review, and focus mainly on the front-line research work done by the various authors. They therefore represent the best current guide to the 'state-of-play' in this field.</p>
TOC:	Table of Contents
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Effects of EPON on Mechanical and Thermal Properties of Epoxy Resins 	p536
<i>H. Ku, F. Cardona, D. Rogers, A. Vandenbroucke</i>	
Microstructure and Tribological Performance of a-CN_x/TiN_x Composite Films	p540
Prepared by Pulsed Laser Deposition	
<i>X.H. Zheng, Jiang Ping Tu, Ren Guo Song</i>	
The Preparation and Application of Shell Powder in UHMWPE-Fiber	p545
Unidirectional Plate 	
<i>Shu Jia Liu, Xiao Juan Si, Wei Li, Yi Min Wang, Alan Kin Tak Lau</i>	
Effects of Temperature on Microstructure and Tribological Performance of a-	p549
CN_x Films Prepared by Pulsed Laser Deposition	
<i>X.H. Zheng, Jiang Ping Tu, Hong Xia Li, Ren Guo Song</i>	
Structure and Mechanical Properties of Ceramic Coatings Fabricated by Micro-	p554
Arc Oxidation	
<i>Hong Xia Li, Ren Guo Song, J. Zhao</i>	

Fabrication of Poly(diphenylsilylenemethylene) Matrix Nanocomposite Thin Films by Laser Ablation  <i>Ren Guo Song, Fang Er Yang, Xiao Hong Weng, Wang Zhao He</i>	p558
Synthesis and Properties of Barium Strontium Titanate Thin Films on Copper Foils  <i>Yan Hua Fan, Shu Hui Yu, Rong Sun, Lei Li, Ru Xu Du, Yan Sheng Yin, Ying Bang Yao</i>	p562
Carbon Foam with High Strength and High Thermal Conductivity Doped by Nano-Titanium  <i>Yong Wang, Ling Ling Cao, Yi Min Wang</i>	p566
Structure, Magnetic and Transport Properties of Mn_xGe_{1-x}  <i>Shuang Qiao, Deng Lu Hou, Qian Zhang, Cong Mian Zhen</i>	p570
Asymptotic Derivation of a Curved Piezoelectric Interface Model and Homogenization of Piezoelectric Composites  <i>S.T. Gu, Qi Chang He, Vincent Pensée, J.Z. Zhou</i>	p575