

Table of Contents

Preface

Chapter 1: Magnetic Sensors

Influence of the Length-to-Width Ratio on the ΔE Effect of Amorphous Magnetoelastic Ribbons for Actuation Applications	
A. Sagasti, M. Llano, A. Lasheras, A.C. Lopes, J. Feuchtwanger and J. Gutierrez	3
$\text{Fe}_x\text{Ni}_{100-x}$ Thin Film Systems with Slight Deviations from Zero Magnetostriction Compositions: Focus on Pressure Sensor Applications	
A.A. Chlenova, I.P. Novoselova, R. Salikhov, M. Farle, V.N. Lepalovskij, J. Totoricaguena Gorriño and G.V. Kurlyandskaya	11
Load Matching for Giant Magnetoimpedance Sensor in Coaxial Configuration	
S.V. Shcherbinin, S.O. Volchikov, A.A. Chlenova and G.V. Kurlyandskaya	19
Magnetic Particles Retaining on Open and Closed Systems	
G. Banis, E. Mangiorou, P. Tselou, A. Ferraro and E. Hristoforou	25

Chapter 2: Mechanical Sensors

Graphene Reinforced Composites as Sensing Elements	
R. Singh, R. Kumar, A. Amendola, I. Farina, N. Singh and F. Fraternali	33
On the Optimal Design of Metal Matrix Composites as Functionally Graded Innovative Materials for Sensor Devices	
N. Singh, R. Singh, I.S. Ahuja and I. Farina	45

Chapter 3: Gas, Chemical and Bio Sensors

Platinum Porphyrin -Au-NPs Hybrid Material for Optical Detection of Hydrocortisone	
A. Lascu and E. Fagadar-Cosma	57
Modeling of Interdigital Electrodes Geometrical Parameters Effects on Chemical Sensor Response	
K. Dallah, A. Bellel, O.C. Lezzar, S. Sahli and P. Raynaud	67
CAD-CAM Assisted Design and Preparation of Biocompatible Sensors and Transducers with Variable Microstructure	
R. Singh, R. Singh, J.S. Dureja, N. Singh and I. Farina	73
The Redox and Optical Response of the Electrogrowth Film from a Mixture of 2,5-Bis[4-(<i>p</i>-Aminophenoxy)Phenylene]-1,3,4-Oxadiazole and Fluorene	
M.D. Damaceanu	81
The Chromic Response to Environment of some Imine-Based Oligomers	
C.P. Constantin, A.E. Bejan and M.D. Damaceanu	91

Chapter 4: Actuators and Sensors Application

Novel Actuators and Sensors with Tensegrity Architecture	
F. Fraternali and A. Amendola	105
Motion Prediction with Artificial Neural Networks Using Wearable Strain Sensors Based on Flexible Thin Graphite Films	
T. Kanokoda, Y. Kushitani, M. Shimada and J.I. Shirakashi	111
Application of Thermal Sensors for Determination of Mass Flow Rate and Velocity of Flow in Pipes of Hermetic Systems	
Y. Baidak and I. Vereitina	117