Table of Contents

Preface......................................................................................................................................................... xviii

Chapter 1
Sensing Coverage in Three-Dimensional Space: A Survey ................................................................. 1
   Habib M. Ammari, Norfolk State University, USA
   Adnan Shaout, University of Michigan – Dearborn, USA
   Fatme Mustapha, University of Michigan – Dearborn, USA

Chapter 2
Multi-Sensor Data Fusion (MSDF) ........................................................................................................ 29
   Gouranga Charan Jena, KIIT University, India

Chapter 3
Connected Dominating Set in Wireless Sensor Network................................................................. 62
   Jasaswi Prasad Mohanty, Indian Institute of Technology Kharagpur, India
   Chittaranjan Mandal, Indian Institute of Technology Kharagpur, India

Chapter 4
Routing Protocols in Wireless Sensor Networks ............................................................................... 86
   Nagesh Kumar, Jaypee University of Information Technology, India
   Yashwant Singh, Jaypee University of Information Technology, India

Chapter 5
   Carlos Meralto, Instituto Universitário de Lisboa (ISCTE-IUL), Portugal & Instituto de
   Telecomunicações, Portugal
   José Moura, Instituto Universitário de Lisboa (ISCTE-IUL), Portugal & Instituto de
   Telecomunicações, Portugal
   Rui Marinheiro, Instituto Universitário de Lisboa (ISCTE-IUL), Portugal & Instituto de
   Telecomunicações, Portugal
Chapter 6
Energy Aware Optimized Routing Protocols for Wireless Ad Hoc Sensor Network .......................... 156
   Alok R. Prusty, Siksha ‘O’ Anusandhan University, India
   Srinivas Sethi, Indira Gandhi Institute of Technology (IGIT), India
   Ajit Kumar Nayak, Siksha ‘O’ Anusandhan University, India

Chapter 7
Impact of the Structure of the Data Gathering Trees on Node Lifetime and Network Lifetime in Wireless Sensor Networks .................................................................................................................. 184
   Natarajan Meghanathan, Jackson State University, USA

Chapter 8
Design of WSN in Real Time Application of Health Monitoring System ............................................ 197
   Srinivas Sethi, IGIT Sarang, India
   Ramesh K. Sahoo, IGIT Sarang, India

Chapter 9
Performance Evaluation of Quality of Service in IEEE 802.15.4-Based Wireless Sensor Networks 213
   Sanatan Mohanty, Silicon Institute of Technology, India
   Sarat Kumar Patra, NIT Rourkela, India

Chapter 10
Spectral Efficiency in Wireless Networks through MIMO-OFDM System ..................................... 249
   Shuvabrata Bandopadhaya, Silicon Institute of Technology, India
   Jibendu Sekhar Roy, KIIT University, India

Chapter 11
Techniques to Enhance the Lifetime of MANET ................................................................................ 278
   Suchismita Rout, Silicon Institute of Technology, India
   Ashok Kumar Turuk, National Institute of Technology Rourkela, India
   Bibhudatta Sahoo, National Institute of Technology, India

Chapter 12
Security Threats in Wireless Sensor Networks.................................................................................... 307
   Alekha Kumar Mishra, VIT University, India

Chapter 13
Intrusion Detection in MANET for Network Layer............................................................................... 326
   Sambhu Dahal, Biju Patnaik University of Technology, India
   Niranjan K. Ray, Silicon Institute of Technology, India

Chapter 14
Internet of Things Services, Applications, Issues, and Challenges .................................................. 353
   Padmalaya Nayak, GRIET, India
Chapter 15
Security Issues and Challenges in Internet of Things...................................................... 369
Sudhosil Panda, Silicon Institute of Technology, India

Chapter 16
A Comprehensive Study of Security in Cloud Computing............................................. 386
Prasanta K. Manohari, Silicon Institute of Technology, India
Niranjan K. Ray, Silicon Institute of Technology, India

Chapter 17
Energy Efficient Wireless Body Area Network (WBAN).................................................. 413
Prasenjit Maiti, National Institute of Technology Rourkela, India
Sourav Kanti Addya, National Institute of Technology Rourkela, India
Bibhudatta Sahoo, National Institute of Technology Rourkela, India
Ashok Kumar Turuk, National Institute of Technology Rourkela, India

Chapter 18
Empowering IT with Green Computing ......................................................................... 433
Taruna S., Banasthali University, India
Bhumika Pahwa, Banasthali University, India

Compilation of References ............................................................................................. 451

About the Contributors ................................................................................................. 492

Index ................................................................................................................................ 499