

# **CONTENTS**

|   |            |
|---|------------|
| <b>Introduction.....</b>  | <b>vii</b> |
| <b>Chapter 1 Introduction to Body Area and Wireless Sensor Networks....</b>                                 | <b>1</b>   |
| <b>Chapter 2 Frequency Band Allocation for Body Area Networks .....</b>                                     | <b>5</b>   |
| <b>Chapter 3 Antenna Design Requirements for Wireless BAN and<br/>WSNs .....</b>                            | <b>7</b>   |
| 3.1 Theoretical Considerations .....  | 8          |
| 3.2 Wearable Antenna Designs for Wireless BAN/PAN .....   | 11         |
| 3.3 Integrated Antenna in Compact Wireless Body-Worn Sensor....   | 17         |
| <b>Chapter 4 Cooperative and Low-Power Wireless Sensor Networks<br/>for Body-Centric Applications .....</b> | <b>25</b>  |
| 4.1 Practical Considerations of the Body-Centric Wireless<br>Sensor Network .....                           | 26         |
| 4.2 Experimental Investigations and Analyses.....   | 31         |
| <b>Chapter 5 Design of Body-Worn Radar-Based Sensors for<br/>Vital Sign Monitoring .....</b>                | <b>39</b>  |
| 5.1 System Architecture and Propagation Model .....   | 39         |
| 5.2 Signal Processing Algorithm and Simulation Examples .....   | 44         |
| <b>Chapter 6 Conclusions .....</b>  | <b>47</b>  |
| <b>References.....</b>  | <b>49</b>  |