LIST OF FIGURES

Figure 1.1 Modern Sensor Technology.................................................................4
Figure 1.2 A Typical Sensor Node........................................................................5
Figure 1.3 Applications of Wireless Sensor Network...........................................7
Figure 1.4 Adopted Research Methodologies.......................................................13
Figure 3.1 Example of DoS Attack.....................................................................56
Figure 3.2 Classification of Routing Protocols in Wireless Sensor Network........66
Figure 3.3 Scenario of INSENS...........................................................................68
Figure 3.4 Scenario of ITSRP.............................................................................69
Figure 3.5 Scenario used in μTESLA.................................................................71
Figure 3.6 Scenario of DAWWSEN.....................................................................73
Figure 4.1 Schematic Diagram of Proposed STREE............................................87
Figure 4.2 Single-Logic Tree Approximation....................................................91
Figure 4.3 Multi-Logic Tree Approximation.....................................................93
Figure 4.4 Security Scheme of STREE...............................................................95
Figure 4.5 Schema of Key Representation in STREE........................................96
Figure 4.6 Analysis of Alive Nodes.................................................................108
Figure 4.7 Analysis of Fluctuation in Battery Power Factor..............................109
Figure 4.8 Analysis of Battery Power Factor....................................................111
Figure 4.9 Analysis of Processing Time.............................................................112
Figure 4.10 Analysis of Storage Complexity....................................................114
Figure 4.11 Analysis of First node death values...............................................116
Figure 5.1 Schematic Diagram of SABR............................................................128
Figure 5.2 Analysis of Energy Consumption [r=0.5]....................................142
Figure 5.3 Analysis of Energy Consumption [r =0.75]....................................144
Figure 5.4 Analysis of Energy Consumption [r=1]........................................145
Figure 5.5 Time for complete data aggregation \([r = 0.5]\) ........................................ 147
Figure 5.6 Time for complete data aggregation \([r = 0.75]\) ........................................ 148
Figure 5.7 Time for complete data aggregation \([r = 1]\) ........................................ 149
Figure 5.8 Resultant Outcomes of Processing Time ................................................. 151
Figure 6.1 Schematic diagram of SARDS ................................................................. 159
Figure 6.2 Sender and Receiver Node communication in SARDS ....................... 160
Figure 6.3 New format of Beacon in SARDS ........................................................... 162
Figure 6.4 Procedure to Replace Repetitive Encoding Beacons in SARDS........... 163
Figure 6.5 New Digital Signature Scheme of SARDS ............................................ 166
Figure 6.6 Retaining Privacy in SARDS ................................................................. 168
Figure 6.7 Energy Consumption Analysis .............................................................. 178
Figure 6.8 End-to-End Delay Analysis ................................................................... 180
Figure 6.9 Combined Outcome of Algorithm Processing Time ......................... 184
Figure 6.10 Combined Outcome of Data Aggregation Time ............................... 185
Figure 6.11 Combined Outcome of Throughput ..................................................... 186
Figure 6.12 Combined Outcome of Energy Consumption ................................. 187