

- Preface p. xi
- 1 Electronics Laboratory Experiments Accessible via Internet T. A. Fjeldly and M. S. Shur p. 1
 - 1.1 Introduction p. 1
 - 1.2 AIM-Lab at RPI p. 3
 - 1.3 LAB-on-WEB at UniK p. 9
 - 1.4 Example Experiments p. 23
 - 1.5 Educational Experience and Future Plans p. 43
 - 1.6 Conclusion p. 45
 - References p. 46
- 2 MIT Microelectronics WebLab J. A. del Alamo and V. Chang and L. Brooks and C. McLean and J. Hardison and G. Mishuris and L. Hui p. 49
 - 2.1 Introduction p. 49
 - 2.2 WebLab System Architecture p. 51
 - 2.3 WebLab User Interface p. 55
 - 2.4 Educational Use of WebLab p. 66
 - 2.5 Collaboration p. 76
 - 2.6 Concluding Remarks and Future Plans p. 84
 - References p. 86
- 3 Instrumentation on the Web T. Zimmer and M. Billaud and D. Geoffroy and Y. Danto and J. Martinez and F. Gomez and I. Gonzalez and H. Effinger and W. Seifert and A. Wiegand p. 89
 - 3.1 Introduction p. 89
 - 3.2 RETWINE Architecture p. 90
 - 3.3 A Web Laboratory p. 99
 - 3.4 Laboratory 1. Electronics of Integrated Circuits: MOS Transistor p. 127
 - 3.5 Evaluation p. 139
 - 3.6 Conclusion p. 139
 - References p. 143
- 4 Next-Generation Laboratory: Solution for Remote Characterization of Analog Integrated Circuits C. Wulff and T. A. Saethre and A. Skjelvan and T. Ytterdal p. 145
 - 4.1 Introduction p. 145
 - 4.2 Technology p. 146
 - 4.3 Physical Architecture and Experimental Setup p. 150
 - 4.4 Software Architecture p. 152
 - 4.5 Frequency Response Experiment p. 165
 - 4.6 Laboratory Assignment p. 169
 - 4.7 Experiences with NGL p. 172
 - 4.8 Conclusion and Future Plans p. 172
 - References p. 173
- 5 Remote Laboratory for Electrical Experiments I. Gustavsson p. 175
 - 5.1 Introduction p. 175
 - 5.2 Instruments for Remote Access p. 177
 - 5.3 Web Technology p. 179
 - 5.4 Traditional Laboratory Exercises versus Remote-Access Experiments p. 181

- 5.5 First Remote Circuit Theory Laboratory Experiments at BTH p. 183
- 5.6 Instrument Server p. 186
- 5.7 Transducer Experiment Server p. 188
- 5.8 Instrument User Course Client Package p. 192
- 5.9 Client Package for Electrical Experiments p. 194
- 5.10 Client Package for Transducer Experiments with Video Transmission p. 195
- 5.11 Laboratory Exercises p. 196
- 5.12 Solutions to Experiments and Laboratory Assignments p. 205
- 5.13 Conclusion p. 219
- References p. 219
- 6 Remote Laboratory: Bringing Students Up Close to Semiconductor Devices A. Soderlund and F. Ingvarson and P. Lundgren and K. Jeppson p. 221
- 6.1 Introduction p. 221
- 6.2 The I-Lab System p. 222
- 6.3 Using I-Lab as a Learning Tool p. 228
- 6.4 Evaluation p. 229
- 6.5 Technical Problems p. 230
- 6.6 Discussion p. 231
- 6.7 Conclusion p. 233
- References p. 233
- Index p. 235