

- Section I Mathematics p. 1
- 1 Linear Operators and Matrices Cheryl B. Schrader and Michael K. Sain p. 3
- 2 Bilinear Operators and Matrices Michael K. Sain and Cheryl B. Schrader p. 23
- 3 The Laplace Transformation John R. Deller, Jr. p. 43
- 4 Fourier Series, Fourier Transforms and the Discrete Fourier Transform W. Kenneth Jenkins p. 89
- 5 z-Transform Jelena Kovacevic p. 119
- 6 Wavelet Transforms P.P. Vaidyanathan and Igor Djokovic p. 137
- 7 Graph Theory Krishnaiyan Thulasiraman p. 217
- 8 Signal Flow Graphs Krishnaiyan Thulasiraman p. 245
- 9 Theory of Two-Dimensional Hurwitz Polynomials Hari C. Reddy p. 257
- Section II Circuit Elements, Devices and Their Models p. 271
- 10 Passive Circuit Elements Stanislav Nowak p. 273
- 11 RF Passive IC Components Tomas H. Lee and Maria del Mar Hershenson and Sunderarajan S. Mohen and Hirad Samavati and C. Patrick Yue p. 351
- 12 Circuit Elements, Modeling and Equation Formulation Josef A. Nossek p. 375
- 13 Controlled Circuit Elements p. 387
- 14 Bipolar Transistors (BJT) Circuits David J. Comer and Donald T. Comer p. 403
- 15 Operational Amplifiers p. 427
- 16 High-Frequency Amplifiers Chris Toumazou and Alison Payne p. 465
- Section III Linear Circuit Analysis p. 513
- 17 Fundamental Circuit Concepts John Chroma, Jr p. 515
- 18 Network Laws and Theorems p. 529
- 19 Terminal and Port Representation James A. Svoboda p. 585
- 20 Signal Flow Graphs in Filter Analysis and Synthesis Pen-Min Lin p. 605
- 21 Analysis in the Frequency Domain p. 625
- 22 Tableau and Modified Nodal Formulations Jiri Vlach p. 663
- 23 Frequency Domain Methods Peter Aronhime p. 685
- 24 Symbolic Analysis Benedykt S. Rodanski and Marwan Hassoun p. 753
- 25 Analysis in the Time Domain Robert W. Newcomb p. 781
- 26 State-Variable Techniques K.S. Chao p. 799
- Section IV Feedback Circuits p. 821
- 27 Feedback Amplifier Theory John Choma, Jr. p. 823
- 28 Feedback Amplifier Configurations John Choma, Jr. p. 841
- 29 General Feedback Theory Wai-Kai Chen p. 871
- 30 The Network Functions and Feedback Wai-Kai Chen p. 885
- 31 Measurement of Return Difference Wai-Kai Chen p. 895
- 32 Multiple-Loop Feedback Amplifiers Wai-Kai Chen p. 901
- Section V Nonlinear Circuits p. 919
- 33 Qualitative Analysis Martin Hasler p. 921
- 34 Synthesis and Design of Nonlinear Circuits Angel Rodriguez-Vazquez and Manual Delgado-Restituto and J.L. Huertas p. 941
- 35 Representation, Approximation, and Identification Guanrong Chen p. 977
- 36 Transformation and Equivalence Wolfgang Mathis p. 1009
- 37 Piecewise-Linear Circuits and Piecewise-Linear Analysis Joo Vandewalle and L. Vandenberghe p. 1031

- 38 Simulation Erik Lindberg p. 1055
- 39 Cellular Neural Networks Tamas Roska and Akos Zarandy and Csaba Rekeczky p. 1075
- 40 Bifurcation and Chaos Michael Peter Kennedy p. 1093
- Section VI Distributed Circuits p. 1163
- 41 Transmission Lines Thomas Koryu Ishii p. 1165
- 42 Multiconductor Tranmission Lines Daniel De Zutter and Luc Martens p. 1183
- Section VII Computer-Aided Design and Optimization p. 1245
- 43 Time and Frequency Domain Responses Daniel De Zutter and Luc Martens p. 1191
- 44 Distributed RC Networks Vladimir Szekely p. 1201
- 45 Synthesis of Distributed Circuits Thomas Koryu Ishii p. 1223
- 49 Design by Optimization Sachin S. Sapatnekar p. 1301
- 46 Modeling of Circuit Performances Sung-Mo Kang and Abhijit Dharchoudhury p. 1247
- 47 Symbolic Analysis Methods Benedykt S. Rodanski and Marwan Hassoun p. 1263
- 48 Numerical Analysis Methods Andrew T. Yang p. 1283
- 50 Statistical Design Optimization Maciej A. Styblinski and Bogumila Styblinski p. 1325
- 51 Physical Design Automation Naveed A. Sherwani p. 1357
- 52 Design Automation Technology Allen M. Dewey p. 1381
- 53 Computer-Aided Analysis p. 1411
- 54 Analog Circuits Simulation J. Gregory Rollins p. 1455
- Section VIII Analog Intergrated Circuits p. 1475
- 55 Monolithic Device Models p. 1477
- 56 Analog Circuit Cells p. 1599
- 57 High Performance Analog Circuits p. 1699
- 58 RF Communication Circuits Michael Steyaert and Johan Janssens and Marc Borremans and Bram De Muer p. 1755
- 59 PLL Circuits Chorng-Kuang Wang and Min-Shueh Yuan p. 1783
- Section IX The VLSI Circuits p. 1813
- 60 Digital Circuits p. 1815
- 61 Digital Systems p. 1849
- 62 Data Convertors p. 1991
- Section X Design Automation p. 2047
- 63 Internet Based Micro-Electronic Design Automation (IMEDA) Framework Moon-Jung Chung and Heechul Kim p. 2049
- 64 System-Level Design Alice C. Parker and Yosef Tirat-Gefen and Suhrid A. Wadekar p. 2081
- 65 Synthesis at the Register Transfer Level and the Behavioral Level Jay Bhasker p. 2099
- 66 Embedded Computing Systems and Hardware/Software Co-Design Wayne Wolf p. 2125
- 67 Design Automation Technology Roadmap Don Cottrell p. 2135
- 68 Performance Modeling and Analysis in VHDL James H. Aylor and Robert H. Klenke p. 2175
- Section XI Passive Filters p. 2217
- 69 General Characteristics of Filters Andreas Antoniou p. 2219
- 70 Approximation Artice M. Davis p. 2247
- 71 Frequency Transformations Jaime Ramirez-Angulo p. 2279

- 72 Sensitivity and Selectivity Igor Filanovsky p. 2293
- 73 Passive Immittances and Positive-Real Functions Wai-Kai Chen p. 2325
- 74 Passive Cascade Synthesis Wai-Kai Chen p. 2333
- 75 Synthesis of LCM and RC One-Port Networks Wai-Kai Chen p. 2349
- 76 Two-Port Synthesis by Ladder Development Wai-Kai Chen p. 2361
- 77 Design of Resistively Terminated Networks Wai-Kai Chen p. 2377
- 78 Design of Broadband Matching Networks Wai-Kai Chen p. 2391
- Section XII Active Filters p. 2423
- 79 Low-Gain Active Filters Philip E. Allen and Benjamin J. Blalock and Stephen W. Milam p. 2425
- 80 Single-Amplifier Multiple-Feedback Filters F. William Stephenson p. 2457
- 81 Multiple-Amplifier Biquads Norbert Fliege p. 2471
- 82 The Current Generalized Immittance Converter (CGIC) Biquads Wasfy B. Mikhael p. 2495
- 83 Higher-Order Filters Rolf Schaumann p. 2515
- 84 Continuous-Time Integrated Filters Rolf Schaumann p. 2541
- 85 Switched Capacitor Filters Jose Silva-Martinez and Edgar Sanchez-Sinencio p. 2573
- Section XIII Digital Filters p. 2601
- 86 FIR Filters p. 2603
- 87 IIR Filters p. 2679
- 88 Finite Wordlength Effects Bruce W. Bonar p. 2739
- 89 Aliasing-Free Reconstruction Filter Bank Truong Q. Nguyen p. 2759
- 90 VLSI Implementation of Digital Filters Joseph B. Evans p. 2795
- 91 Two-Dimensional FIR Filters Rashid Ansari and A. Enis Cetin p. 2809
- 92 Two-Dimensional IIR Filters A. G. Constantinides and Xiaojian Xu p. 2839
- 93 Symmetry and 2-D Filter Design Hari C. Reddy and I-Hung Khoo and P. K. Rajan p. 2889
- Index p. 2915