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Capacitors; 4.5 Embedded Ferroelectric Capacitor; 4.5.1 Multi-interdigitated BST Gap Capacitor; 4.6 Summary; 4.7 Future Prospects; References; Chapter 5 High Aspect Ratio RF Passives Enabled by Smart RF Materials and Polymer-core Conductor Micromachining Technologies; 5.1 Introduction; 5.1.1 Importance of the High-performance Passives with High-quality Factors; 5.1.2 Existing Approaches to Improve Performances of Millimeter Passives; 5.2 Properties of SU-8 Polymer; 5.3 The Introduction of Polymer-core Conductor Micromachining Technology; 5.3.1 Fabrication Flow; 5.3.2 Advantages of the Polymer-core Conductor Technology; 5.4 High-Q RF Inductors by This Approach; 5.5 High-performance Millimeter-wave Antennas Using the Polymer-core Conductor Approach; 5.5.1 A Millimeter-wave Monopole Antenna; 5.5.2 An Elevated Patch Antenna; 5.5.3 A Surface Micromachined Horn Antenna Using a Polymer-core Conductor; 5.6 High-aspect-ratio Micromachined Filters, Duplexer, and Coupler; 5.6.1 Micromachined Cavity Resonator; 5.6.2 SU-8-based Cavity Filters for 60-GHz Applications; 5.6.3 SU-8-based Surface Micromachined Cavity Duplexer; 5.6.4 SU-8-based Surface Micromachined Microstrip Edge Coupler; 5.7 Summary; References; Chapter 6 CNT-based Passive Circuits and Detectable Components; 6.1 Introduction; 6.2 CNT-based Transmission Line and Interconnect; 6.2.1 CNT-based Transmission Line; 6.2.2 CNT-based Interconnects; 6.3 CNT-based Flexible and Pattern-agile Antennas; 6.3.1 CNT-based Flexible Antenna.

Sommario/riassunto

Focusing on novel materials and techniques, this pioneering volume provides you with a solid understanding of the design and fabrication of smart RF passive components. You find comprehensive details on LCP, metal materials, ferrite materials, nano materials, high aspect ratio enabled materials, green materials for RFID, and silicon micromachining techniques. Moreover, this practical book offers expert guidance on how to apply these materials and techniques to design a wide range of cutting-edge RF passive components, from MEMS switch based tunable passives and 3D passives, to metamaterial-bas.
