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Nota di contenuto	1. Introduction -- Organic Light Emitting Displays -- Flat-Panel Biomedical Imagers -- Backplane Technologies -- Organization -- 2. Design Considerations -- Temporal and Spatial Non-Uniformity -- Compensation Schemes -- Current Driving Scheme -- Voltage Driving Scheme -- Design Considerations for AMOLED Displays -- Lifetime and Yield -- Differential Aging and Mura -- Power Consumption -- Aperture Ratio -- IR Drop and Ground Bouncing -- Implementation Cost -- Design Considerations for Flat Panel Imager -- Input referred Noise and Dynamic Range -- Implementation Cost -- 3. Hybrid Voltage-Current Programming -- Multi-Modal Biomedical Imaging Pixel Circuit -- Multi-Modal Biomedical Sensor Array -- Peripheral Circuitries -- Measurement Results -- Improved Dynamic Range -- Noise Analysis of CBVP Pixel Circuit -- CBVP AMOLED Pixel Circuit -- 4. Enhanced-Settling Current Programming -- Localized current source -- Current Feedback -- Positive Feedback -- Stability and Noise Analysis -- Measurement Results and Discussion -- Self-Calibration of the Current

Source -- 5. Charge-Based Driving Scheme -- Advance Mobile Technology (AdMoTM) -- Measurement Results -- Implementation of the Relaxation Technique -- AMOLED Display -- Real-Time Biomedical Imaging Pixel Circuit -- Noise Analysis of Charge-Based Pixel Circuit -- 6. High Resolution Architectures -- Time Dependent Charge Injection and Clock Feed-Through -- Successive Calibration -- Arrays Structure and Timing -- Blanking-time extraction -- Simultaneous extraction -- Configurable Current Comparator -- Measurement Results and Discussions -- Hybrid approach -- 7. Summary and Outlook -- Appendix A. Enhanced Voltage Driving Schemes -- Interleaved Addressing Scheme -- 3-TFT Pixel Circuit -- Appendix B. OLED Electrical Calibration -- Interdependence Between Electrical and Luminance Degradation -- Electrical Compensation of OLED Degradation -- Compensating for different stress levels

Sommario/riassunto

Providing a reliable and consolidated treatment of the principles behind large-area electronics, this book provides a comprehensive review of the design challenges associated with building circuits and systems from thin-film transistors. The authors describe the architecture, fabrication and design considerations for the principal types of TFT and their numerous applications. The practicalities of device non-ideality are also addressed and the specific design considerations necessitated by instabilities and non-uniformities in existing fabrication technologies. Containing device-circuit information, discussion of electronic solutions that compensate for material deficiencies, and design methodologies applicable to a wide variety of organic and inorganic disordered materials, this is an essential reference for all researchers, circuit and device engineers working on large-area electronics.