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Nota di contenuto	Quality and Reliability in Solid State Lighting -- Solid State Lighting Technology in a Nutshell -- LED Reliability -- Failure Modes and Failure Analysis -- Degradation Mechanisms in LED Packages -- An Introduction to Driver Reliability -- Highly Accelerated Testing of LED Modules, Drivers and Systems -- Reliability Engineering for Driver Electronics in Solid State Lighting Products -- Solder Joint Reliability in SSL Applications -- A Multiscale Approach for Interfacial Delamination in Solid State Lighting -- On the Effect of Microscopic Surface Roughness on Macroscopic Polymer-Metal Adhesion -- An Introduction to System Reliability -- Solid State Lighting System Reliability -- Prognostics and Health Management -- Fault Tolerant Control of large LED Systems -- LED Lamps System Reliability -- SSL Case Study: Package, Module and System -- Hierarchical Reliability Assessment Models for Novel LED-Based Recessed Down Lighting Systems -- Design for Reliability of SSL Products -- Color Consistency Reliability of LED Systems -- Reliability Considerations of Wafer Level Integration of SSL Systems.

Sommario/riassunto

Solid State Lighting Reliability: Components to Systems begins with an explanation of the major benefits of solid state lighting (SSL) when compared to conventional lighting systems including but not limited to long useful lifetimes of 50,000 (or more) hours and high efficacy. When designing effective devices that take advantage of SSL capabilities the reliability of internal components (optics, drive electronics, controls, thermal design) take on critical importance. As such a detailed discussion of reliability from performance at the device level to sub components is included as well as the integrated systems of SSL modules, lamps and luminaires including various failure modes, reliability testing and reliability performance. This book also: Covers the essential reliability theories and practices for current and future development of Solid State Lighting components and systems Provides a systematic overview for not only the state-of-the-art, but also future roadmap and perspectives of Solid State Lighting reliability Discusses the reliability of LEDs and all other components, including the integrated systems of SSL modules, lamps and luminaires, failure modes, reliability testing and performance testing Solid State Lighting Reliability: Components to Systems is an ideal book for industry professionals, researchers, and graduate students interested in a reference book for solid state lighting reliability from the performance of the (sub-) components to the total system.