

# Contents

<b>1</b>	<b>Quality and Reliability in Solid-State Lighting: Qua Vadis? . . . .</b>	<b>1</b>
	T. Vos, P. den Breeijen, and Willem Dirk van Driel	
<b>2</b>	<b>Chip-Level Degradation of InGaN-Based Optoelectronic Devices . . . . .</b>	<b>15</b>
	Carlo De Santi, Matteo Meneghini, Gaudenzio Meneghesso, and Enrico Zanoni	
<b>3</b>	<b>LED Early Failures: Detection, Signature, and Related Mechanisms . . . . .</b>	<b>49</b>
	B. Hamon, T. Merelle, and B. Bataillou	
<b>4</b>	<b>Advances in Reliability Testing and Standards Development for LED Packages and Systems . . . . .</b>	<b>77</b>
	C. Qian, J.J. Fan, Xuejun Fan, and Guo Qi Zhang	
<b>5</b>	<b>Reliability and Lifetime Assessment of Optical Materials in LED-Based Products . . . . .</b>	<b>115</b>
	M. Yazdan Mehr, Willem Dirk van Driel, and Guo Qi Zhang	
<b>6</b>	<b>The Influence of Phosphor and Binder Chemistry on the Aging Characteristics of Remote Phosphor Products . . . .</b>	<b>141</b>
	J.L. Davis, R. Yaga, M. Lamvik, K. Mills, and B. Fletcher	
<b>7</b>	<b>Thermal Characterization of Die-Attach Material Interface of High-Power Light-Emitting Diodes . . . . .</b>	<b>159</b>
	Dae-Suk Kim and Bongtae Han	
<b>8</b>	<b>Color Quality . . . . .</b>	<b>179</b>
	Y. Ohno	

<b>9</b>	<b>LED-Based Luminaire Color Shift Acceleration and Prediction . . . . .</b>	<b>201</b>
	Guangjun Lu, Willem Dirk van Driel, Xuejun Fan, Jiajie Fan, and Guo Qi Zhang	
<b>10</b>	<b>Chromaticity Maintenance in LED Devices . . . . .</b>	<b>221</b>
	J. Lynn Davis, Karmann Mills, Robert Yaga, Cortina Johnson, Monica Hansen, and Michael Royer	
<b>11</b>	<b>Fault Diagnostics and Lifetime Prognostics for Phosphor-Converted White LED Packages . . . . .</b>	<b>255</b>
	Jiajie Fan, Cheng Qian, Xuejun Fan, Guo Qi Zhang, and Michael Pecht	
<b>12</b>	<b>Advances in LED Solder Joint Reliability Testing and Prediction . . . . .</b>	<b>301</b>
	J. Zhang and Guo Qi Zhang	
<b>13</b>	<b>Online Testing Method and System for LED Reliability and Their Applications . . . . .</b>	<b>353</b>
	Xiaobing Luo and Qi Chen	
<b>14</b>	<b>Degradation Mechanisms of Mid-power White-Light LEDs . . . .</b>	<b>381</b>
	Jianlin Huang, Dušan S. Golubović, Sau Koh, Daoguo Yang, Xiupeng Li, Xuejun Fan, and Guo Qi Zhang	
<b>15</b>	<b>Assessing the Reliability of Electrical Drivers Used in LED-Based Lighting Devices . . . . .</b>	<b>433</b>
	J. Lynn Davis, Karmann Mills, Robert Yaga, Cortina Johnson, and Joe Young	
<b>16</b>	<b>Reliability Prediction of Integrated LED Lamps with Electrolytic Capacitor-Less LED Drivers . . . . .</b>	<b>455</b>
	B. Sun, Xuejun Fan, Willem Dirk van Driel, and Guo Qi Zhang	
<b>17</b>	<b>Statistical Analysis of Lumen Depreciation for LED Packages . . . . .</b>	<b>487</b>
	M. Schuld, Willem Dirk van Driel, and B. Jacobs	
<b>18</b>	<b>Long-Term Reliability Prediction of LED Packages Using Numerical Simulation . . . . .</b>	<b>503</b>
	Sung-Uk Zhang	
<b>19</b>	<b>Corrosion Sensitivity of LED Packages . . . . .</b>	<b>527</b>
	B.J.C. Jacobs, C. van der Marel, Willem Dirk van Driel, S.J. Lu, and X.P. Li	

<b>20</b>	<b>Reliability Management of a Light-Emitting Diode for Automotive Applications . . . . .</b>	<b>549</b>
	C. Jung and Th. Zahner	
<b>21</b>	<b>Lightning Effects on LED-Based Luminaires . . . . .</b>	<b>573</b>
	Adedotun Agbemuko, Johannes van Meurs, and Willem Dirk van Driel	
<b>22</b>	<b>The Next Frontier: Reliability of Complex Systems . . . . .</b>	<b>585</b>
	D. Schenkelaars, Willem Dirk van Driel, and R. Duijve	
	<b>Index . . . . .</b>	<b>597</b>

Solid State Lighting Reliability Part 2

Components to Systems

van Driel, W.D.; Fan, X.; Zhang, G.Q. (Eds.)

2018, XI, 606 p. 401 illus., 338 illus. in color., Hardcover

ISBN: 978-3-319-58174-3