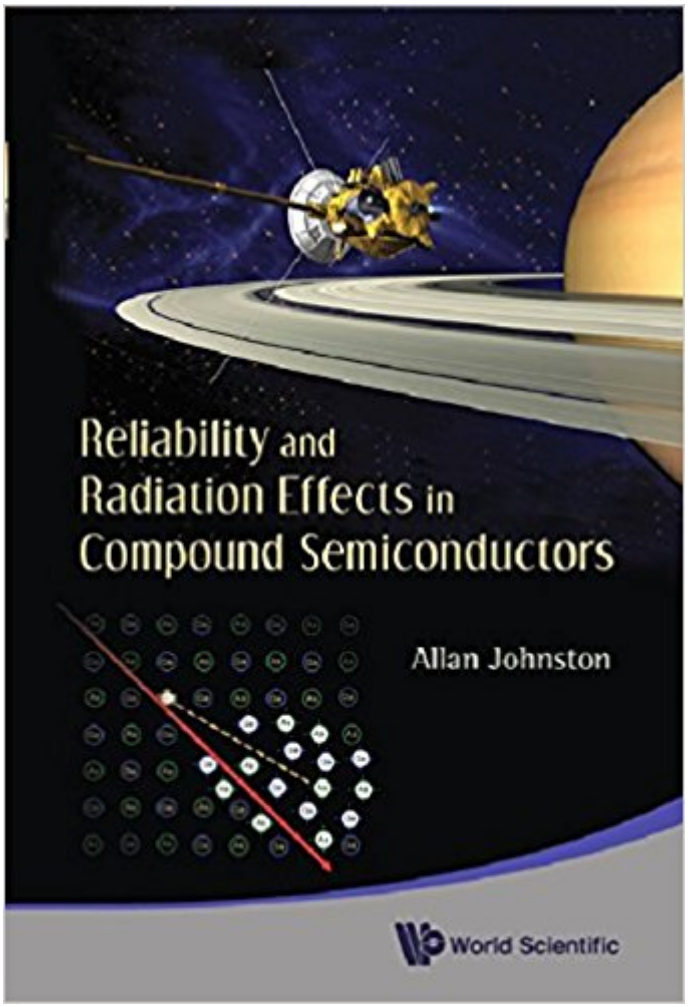
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Reliability And Radiation Effects In Compound Semiconductors



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Synopsis

This book focuses on reliability and radiation effects in compound semiconductors, which have evolved rapidly during the last 15 years. It starts with first principles, and shows how advances in device design and manufacturing have suppressed many of the older reliability mechanisms. It is the first book that comprehensively covers reliability and radiation effects in optoelectronic as well as microelectronic devices. It contrasts reliability mechanisms of compound semiconductors with those of silicon-based devices, and shows that the reliability of many compound semiconductors has improved to the level where they can be used for ten years or more with low failure rates.

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Customer Reviews

This book discusses reliability and radiation effects in compound semiconductors, which have evolved rapidly during the last 15 years. Johnston's perspective in the book focuses on high-reliability applications in space, but his discussion of reliability is applicable to high reliability terrestrial applications as well. The book is important because there are new reliability mechanisms present in compound semiconductors that have produced a great deal of confusion. They are complex, and appear to be major stumbling blocks in the application of these types of devices. Many of the reliability problems that were prominent research topics five to ten years ago have been solved, and the reliability of many of these devices has been improved to the level where they can be used for ten years or more with low failure rates. There is also considerable confusion about the

way that space radiation affects compound semiconductors. Some optoelectronic devices are so sensitive to damage in space that they are very difficult to use, and have caused failures in operating spacecraft. Others are far more robust. Johnston admirably clarifies the reasons for these differences in this landmark book.

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