Electrical Engineering

Completely revised and reorganized while retaining the approachable style of the first edition, **Infrared Detectors, Second Edition** addresses the latest developments in the science and technology of infrared (IR) detection. Antoni Rogalski, an internationally recognized pioneer in the field, covers the comprehensive range of subjects necessary to understand modern IR detector theory and technology. He presents each topic with a brief summary of historical background followed by a summary of the principles underlying performance, an overview of properties, and analysis of the state of the art.

Divided into four sections, the book covers the fundamentals of IR detection, IR thermal detectors, IR photon detectors, and focal plane arrays. It begins with a tutorial introduction to the essential different types of IR detectors and systems. The author explores the theory and technology of different thermal detectors and then moves on to the theory and technology of photon detectors. He concludes his treatment with a discussion of IR focal plane arrays in which relations between the performance of detector arrays and the infrared system quality are considered.

New to the Second Edition:

- Fundamentals of IR detection, radiometry, and flux-transfer issues needed for IR detector and system analysis
- Major achievements and trends in the development of IR detectors
- Novel uncooled detectors such as cantilever, antenna, and optically coupled
- Type II superlattice detectors
- Quantum dot IR detectors
- Terahertz (THz) arrays and a new generation of IR detectors, so-called third-generation detectors

The author accomplishes the difficult task of making the information accessible to a wide readership. A comprehensive analysis of the latest developments in IR detector technology and basic insight into the fundamental processes important to evolving detection techniques, the book provides the most complete and up-to-date resource of its kind, including a summary of useful data, a guide to the literature, and an overview of applications.

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