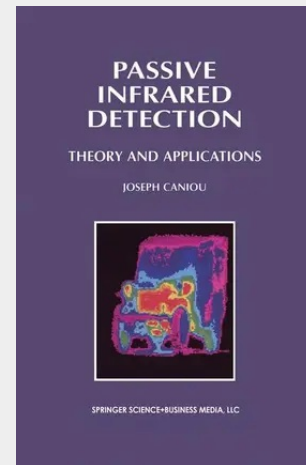


Passive Infrared Detection

Theory and Applications

Familiarization with the infrared world Thermal imaging systems extend human perception beyond the visible spectrum. Since their principle is based on the natural emission of energy by physical bodies, they represent today the subject of a great deal of interest in many fields, whether in the military field or in industry or in research laboratories. They can be employed to analyse physical properties of objects, such as their energy level or their surface appearance; they are also commonly used to observe scenes in particular conditions like night vision, or in order to increase the visibility range through haze and fogs. All of these applications exploit the properties of infrared radiation whose characteristics are described in this book. This is achieved in a manner which differs from other publications on the same subject in that the book is governed by the intention to progressively lead the reader to a complete understanding of the infrared. The author intends to link physical theory to each specific aspect of the elements involved in the detection process, from their physical origin up to energy mapping in a two-dimensional picture. However we thought that it was unnecessary to demonstrate again that which the reader will easily find in scientific literature, nor to write another data book. Our aim is to fill the gap between theory and practical application. The subject is vast: infrared systems combines a wide variety of disciplines and image interpretation depends on the precise understanding of various phenomena.

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