

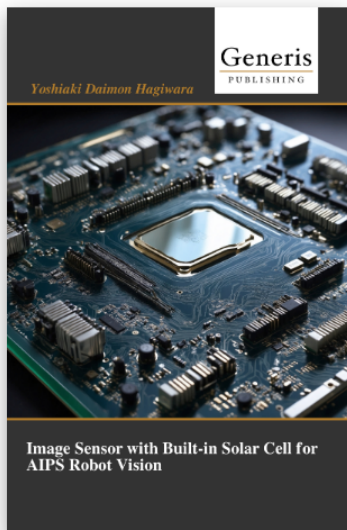


Image Sensor with Built-in Solar Cell for AIPS Robot Vision

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Description

Details

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This book explains key steps of development of silicon-based image sensors chronologically to provide the overall picture of the image sensor development. A new AI robot vision chip with the double and multi-junction type photodiodes are now fabricated by the modern 3DIC CMOS image sensor technology. A real-time AI smart robot vision system in a 3-D multi-chip architecture is composed of many kinds of semiconductor elements such as an array of pinned-surface buried-channel PP-NP-P+ double junction photodiodes, in-pixel ADCs, Cache SRAMs and high-frequency data-stream shift-registers with mask-and-match multi-bit real-time comparators. With a unique analog-signal switching MOS transistor circuit, the pinned-surface buried-channel PP-N-P-P+ double junction photo diodes in image sensor array also function as a solar cell power-supply unit in external power-off mode.