



## Smart Mini-Cameras

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*Achieve the Best Camera Design: Up-to-Date Information on MCMs*

Miniature camera modules (MCMs), such as webcams, have rapidly become ubiquitous in our day-to-day devices, from mobile phones to interactive TV systems. MCMs—or "smart" cameras—can zoom, adjust their frame rate automatically with illumination change, focus at different distances, compensate for hand shake, and transform captured images.

With contributions from academics and field engineers, **Smart Mini-Cameras** discusses the structure, operation principles, applications, and future trends of miniature mobile cameras. It compares this technology with traditional digital still cameras and explains the specific requirements of MCM components (imposed by the size or type of application) in terms of optical design, image sensor, and functionalities. The book describes the implementation of several active functionalities, including liquid crystal auto focus (AF) and optical image stabilization (OIS). It also explores how new technologies, such as the curved detector and transforming optics, are stimulating novel trends, including a miniature panoramic lens on mobile phones.

By providing you with an understanding of the components and performance tradeoffs of MCMs, this book will help you achieve the best camera design. It also answers frequently asked questions, such as the importance of the number of megapixels in a mobile phone camera and the value of AF and OIS features.

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