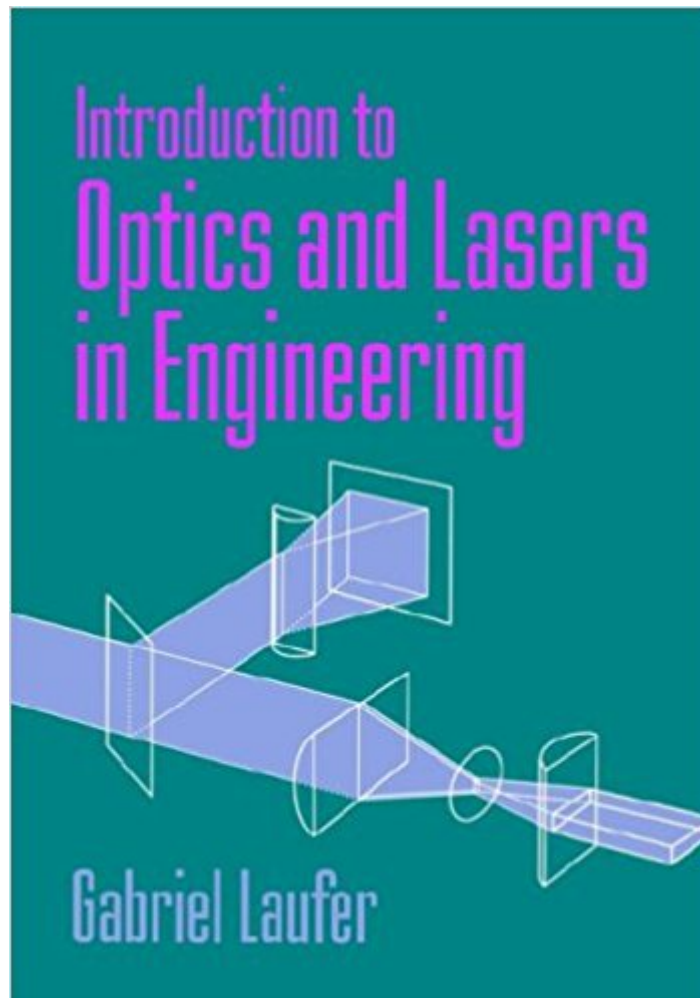




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Introduction To Optics And Lasers In Engineering



Synopsis

In a very short period of time, lasers have advanced from a mere research interest to an increasingly useful, commercially available tool for material processing, precision measurements, surgery, communication, and entertainment. This book provides the background in theoretical physics necessary to understand the engineering applications of lasers. It summarizes relevant theories of geometrical optics, physical optics, quantum optics, and laser physics while tying them to applications in such areas as fluid mechanics, combustion, surface analysis, material processing, and laser machining. The author clearly and thoroughly explains advanced topics such as laser Doppler velocimetry, laser-induced fluorescence, and holography. The book includes numerous examples and advanced problems that simulate real-world research and encourage independent reading and analysis. The book will benefit researchers and students across all branches of engineering.

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"This book provides the background in theoretical physics necessary to understand engineering applications of lasers and optics....Discussions of advanced optics such as laser Doppler velocimetry, laser-induced fluorescence, and holography are simplified yet are sufficiently detailed to enable the reader to evaluate existing systems and design new ones." International Aerospace Abstracts
A unique feature of this text is that almost every chapter ends with research problems, each based on a published journal article that deals specifically with the topic of that chapter but

goes beyond the coverage of the book....the book can be a valuable reference..." S. Maleki, Choice

This 1996 book provides the background in theoretical physics and optics needed by engineers. Relevant theories are tied to a wide range of engineering applications. Advanced topics such as laser Doppler velocimetry, laser-induced fluorescence, and holography are clearly and thoroughly explained.

Great Book. Recommended for anyone doing research in Optical diagnostics of combustion or fluid flow. Its very detailed and easy to understand if you understand basic fundamental optics.

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