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Sommario/riassunto	This book presents the role of photonic and optoelectronics with a focus on transformation of Industry 5.0. This book offers in-depth discussion of interfaces between human-machine collaboration. The introductory chapters discuss the fundamentals of photonics and optoelectronics as well as its use in real-time monitoring, additive manufacturing, and precision machining. Additionally, focus is placed on sustainability and energy efficiency, demonstrating how photonics may enhance industrial processes and assist renewable energy management. Finally, the book reviews the development of machine learning methods for optimization and the integration of artificial

intelligence with photonic systems which are described in ample detail. In order to assist researchers those are not familiar with the subfield, each chapter starts by providing an overview of the primary concepts to be discussed.
