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Sommario/riassunto	This book provides an update for the rapidly developing technology known as "optogenetics", which is the use of genetically encoded light-sensitive molecular elements (usually derived from lower organisms) to control or report various physiological and biochemical processes within the cell. Two ongoing clinical trials use optogenetic tools for vision restoration, and optogenetic strategies have been suggested as novel therapies for several neurological, psychiatric and cardiac disorders. This Special Issue comprises two reviews and seven experimental papers on different types of light-sensitive modules widely used in optogenetic studies. These papers demonstrate the efficiency and versatility of optogenetics and are expected to be equally relevant for advanced users and beginners considering using optogenetic tools in their research.