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Sommario/riassunto	This book presents the potential applications of hard materials as well as the latest trends and challenges in machining hard materials. Models for online monitoring to adjust parameters to obtain desired machining characteristics (i.e. reverse modelling) are discussed in this book. The conflicting requirements (i.e. maximize: material removal rate, roundness and minimize: surface roughness, dimensional ovality, co axiality, tool wear) in machining for industry personal is solved using advanced optimization tools. In addition, the framework for experimental modelling, predictive physic-based forward and reverse process models and optimization for better machining characteristics applicable to industry are proposed.