Record Nr. UNINA9910350294003321 Autore Diegel Olaf **Titolo** A Practical Guide to Design for Additive Manufacturing / / by Olaf Diegel, Axel Nordin, Damien Motte Singapore:,: Springer Singapore:,: Imprint: Springer,, 2019 Pubbl/distr/stampa **ISBN** 981-13-8281-6 Edizione [1st ed. 2019.] 1 online resource (xx, 226 pages) Descrizione fisica Springer Series in Advanced Manufacturing, , 1860-5168 Collana Disciplina 620.0042 Soggetti Engineering design Manufactures Nanotechnology **Engineering Design** Manufacturing, Machines, Tools, Processes Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Introduction to Additive Manufacturing -- Additive Manufacturing Technologies -- DfAM Strategic Design Considerations --Computational Tools for Design Analysis and Optimization of AM Parts -- Guidelines for Part Consolidation -- Guidelines for AM Tooling Design -- Design for Polymer AM -- Polymer Design Guidelines --Design for Metal AM -- Metal AM Guidelines -- Other AM Considerations -- Post-Processing -- The Future of Additive Manufacturing. Sommario/riassunto This book provides a wealth of practical guidance on how to design parts to gain the maximum benefit from what additive manufacturing (AM) can offer. It begins by describing the main AM technologies and their respective advantages and disadvantages. It then examines strategic considerations in the context of designing for additive manufacturing (DfAM), such as designing to avoid anisotropy, designing to minimize print time, and post-processing, before discussing the economics of AM. The following chapters dive deeper into computational tools for design analysis and the optimization of AM parts, part consolidation, and tooling applications. They are followed by

an in-depth chapter on designing for polymer AM and applicable

design guidelines, and a chapter on designing for metal AM and its corresponding design guidelines. These chapters also address health and safety, certification and quality aspects. A dedicated chapter covers the multiple post-processing methods for AM, offering the reader practical guidance on how to get their parts from the AM machine into a shape that is ready to use. The book's final chapter outlines future applications of AM. The main benefit of the book is its highly practical approach: it provides directly applicable, "hands-on" information and insights to help readers adopt AM in their industry.