Record Nr. UNINA9910983350503321 Autore Kladovasilakis Nikolaos Titolo Innovations in Topology Optimization: With Applications in Materials, Product Design, and Manufacturing / / by Nikolaos Kladovasilakis, Konstantinos Tsongas, Dimitrios Tzetzis Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2025 Pubbl/distr/stampa **ISBN** 9783031777004 303177700X Edizione [1st ed. 2025.] Descrizione fisica 1 online resource (127 pages) Collana SpringerBriefs in Applied Sciences and Technology, , 2191-5318 Altri autori (Persone) **TsongasKonstantinos TzetzisDimitrios** Disciplina 624.17713 Soggetti Engineering design Industrial engineering Production engineering Industrial design **Engineering Design** Industrial and Production Engineering Industrial Design Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Chapter 1: Introduction -- Chapter 2: Element-Based Approach aGenerative Design -- Chapter 3: Discrete/Truss-Based Approach and Architected Materials -- Chapter 4: Methodology for Topology Optimization -- Chapter 5: Evaluation for Topology Optimization --Chapter 6: Case Studies of Topology Optimization -- Conclusion and Future Research in Topology Optimization. This book is a practical guide to the topology optimization process. It Sommario/riassunto explains the fundamental theoretical underpinnings of topology optimization techniques and covers hands-on implementation. The book also offers several real-world examples that illustrate the transformative power of topology optimization in enhancing product design. Through these case studies, the book demonstrates how the application of topology optimization can tangibly and measurably

elevate the quality, efficiency, and functionality of a diverse range of products, further reinforcing its importance and effectiveness.