

1. Record Nr.	UNINA9910557749103321
Autore	Sommitsch Christof
Titolo	Numerical Modelling and Simulation of Metal Processing
Pubbl/distr/stampa	Basel, Switzerland, : MDPI - Multidisciplinary Digital Publishing Institute, 2021
Descrizione fisica	1 electronic resource (374 p.)
Soggetti	Technology: general issues
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>This book deals with metal processing and its numerical modelling and simulation. In total, 21 papers from different distinguished authors have been compiled in this area. Various processes are addressed, including solidification, TIG welding, additive manufacturing, hot and cold rolling, deep drawing, pipe deformation, and galvanizing. Material models are developed at different length scales from atomistic simulation to finite element analysis in order to describe the evolution and behavior of materials during thermal and thermomechanical treatment. Materials under consideration are carbon, Q&amp;T, DP, and stainless steels; ductile iron; and aluminum, nickel-based, and titanium alloys. The developed models and simulations shall help to predict structure evolution, damage, and service behavior of advanced materials.</p>