

1. Record Nr.	UNINA9910830768903321
Autore	Dahotre Narendra B.
Titolo	Laser-based additive manufacturing : modeling, simulation, and experiments // authors, Narendra B. Dahotre, Mangesh V. Pantawane, Shashank Sharma
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH, , [2022] ©2022
ISBN	3-527-82881-8 3-527-82880-X
Descrizione fisica	1 online resource (303 pages)
Disciplina	621.988
Soggetti	Additive manufacturing Laser sintering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- Acronyms -- Chapter 1 Introduction to Additive Manufacturing -- 1.1 Evolution of Manufacturing -- 1.2 Concept of AM -- 1.3 Advantages over Conventional Manufacturing Techniques -- 1.4 LaserBased AM -- 1.4.1 LaserBased Directed Energy Deposition -- 1.4.1.1 Machine Design -- 1.4.1.2 Process Parameters -- 1.4.2 Laser Powder Bed Fusion -- 1.4.2.1 Process Parameters -- 1.4.3 Estimation of Energy Input in LAM Processes -- 1.4.4 MultiStep LAM Techniques -- References -- Chapter 2 Multiscale Computational Approaches to LAM -- 2.1 Computational Science -- 2.1.1 Computational Material Science -- 2.2 Multiscale Modeling -- 2.2.1 NanoMicroScale Modeling -- 2.2.1.1 Molecular Dynamics and Density Functional Theory -- 2.2.1.2 Monte Carlo Method -- 2.2.2 MesoMacro Scale Modeling -- 2.2.2.1 Kinetic Monte Carlo Method -- 2.2.2.2 Cellular Automata -- 2.2.2.3 Phase Field Method -- 2.2.2.4 Finite Element Method -- 2.3 Integrated Computational Materials Engineering (ICME) -- References -- Chapter 3 Laser Matter Interaction in LAM -- 3.1 Introduction -- 3.1.1 Physical Phenomena in LAM -- 3.2 Components of Mathematical Models in Metal AM -- 3.3 Feedstock -- 3.3.1 Powder Bed Morphology in LPBF -- 3.3.1.1 Discrete Element Method -- 3.3.1.2 Powder Spreading

Mechanism -- 3.3.2 Powder Stream Generation in LDED -- 3.3.2.1
 Turbulent Gas Flow and Discrete Phase Model -- 3.3.2.2 Powder Stream
 Characteristics -- 3.3.3 LaserFeedstock Interaction -- 3.4 Thermo
 Fluidic Model in LAM -- 3.4.1 Laser Heat Source -- 3.4.2 Radiative and
 Convective Cooling -- 3.4.3 Recoil Pressure and Evaporative Cooling --
 3.4.4 Surface Tension -- 3.4.5 Free Surface Tracking Methods -- 3.5
 Melt Hydrodynamics in LPBF -- 3.5.1 ThermoFluidic Anatomy of a
 Single Track -- 3.5.2 Conduction Mode LPBF -- 3.5.3 Keyhole Mode
 LPBF.
 3.5.4 Energy Coupling Mechanism -- 3.6 Melt Hydrodynamics in LDED
 -- 3.7 MultiLayer, MultiTrack Approach -- 3.8 Computational Cost --
 3.9 Computationally Efficient Approach -- 3.10 Guidelines for
 Experimental Validation -- References -- Chapter 4 Thermokinetics,
 Microstructural Evolution, and Material Response -- 4.1 Thermokinetics
 in LAM -- 4.2 Solidification -- 4.2.1 Nucleation -- 4.2.1.1
 Heterogeneous Nucleation Assisted by Inoculants -- 4.2.1.2
 Homogeneous Nucleation -- 4.2.1.3 Nucleation Influenced by Acoustic
 Cavitation -- 4.2.2 Solidification Variables -- 4.2.2.1 Thermal Gradient
 -- 4.2.2.2 Solidification Rate -- 4.2.3 Growth and Orientation -- 4.2.4
 Solidification Modes -- 4.2.5 Spatial Variation of Thermokinetic
 Parameters -- 4.2.5.1 Dependence on the Curvature of the Trailing
 Boundary -- 4.2.5.2 Solidification Rate and Thermal Gradient -- 4.2.5.3
 Morphology Factor and Cooling Rate Variation -- 4.2.5.4 Columnar to
 Equiaxed Transition -- 4.3 Thermal Cycles in LAM Processes -- 4.3.1
 Thermal Cycles in LPBF -- 4.3.1.1 Thermal Cycles During Layer
 Fabrication -- 4.3.1.2 Thermal Cycles During Fabrication of Multiple
 Layers -- 4.3.2 Thermal Cycles in LDED -- 4.3.2.1 Thermal Cycles
 During the Deposition of a Layer -- 4.3.2.2 Thermal Cycles During
 Fabrication of Multiple Layers -- 4.4 Phase Transformations in LAM --
 4.4.1 Thermal Cycle Driven Phase Evolution -- 4.4.2 Process Driven
 Phase Transformations -- 4.4.2.1 Isothermal Effect -- 4.4.2.2 Process
 Parameters -- 4.5 Effect of Process Parameters -- 4.5.1 Laser Beam
 Attributes -- 4.5.1.1 Laser Beam Diameter -- 4.5.1.2 Laser Power --
 4.5.1.3 Laser Speed -- 4.5.2 Laser Process Attributes -- 4.5.2.1
 Scanning Strategy -- 4.5.2.2 Preheating the Substrate -- 4.5.2.3 Build
 Orientation -- 4.5.2.4 Interlayer Duration -- 4.5.2.5 Feed Rate -- 4.6
 Effect of Melting Modes -- 4.7 Laser Operation Modes.
 4.8 Material Response -- 4.8.1 Mechanical Response -- 4.8.1.1 Elastic
 Modulus -- 4.8.1.2 Fatigue -- 4.8.1.3 Creep -- 4.8.1.4 Wear -- 4.8.2
 Electrochemical Response -- References -- Chapter 5 Residual Stress in
 LAM -- 5.1 Introduction -- 5.2 ThermoMechanical Model:
 Mathematical Framework -- 5.2.1 ElastoPlastic Mechanical Model --
 5.2.2 StressStrain Behavior -- 5.2.2.1 Elastic Region -- 5.2.2.2 Yield
 Stress -- 5.2.2.3 Plastic Region -- 5.2.2.4 Bauschinger Effect and
 Kinematic Hardening -- 5.2.3 Basic Elements of ElasticPlastic Theory
 -- 5.2.3.1 Stress -- 5.2.3.2 Strain -- 5.2.3.3 Equation of Motion --
 5.2.3.4 Criterion for Initial Yielding -- 5.2.3.5 Flow Rule -- 5.2.3.6
 Isotropic Strain Hardening -- 5.2.3.7 Viscoplasticity and Thermal
 Softening -- 5.2.3.8 Kinematic Hardening -- 5.2.3.9 Consistency
 Condition -- 5.2.3.10 ElasticPlastic StressStrain Relation -- 5.3
 Thermal ElasticPlastic Formulation -- 5.3.1 MacroScale Approaches --
 5.4 Evolution of Residual Stress in LAM -- 5.4.1 ThermoMechanical
 Anatomy of a Single Track -- 5.4.2 ThermoMechanical Anatomy of a
 Single Layer -- 5.4.3 Stress Evolution at Component Scale -- 5.4.4
 Experimental Validation of Residual Stress -- 5.4.5 Integrated
 Experimental and Numerical Approach for the Mitigation of Residual
 Stress -- 5.4.5.1 Role of the Scanning Strategy -- 5.4.5.2 Role of
 Preheating -- 5.4.5.3 RealTime Control and Miscellaneous Approaches

-- References -- Chapter 6 Surface Roughness in LAM -- 6.1
Introduction -- 6.2 Surface Roughness Characteristics in LAM -- 6.3
Surface Defects in LAM -- 6.4 PostLAM Surface Finishing -- References
-- Index -- EULA.

2. Record Nr.	UNISALENTO991004377938407536
Autore	Benet, Juan
Titolo	Numa (Una leggenda) e Una tomba / Juan Benet ; a cura di Pier Luigi Crovetto
Pubbl/distr/stampa	Milano : Garzanti, 1991
Titolo uniforme	Numa (Una leyenda) 4373846
ISBN	8811650658
Descrizione fisica	124 p. ; 19 cm
Collana	I coriandoli
Altri autori (Persone)	Crovetto, Pier Luigi
Disciplina	863.64
Lingua di pubblicazione	Italiano
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Titolo originale: Una tumba