

1. Record Nr.	UNINA9910792532103321
Autore	Carter K. Codell (Kay Codell), <1939-, >
Titolo	The rise of causal concepts of disease : case histories / / K. Codell Carter
Pubbl/distr/stampa	London ; ; New York : , : Routledge, , 2016
ISBN	1-138-24812-6 1-315-23730-X 1-351-88264-3
Descrizione fisica	1 online resource (248 pages)
Collana	The History of Medicine in Context
Disciplina	616.07/1
Soggetti	Diseases - Causes and theories of causation - History
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	First published 2003 by Ashgate Publishing.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Causes of disease in early nineteenth-century practical medicine -- 2. Universal necessary causes -- 3. Etiological characterizations -- 4. Microorganisms as causes -- 5. The bacterial hypothesis -- 6. A bacterial theory of disease -- 7. Proving disease causation -- 8. The etiological standpoint -- 9. An ideational theory of disease -- 10. Protozoal and viral theories of disease -- 11. A nutritional deficiency theory of disease.

2. 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 ThermoFluidic 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.
