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Titolo	Morphology of Condensed Matter [[electronic resource]] : Physics and Geometry of Spatially Complex Systems / / edited by Klaus R. Mecke, Dietrich Stoyan
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Disciplina	530.4/1
Soggetti	Condensed matter Statistical physics Dynamical systems Mechanics Mechanics, Applied Statistics Topology Condensed Matter Physics Complex Systems Theoretical and Applied Mechanics Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences Statistical Physics and Dynamical Systems
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Complex Structured Condensed Matter -- Spatial Statistics and Micromechanics of Materials -- Characterising the Morphology of Disordered Materials -- Topological Characterization of Porous Media -- Nanotomography: Real-Space Volume Imaging with Scanning Probe Microscopy -- Bicontinuous Surfaces in Self-assembling Amphiphilic Systems -- Morphology of Langmuir Monolayer Phases -- Spatial Order in Liquid Crystals: Computer Simulations of Systems of Ellipsoids -- Two-Dimensional Fluid Foams at Equilibrium -- Spatial Statistics and

Morphology -- Morphological Texture Analysis: An Introduction -- Vector- and Tensor-Valued Descriptors for Spatial Patterns -- Computational Topology for Point Data: Betti Numbers of ?-Shapes -- The Euler Number of Discretized Sets — On the Choice of Adjacency in Homogeneous Lattices -- Shape Statistics for Random Domains and Particles -- A Survey on Contact Distributions -- Mark Correlations: Relating Physical Properties to Spatial Distributions -- Spatial Jump Processes and Perfect Simulation -- Statistics for Non-sparse Spatially Homogeneous Gibbs Point Processes -- Spatial Statistics of a Turbulent Random Multiplicative Branching Process.

Sommario/riassunto

The morphology of spatially stuctured materials is a rapidly growing field of research at the interface of statistical physics, applied mathematics and materials science. A wide spectrum of applications encompasses the flow through porous and composite materials as well as microemulsions and foams. Written as a set of lectures and tutorial reviews leading up to the forefront of research, this book will be both a compendium for the experienced researcher as well as a high level introductory text for postgraduate students and nonspecialist researchers working in related areas.