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Nota di contenuto	Topological indices-based vector representation of graphs -- Toxicity Prediction Using Convolutional Neural Networks: A Study of Deep Learning Approach -- AI and ML in Polymer Science: Enhancing Material Informatics through Predictive Modelling -- Transforming Carbon-Based Material: The Role of AI and ML Regression Techniques in Material Science -- Physics Informed Neural Networks: Fundamentals & Application to Phase Field Models -- Application of AI to help leverage Density Functional Theory computations in Materials Informatics -- XAI Approaches in Genetic Biomaterial Analysis -- AI-Driven Robotic

Solutions in Material Engineering -- Implications of high-entropy energy materials in healthcare, environment and agriculture, along with the applications of artificial intelligence -- Advancements in Agricultural Materials: Machine Learning Models for Precision Fertilizer Prediction.

Sommario/riassunto

This comprehensive book explores the transformative impact of AI on materials informatics, delving into machine learning/deep learning, and material knowledge representation. Embracing the transformative power of artificial intelligence (AI), the field of materials informatics has witnessed a remarkable revolution in its methodology and applications. AI has revolutionized the field of materials informatics, enabling researchers to discover, design, and optimize materials with enhanced properties at an accelerated pace. It showcases how AI is accelerating materials discovery, property prediction, providing case studies, and a comprehensive bibliography for further exploration. This essential resource equips researchers, scientists, and engineers with the knowledge and tools to harness the power of AI for groundbreaking advancements in materials science.
