1.	Record Nr.	UNINA9911064743103321
	Autore	Boutahir Mourad
	Titolo	Artificial Intelligence and Emerging Materials for the Transition Toward Green and Smart Technologies / / edited by Mourad Boutahir, El Mehdi Elkhattabi, Mohammed Zouini, Abhishek Upadhyay, Harshini Gadam, Aryender Tyagi
	Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2026
	ISBN	3-032-15481-2
	Edizione	[1st ed. 2026.]
	Descrizione fisica	1 online resource (250 pages)
	Collana	Engineering Materials, , 1868-1212
	Altri autori (Persone)	Boutahir
	Disciplina	620.100285
	Soggetti	Materials science - Data processing
		Artificial intelligence
		Sustainable architecture
		Thermodynamics
		Heat engineering
		Heat - Transmission
		Mass transfer
		Sustainability
		Computational Materials Science
		Artificial Intelligence
		Sustainable Architecture/Green Buildings
		Engineering Thermodynamics, Heat and Mass Transfer
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Analysis of natural convection using the lattice Boltzmann method (LBM) -- Evaluation of Phase-Change Liquid Nitrogen Immersion Cooling Performance for High-Power Electronics -- Heat transfer optimization in sinusoidally heated cavity using the lattice Boltzmann method -- Intelligent management of a solar-hydrogen micro-grid: Simulation and energy optimization -- Metapiles as a countermeasure of ground vibration -- Modeling railway system using 3D finite element method -- Influence of Hematocrit on Electroosmotic Pulsatile Blood Flow of Casson Nanofluid in a Stenosed Arterial Segment -- Adsorption

Kinetics, Isotherm Models, and Thermodynamics: A Brief Review -- Optimizing Mechanical Resilience in 3D-Printed Poly-mers: Exploring Raster Orientation Effects on Fracture Dynamics -- Analysis of the impact of solar irradiation and tilt an-gle on photovoltaic module performance.

| Sommario/riassunto | This book examines the powerful synergy between artificial intelligence and advanced materials in driving sustainable technologies. It spans a diverse array of topics, including AI-assisted material discovery, nanofluid dynamics, smart and responsive materials, thermal and structural performance modeling, energy-efficient building systems, and next-generation optoelectronic and magnetic materials. This book highlights how computational tools and intelligent systems are reshaping the design, analysis, and deployment of materials for cleaner energy and resilient infrastructure. Featuring extended chapters selected as exceptional contributions to the 2025 International Conference on Advanced Materials for Sustainable Energy and Engineering in Meknes, Morocco, this book offers a rich, interdisciplinary perspective for researchers, engineers, and innovators working at the forefront of sustainable science and technology. |