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Nota di contenuto	1. Modeling and calculation of reactivity feedback coefficients and neutron flux using Monte Carlo code OpenMC for SLOWPOKE-2 reactor -- 2. Design and evaluation performance of Single-Layer and Double-Layer Radiative Cooling Coatings Using Silicon Dioxide and Titanium Dioxide -- 3. Sustainability of photovoltaic materials and smart monitoring: case study in Morocco -- 4. Unveiling the Quantum World of Buckled Aluminene : DFT Insights with Van der Waals Corrections -- 5. Heat transfer enhancement in triangular cavities using nanofluids: A comparative study of heating wall orientation -- 6. Comparative Fatigue Analysis of Zirconia and Titanium Dental Implants with Varying

Thread Designs -- 7. Influence of the Rayleigh number on the behavior of Carreau-Yasuda non-Newtonian fluids with viscosity varying with temperature -- 8. Theoretical Investigation of the Structural, Optical, and Thermoelectric Properties of the Hybrid Organic-Inorganic Perovskite [NH3–(CH2)4–NH3]CdCl4 Compound: A First-Principles Approach -- 9. Thermal Performance of Non-Newtonian Water–Ethylene Glycol Nanofluids in Enclosed Natural Convection -- 10. Microwave absorption properties of TiO/AlO ceramic composite material at X-band frequencies -- 11. First Principals Study Of The Electronic Structure and Optical Properties Of CH3 NH3 PbX3 (X=I, Br, Cl) For Perovskite Silicon Tandem Solar Cell Applications -- 12. Theoretical study of the physical properties of 2 hydrides (X=Mg and Sr) for hydrogen storage -- 13. Lattice Boltzmann fluid simulation with Neumann boundary conditions -- 14. Influence of Process Parameters on Tensile Strength of FDM Printed ABS-Carbon Fiber Composites: Statistical and Experimental Analysis -- 15. Multifunctional Properties of Halide Double Perovskite K 2 NaFeCl 6 : Electronic, Optical, and Thermoelectric Insights" -- 16. Double Perovskite Cs2AgIrBr6: Structural, Electronic, and Optical Properties for Photovoltaic Application -- 17. b Initio Study of the Structural and Optoelectronic Properties of Rb2AgIrBr6 Insights from DFT calculation -- 18. Thermal conductivity of single-walled carbon nanotubes (SWCNTs) -- 19. Theoretical analysis of the optical properties of vanadium dioxide using Drude and Lorentz models -- 20. Comprehensive Review on Dissipated Energy in Vanadium Dioxide and its Technological Applications -- 21. Study of the optical response of vanadium dioxide (VO) from the complex dielectric constant.

Sommario/riassunto

This book provides an in-depth exploration of the latest advancements in the field of sustainable energy technologies. In particular, it focuses on recent progress made in renewable energy sources such as solar, wind, geothermal, and more. By closely examining emerging technological developments, this book seeks to present innovative solutions that are driving the green revolution and contributing to global energy transition. From improving energy efficiency in clinic operating theaters to investigating solar floor heating systems and utilizing deep learning for couscous grain drying, each contribution offers unique insights such as numerical simulations of 3-D mixed convection, the application of Big Data for greening agri-food supply chains, and the optimization of fluid flows using the LBM method. Chapters also cover the design of tools for measuring total solar irradiance, integrating photovoltaic/thermal collectors for desalination-refrigeration, and dynamic analysis of power distribution systems. This book also looks at into compound parabolic collectors for enhanced wood drying, lessons from solar energy plants, and the physicochemical properties of sewage sludge for energy recovery. It concludes with an exploration of an autonomous wind turbine’s viability for supplying energy to a laboratory in Niger. Featuring extended chapters selected as exceptional contributions to the 2023 International Conference on Advanced Materials for Sustainable Energy and Engineering in Meknes, Morocco, this book provides researchers and practitioners with a comprehensive overview of some of the latest advancements in novel nanomaterials. With its interdisciplinary approach and rigorous scientific analysis, this book serves as a valuable resource for those striving to develop sustainable energy solutions for the future.