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Nota di contenuto	Chapter 1. Prediction of Global Solar Radiation Based on Sunshine Hours in Ethiopia's Amhara Region -- Chapter 2. Investigation and optimization of the energy band gap of PAM/PVP/Al ₂ O ₃ composites -- Chapter 3. Characterization of False Banana Fiber as a Potential Reinforcement Material for Geopolymer Composites -- Chapter 4. Drying Characteristics and Kinetic Study of Coffee Cherries (Coffee Arabica) in Convective Hot Air Dryer -- Chapter 5. Effect of Partial Replacement of Cement by Metakaolin on Engineering Properties of Concrete -- Chapter 6. Engineering Properties of Concrete with Partial Replacement Cement and Course aggregate by Waste Glass Powder and Steel Slag Aggregate -- Chapter 7. Experimental Investigation on Properties of Mortar Containing Waste Marble as Fine Aggregate --

Chapter 8. Investigation on Utilizing of Steel Slag as a Partial Replacement of Natural River Sand as a Fine Aggregate in Concrete Production -- Chapter 9. Effect of Filtering Techniques in Manufacturing of Optimal Topologies using Additive Manufacturing -- Chapter 10. Optimal Placement and Size of Multiple PV-DG Units for Power Loss Reduction and Voltage Profile Improvement in Dilla Distribution Network -- Chapter 11. Technological development and adoption rates of Injera baking stoves – A Review -- Chapter 12. Design, manufacturing, and experimental investigation of solar cooker using parabolic dish- collector for indoor cooking application -- Chapter 13. Economic Feasibility Study of Biogas Production from Cladodes of Cactus (*Opuntia ficus-indica*) -- Chapter 14. Zn(NO₃)₂·6 H₂O/Urea Composite Deep Eutectic Solvents derived Through Facile and Green Synthesis Approach As an Electrolyte for Rechargeable Zinc Air Batteries -- Chapter 15. Experimental Investigation on Thermal Performance of Parabolic Solar Dish Concentrator based Solar Dryer Assisted with Thermal Energy Storage system -- Chapter 16. Performance Evaluation and Comparison of Mixed-Mode Natural Convection Solar Dryer with and without Solar Air Heater for Green Banana Flour Production -- Chapter 17. Evaluation of Planetary Ball Milling and Mild-Alkaline Pretreatment for Enhanced Fermentable Sugar Production from Sugarcane Bagasse -- Chapter 18. Mechanical Response Prediction of Fiber Reinforced Composites by using Machine Learning Models: A Review -- Chapter 19. Review of Recent Advancements in Mechanical Properties of Cross Laminated Timber (CLT) -- Chapter 20. Development and characterization of sustainable bio-based adhesive from waste avocado seed starch using clay as a filler -- Chapter 21. Investigating Rutting Performance of Ethiopian Jute fiber Modified Asphalt Binder -- Chapter 22. Preparation of Thermal Insulation Material from Plastic Scrap, Sawdust and Gypsum -- Chapter 23. Partial Replacement of Cement with Marble and Ceramic Waste Powders in Normal Strength Concrete -- Chapter 24. Analytical and Experimental studies on proposed wing configurations of Cessna 172-R aircraft for improved performance -- Chapter 25. Investigation of Existing Building Condition for maintenance: Prolonging its Service life: The case of CBE Bure Branch.

Sommario/riassunto

This book comprises selected papers from the proceedings of the 10th EAI International Conference on Advancements of Science and Technology (EAI ICAST 2022). It presents the latest developments, innovations, and sustainable technologies in materials and energy, covering various research methods, including numerical and experiment analysis. Materials-related topics focus on construction, energy, and other material replacements for various applications. Energy-related topics covered include applications of solar technology, wind energy analysis, and related energy research. Presents selected papers from the 10th EAI International Conference on Advancements of Science and Technology; Covers current basic research in materials and energy; Relevant for researchers, academics, and professionals.
