1. Record Nr. UNINA9910523878103321

Autore	Berihun Mulatu Liyew
Titolo	Advances of Science and Technology : 9th EAI International Conference, ICAST 2021, Hybrid Event, Bahir Dar, Ethiopia, August 27–29, 2021, Proceedings, Part II / / edited by Mulatu Liyew Berihun
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	9783030937126 9783030937119
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (599 pages)
Collana	Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, , 1867-822X ; ; 412
Disciplina	600
Soggetti	Application software Artificial intelligence Computer systems Computer networks Computer and Information Systems Applications Artificial Intelligence Computer System Implementation Computer Communication Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Conference Organization -- Contents - Part II -- Contents - Part I -- Civil, Water Resources, and Environmental Engineering -- Investigation of Properties of Concrete Containing Recycled Concrete Coarse Aggregate and Waste Glass Powder -- 1 Introduction -- 2 Materials and Methods -- 2.1 Material Preparation -- 2.2 Chemical Test -- 2.3 Mix Proportion of Concrete Mixes -- 2.4 Concrete Casting and Curing -- 2.5 Compressive Strength Testing -- 2.6 Data Analysis of Test Results -- 3 Results and Discussions -- 3.1 Workability of Concrete Mixes -- 3.2 Compressive Strength -- 4 Conclusion -- References -- Application of Potential Based Cohesive Model for Analysis of Concrete Fracture -- Abstract -- 1 Introduction -- 2 Methodology -- 2.1 PPR Implementation in ABAQUS -- 3 Results

and Discussion -- 3.1 Validation of the PPR Model -- 3.2 Effect of Shape Parameters -- 3.3 Effect of Fracture Energy -- 4 Conclusion -- References -- Evaluations of Shallow Groundwater Recharges and Water Use Practices at Robit Watershed -- 1 Introduction -- 2 Materials and Research Methods -- 2.1 Description of the Study Area -- 2.2 Remote Sensing Data Processing -- 2.3 River Discharge Data Collection -- 2.4 Water Abstraction Survey -- 2.5 Determination of Crop Water and Irrigation Water Requirement -- 2.6 Descriptions of QSWAT Model -- 3 Results and Discussion -- 3.1 Land Use Map of the Study Area -- 3.2 Sensitivity Analysis -- 3.3 Calibration and Validation QSWAT Model -- 3.4 Spatial Variability of Irrigation Water Requirement -- 3.5 Estimation of Water Used for Irrigation -- 3.6 Estimation of Water Used for Livestock -- 3.7 Estimation of Water Used for Domestic Purposes -- 3.8 Estimation of Total Water Abstractions for the Watershed -- 3.9 Base Flow (Return Flow) -- 3.10 Availability of Groundwater Recharge. 3.11 The Interaction of Ground Water Use and Availability -- 3.12 Discussions and Comparison of the Current Study with the Other Studies -- 4 Conclusions -- References -- Experimental Study of Recycled Aggregate Concrete Produced from Recycled Fine Aggregate -- Abstract -- 1 Introduction -- 2 Materials and Experimental Design -- 2.1 Material Preparation and Properties -- 2.2 Mix Design -- 2.3 Test Methods for Materials -- 2.4 Experimental Design -- 2.5 Mixing and Testing Methods for Concrete -- 3 Results and Discussions -- 3.1 Workability of Concrete Produced from Recycled Concrete Aggregate -- 3.2 Compressive Strength Test -- 3.3 Cost Comparison -- 4 Conclusions -- References -- Prediction of Irrigation Water Supply Using Supervised Machine Learning Models in Koga Irrigation Scheme, Ethiopia -- Abstract -- 1 Introduction -- 2 Materials and Methods -- 2.1 Description of the Study Area -- 2.2 Field Investigation and Data Collection -- 2.3 Developing Models -- 3 Results and Discussion -- 3.1 Model Building and Variable Importance -- 4 Conclusions -- Acknowledgements -- References -- Numerical Investigation on the Effect of Reinforcement Shear Connectors in Load Bearing Capacity of Partially Encased Composite Beams -- Abstract -- 1 Introduction -- 2 Methodology -- 2.1 Numerical Modeling and Validation -- 2.2 Composite Beam Parametric Tests -- 2.2.1 Flange Length Effect -- 2.2.2 Location of Shear Connector -- 2.2.3 Web Height Effect -- 2.3 Composite Beam Comparative Tests -- 3 Result and Discussions -- 3.1 Validation Results -- 3.2 Parametric Modeling Results -- 3.2.1 Mesh Sensitivity Analysis -- 3.2.2 Flange Length of Shear Connectors -- 3.2.3 Location of Shear Connector -- 3.2.4 Web Height Effect of the Shear Connectors -- 3.3 Replacement of Headed Stud Shear Connector -- 4 Conclusion -- References.
Lake Level Fluctuation Impact on River Morphology Change -- Abstract -- 1 Introduction -- 2 Materials and Method -- 2.1 Description of Study Area -- 2.2 Data Formatting and Preparation -- 3 Results -- 3.1 One Dimensional Steady Flow Analysis -- 3.2 Back Water Profile Computation -- 4 Discussions -- 4.1 River Response to Lake Back Water Effect -- 4.2 Effect of Dyke Construction on Channel Aggradation -- 5 Conclusion -- Acknowledgments -- References -- Analyzing Seasonal Change of Water Quality Characteristics of Finote Selam Town Drinking Water Sources, Amhara, Ethiopia -- Abstract -- 1 Introduction -- 2 Materials and Methods -- 2.1 Study Area -- 2.2 Study Design -- 2.3 Sample Size and Sample Collection -- 2.4 Physicochemical Analysis -- 2.5 Microbiological Analysis -- 2.6 Data Analysis -- 3 Results and Discussion -- 3.1 Physicochemical Quality of Drinking Water Sources -- 3.2 Bacteriological Quality of Drinking Water Sources -- 4 Conclusion -- References -- Impact of Land Use Land Cover Dynamics on Stream

Flow: A Case of Borkena Watershed, Awash Basin, Ethiopia -- Abstract -- 1 Introduction -- 2 Methodology -- 2.1 Description of the Study Area -- 2.2 Method and Material -- 2.3 Data Processing and Analysis -- 2.4 SWAT Model Set-Up and Simulation -- 2.5 Evaluation of Streamflow Variability Due to LULC Change -- 3 Results and Discussion -- 3.1 Land Use Land Cover Change Analysis -- 3.2 Streamflow Modeling -- 3.3 Evaluation of Streamflow Due to Land Use Land Covers Change -- 4 Conclusion -- Acknowledgments -- Author Contributions -- References -- Application of in Situ Thermal Imaging to Estimate Crop Water Stress and Crop Water Requirements for Wheat in Koga Irrigation Scheme, Ethiopia -- Abstract -- 1 Introduction -- 2 Methodology -- 2.1 Description of the Study Area -- 2.2 Description of Irrigation Scheduling Tools.
2.3 Experimental Design and Treatment Setting -- 2.4 Data Collection -- 2.5 Data Analysis -- 2.6 Statistical Analysis -- 3 Results and Discussion -- 3.1 Irrigation Depth Applied Under Different Irrigation Treatments -- 3.2 Variation in CWSI Between Irrigation Treatments -- 3.3 Relationship Between CWSI, Soil Water Status and Stomatal Conductance -- 3.4 Estimated Crop Evapotranspiration (ETc) -- 3.5 Irrigation Water Productivity -- 3.6 Estimated Gross Irrigation Requirement -- 4 Conclusions -- Acknowledgments -- References -- Effect of Glass Fiber on Fracture Energy of Plain Concrete -- Abstract -- 1 Introduction -- 2 Methodology -- 2.1 Materials -- 2.2 Procedures -- 3 Results and Discussion -- 3.1 Effects Observed During the Experimental Periods -- 4 Conclusions -- References -- Assessment of Flood Hazard Areas Using Remote Sensing and Spatial Information System in Bilate River Basin, Ethiopia -- Abstract -- 1 Introduction -- 2 Materials and Methods -- 2.1 Description of Study Area -- 2.2 Source of Data Used -- 2.3 Methodology -- 3 Results and Discussion -- 3.1 Design Rainfall of 50 Years Return Period -- 3.2 Curve Number (CN) -- 3.3 The Normalized Difference Vegetation Index (NDVI) -- 3.4 Topography (Slope) -- 3.5 Distance from Drainage Network -- 3.6 Population Density (Inhabitants/km2) -- 3.7 Result of Weighted Overlay Analysis -- 4 Conclusion -- Acknowledgment -- References -- Torsional Behavior of Steel Fiber Reinforced Concrete: A Review -- Abstract -- 1 Introduction -- 1.1 Material and Its Effect on Concrete Structures -- 1.2 Research Significance -- 2 Failure and Analysis Highlight -- 3 Effect of SFRC in Torsional Members -- 3.1 Concrete or Matrix Strength -- 3.2 Fiber Aspect Ratio -- 3.3 Fiber Volume Ratio -- 3.4 Steel Fiber as a Reinforcement Option -- 4 Conclusion -- References -- Mechanical and Industrial Engineering.
Performance Analysis of Cotton Seed Biodiesel in Diesel Vehicle on Chassis Dynamometer -- Abstract -- 1 Introduction -- 2 Methodology -- 2.1 Materials -- 2.2 Biodiesel Production -- 2.2.1 Transesterification of Cotton Seed Oil -- 2.2.2 Characterization of Cotton Seed Biodiesel -- 2.2.3 Experimental Facilities for the Test -- 2.2.4 Emission and Performance Test Procedure in Diesel Vehicle -- 3 Result and Discussion -- 3.1 Oil Content from Extraction -- 3.2 Production of Biodiesel -- 3.3 Results from Emission Test -- 3.4 Vehicle Performance Test -- 3.5 Engine Performance Curves for Diesel and Biodiesel Blend -- 4 Conclusions -- References -- Computational Fluid Dynamics Modeling of the Spray Process of Resin Over a Laid Up Fiber Stack for the Purpose of Fiber Impregnation and Composite Materials Manufacturing -- Abstract -- 1 Introduction -- 2 Material and Methods -- 2.1 General Model Setup -- 2.2 CFD Modeling Setup up for the Spray -- 2.3 Mesh Generation and Analysis Mesh Generation and Analysis -- 2.4 Governing Equations -- 3 Results and Discussion -- 4 Conclusion and Recommendation -- References -- Performance Evaluation of

Locally Fabricated Public Water Cooler -- Abstract -- 1 Introduction -- 2 Methods and Materials -- 3 Result and Discussion -- 3.1 Comparisons of Theoretical and Experimental Results -- 3.2 Comparison of Previse Investigation with the New Study -- 4 Conclusion -- References -- Recycled Polymer for FDM 3D Printing Filament Material: Circular Economy for Sustainability of Additive Manufacturing -- Abstract -- 1 Introduction -- 2 Plastic Solid Wastes and Its Management Techniques -- 2.1 Plastic Solid Wastes -- 2.2 Plastic Waste Environmental Pollution -- 2.3 Plastic Waste Management -- 3 Polymers for FDM Additive Manufacturing -- 3.1 Commonly Used Polymers for FDM Additive Manufacturing.
3.2 Mechanical Recycling of Waste Plastic for 3D Printing Filament.

Sommario/riassunto

This two-volume set of LNICST 411 and 412 constitutes the refereed post-conference proceedings of the 9th International Conference on Advancement of Science and Technology, ICAST 2021, which took place in August 2021. Due to COVID-19 pandemic the conference was held virtually. The 80 revised full papers were carefully reviewed and selected from 202 submissions. The papers present economic and technologic developments in modern societies in 7 tracks: Chemical, Food and Bioprocess Engineering; Electrical and Electronics Engineering; ICT, Software and Hardware Engineering; Civil, Water Resources, and Environmental Engineering ICT; Mechanical and Industrial Engineering; Material Science and Engineering; Energy Science, Engineering and Policy.