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Nota di contenuto	Modelling Bearing Capacity of Bored Piles under Vertical Eccentric load within Python Framework -- An improved methodology for precise estimation of fracture process zone size -- Investigation of the effect of Stiffener parameters on Post Buckling strength of stiffened composite panels using FEA -- Identifying the cracks in beam structures using a simplified substructure technique -- Analysis of the non-circular suture designs on Bio-inspired materials -- Finite Element Analysis of Drilling Process in Carbon Fiber Composite Material:

Mechanical Behavior and Delamination Prevention -- A Systematic Survey on Dynamic Analysis of Functionally Graded rotor systems -- Mass Optimization of bracket -- Detection and Prediction of Bond Degradation for Piezo Impedance based Structural Health Monitoring (PISHM) Using Hybrid Deep Learning Model -- Modelling and Diagnosis of Faults in Deep Groove Ball Bearing -- Damage Assessment in Coated Femoral Stem Using Numerical Analysis -- Analysis of prestressed Shape Memory Alloy Actuator for Compliant Mechanism -- Free Vibration Analysis of Hybrid Fiber Metal Laminated Panels -- Finite Element Model Updating using Modal Data -- An Approximate Analytical Solution for Metal-FRP Circular Toroidal Pressure Vessel -- Effect of Focused Ultrasound on Shear Wave Propagation in Nonlinear Media -- Operational Modal Identification Using Bayesian Approach -- Influence of geometric variation of internal block on dynamic characteristics of base-isolated rectangular liquid tank -- Damage Initiation and Strength Predictions of Randomly Oriented Strands of Prepreg-Based Discontinuous Composites -- Analysis of Bistable Arches Connected at the Centre with Pinned Boundary conditions -- A new reduced order model of soil-structure interaction problem using deep learning -- Seismic fragility analysis of dam-reservoir system by including spatial variability of ground motion -- Elastic response of hydrogels under finite deformations -- Elastic response of hydrogels under finite deformations -- A CDM Based Modelling and Prediction of Progressive Damage in Z-pinned Unidirectional Laminated Composites -- Thermomechanical Homogenization of Corrugated Core Sandwich Structure using First Order Shear and Normal Deformation Theory -- The effect of hydroxyl functionalized MWCNTs on the interlaminar fracture toughness of Basalt fiber-reinforced epoxy composite -- On the satisfaction of natural & essential boundary conditions for bending in nanobeams within the framework of Eringen’s nonlocal elasticity theory -- Thermally-induced concrete properties at elevated temperature -- Strength and Deformation Assessment of a Tall RCMRF Designed by Force Based Design method and Performance Based Plastic Design method -- Residual Stress Prediction for Butt-Welded Plate Joint with Unequal Plate-Thickness using Artificial Neural Networks -- Blended Binder Geopolymer Concrete: The-Current-State-of-Art -- Effect of H-shaped Plan Geometry on Lateral-Torsional Response of Buildings under Earthquake Shaking – An Elastic Study -- Numerical Analysis of Miniature Disk Bend Specimens under Creep Condition -- Analyzing the saint-venant end effects in cellular lattice structures -- Modelling and Diagnosis of High Contact Ratio Gear Faults -- Micromechanical analysis of carbon/carbon composites with pore characterization.

Sommario/riassunto

This book presents select proceedings of the 4th Structural Integrity Conference and Exhibition (SICE-2022), organized at the Indian Institute of Technology, Hyderabad. This book includes chapters written by eminent scientists and academicians broadly working in aerospace, civil, and mechanical and materials engineering within the areas of structural integrity, life prediction, and condition monitoring. These chapters are classified under the domains of aerospace, fracture mechanics, fatigue, civil structures, experimental techniques, computation mechanics, molecular dynamics and nanostructures, smart materials, energy impact, dynamics, mechanisms, structural optimization, composites, AI/ML applications, additive and advanced manufacturing, bio-engineering, structural health monitoring, nondestructive testing, and damage and failure analysis. The book can be a valuable reference for researchers, students and practicing engineers.