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| Nota di contenuto | Gearbox fault identification under non-Gaussian noise and time-varying operating conditions -- A Multiple- Grid technique–based Finite Element solution of free-surface flows in a trapezoidal open channel -- Rotor-ball bearings system under variable regime -- The Efficiency of the Rayleigh-Ritz Method Applied to In-Plane Vibrations of Circular Arches Elastically Restrained at the Two Ends and Supporting Point Masses -- Nonlinear Wind-induced Response Analysis of Substation Down-Conductor System -- Bending fatigue behaviour of a bio-based sandwich with conventional and auxetic honeycomb core -- Thermoplastic Elium recycling: Mechanical behaviour and damage mechanisms analysis by acoustic emission -- Passive control of Tensegrity domes using Tuned Mass Dampers, a reliability approach -- Dynamic analysis of a pumping station with coupling misalignment fault -- On the unidirectional free-surface flow solution in a rectangular open channel -- On the numerical solution of the rapidly |

varied regime in open-channel flows -- Controlling of steel-pipe - based hydraulic systems using dual in-series polymeric short-sections -- Large strokes of a piezocomposite energy harvester with interdigitated electrodes accounting for geometric and material nonlinearities -- Transient comprehensive modelling due to pump failure -- Innovative In-plane converter design for a Capacitive Energy Harvester -- Dynamic interaction between transmission error and friction coefficients for FZG-A10 spur gears -- Optimal linear quadratic stabilization of amagnetic bearing system -- Evaluation of the acoustic performance of perforated multilayer absorber materials -- An anisotropic model with non-associated flow rule to predict HCP sheet metal ductility limit -- A model for simulating transients in looped viscoelastic pipe systems. Preliminary results -- Analytical approach in the pre-design phase for vibration analysis of a flexible multibody system -- Pressure calculation and fatigue of a trans-tibial prosthetic socket made from natural fiber composite -- Online Adaptive MFC for Nonlinear Active Half Car System -- The interaction of different transmission system using the substructuring method -- Combined Effect of Roughness Anisotropy and Roughness Parameters on the Friction Behavior under Boundary Lubrication -- A new dynamic model for worm drives -- Shear-Normal Coupling Effects on Composite Shafts Dynamic Behaviour -- Experiments and Computations of a Vibrating Beam Coupled to a Granular Chain Impact Damper.

Sommario/riassunto

The book provides readers with a snapshot of recent research and industrial trends in field of industrial acoustics and vibration. Each chapter, accepted after a rigorous peer-review process, reports on a selected, original piece of work presented and discussed at the Third International Conference on Acoustics and Vibration (ICAV2021), which was organized by the Tunisian Association of Industrial Acoustics and Vibration (ATAVI) and held online on March 15-16, 2021, from Sfax, Tunisia. The contributions cover advances in both theory and practice in a variety of subfields, such as: smart materials and structures; fluid-structure interaction; structural acoustics as well as computational vibro-acoustics and numerical methods. Further topics include: engines control, noise identification, robust design, flow-induced vibration and many others. This book provides a valuable resource for both academics and professionals dealing with diverse issues in applied mechanics. By combining advanced theories with industrial issues, it is expected to facilitate communication and collaboration between different groups of researchers and technology users.