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This collection of cutting-edge research explores advances in vibration suppression, sound absorption, and materials optimization. Highlights include the optimization of thin-walled cylindrical shells using graded materials, innovative approaches to material damping simulation, and the integration of acoustic metamaterials for noise reduction. Studies also look at the sound absorption properties of non-woven fabrics, granular materials, and meshes, as well as improving the dynamic response of metabeton beams and cellular rubber composites. Each study combines experimental and theoretical methods to offer new insights and practical applications in the fields of structural dynamics, acoustics, and materials science.



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