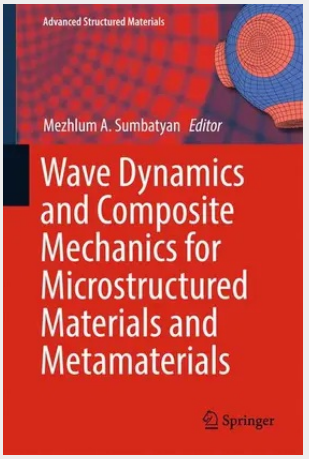
Sumbatyan

Wave Dynamics and Composite Mechanics for Microstructured Materials and Metamaterials



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The book provides solutions, based on fundamental methods and models using the theory of wave propagation, nonlinear theories and composite mechanics for media with micro- and nanostructure. They include the models containing arrays of cracks, defects, with presence of micro- and nanosize piezoelectric elements and coupled physical-mechanical fields of different nature.

The investigations show that the analytical, numerical and experimental methods permit evaluation of the qualitative and quantitative properties of the materials of this sort, with diagnosis of their effective characteristics, frequency intervals of effective energetic cutting and passing, as well as effective regimes of damage evaluation by the acoustic methods.

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149,79 €
139,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9789811037962
Medium: Buch
ISBN: 978-981-10-3796-2
Verlag: Palgrave Macmillan
Erscheinungstermin: 06.04.2017
Sprache(n): Englisch
Auflage: 1. Auflage 2017
Serie: Advanced Structured Materials
Produktform: Gebunden
Gewicht: 5325 g
Seiten: 258
Format (B x H): 160 x 241 mm