

Advanced Structured Materia

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Surface Effects

in Solid Mechanics

Models, Simulations and Applications

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Surface Effects in Solid Mechanics

Models, Simulations and Applications

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- Examines the influence of surface effects like nanostructures to mechanical properties
- Summarizes the actual state of the art and future trends of surface effects
- Presents various applications

This book summarizes the actual state of the art and future trends of surface effects in solid mechanics. Surface effects are more and more important in the precise description of the behavior of advanced materials. One of the reasons for this is the well-known from the experiments fact that the mechanical properties are significantly influenced if the structural size is very small like, for example, nanostructures. In this book, various authors study the influence of surface effects in the elasticity, plasticity, viscoelasticity. In addition, the authors discuss all important different approaches to model such effects. These are based on various theoretical frameworks such as continuum theories or molecular modeling. The book also presents applications of the modeling approaches.

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