Nanocoatings
Size Effect in Nanostructured Films

Size effect in structures has been taken into consideration over the last years. In comparison with coatings with micrometer-ranged thickness, nanostructured coatings usually enjoy better and appropriate properties, such as strength and resistance. These coatings enjoy unique magnetic properties and are used with the aim of producing surfaces resistant against erosion, lubricant system, cutting tools, manufacturing hardened sporadic alloys, being resistant against oxidation and corrosion. This book reviews researches on fabrication and classification of nanostructured coatings with focus on size effect in nanometric scale. Size effect on electrochemical, mechanical and physical properties of nanocoatings are presented.

Features
- Original book emphasizing the size effect on thin films
- Special sub/chapter about commercialization of nanostructured coatings
- Introduction of new methods for fabrication of nanostructures with desirable size dependency

Contents
Preface.- Synthesis, processing and application of nanostructured coatings.- Size dependency in nanostructures.- Characterization of nanostructured coatings.- Size effect in electrochemical properties of nanostructured coatings.- Size effect in mechanical properties of nanostructured coatings.- Size effect in physical and other properties of nanostructured coatings.- Conclusions.- Index.

Fields of interest
Nanotechnology; Tribology, Corrosion and Coatings; Surfaces and Interfaces; Thin Films

Target groups
Research

Type of publication
Monograph
Hybrid Adhesive Joints

This volume presents the material science and mechanical issues of hybrid adhesive bonds which are a combination of adhesive bonding rather than mechanical fasteners. The idea of hybrid joints is to gather the advantages of the different techniques leaving out their problems. Some of the advantages of these joints are a higher static and fatigue strength and a higher stiffness with respect to simple joints, a two-stage cracking process before the final failure and improved durability. The book treats all important kinds of joints which are in use today: weld – adhesive, rivet – adhesive, clinch – adhesive, bolt – adhesive, and adhesive – adhesive. A section dedicated to threadlocking and interference-fit adhesive joints is also included. All sections are treated from a scientific point of view with modeling issues supported by simple coupons testing and a technological point of view where the idea is to present more applied results with practical cases.

Features
- Gathers the advantages of the combining different jointing techniques
- Covers all hybrid techniques of bonding

Contents

Fields of interest
Tribology, Corrosion and Coatings; Continuum Mechanics and Mechanics of Materials

Target groups
Research

Type of publication
Monograph

Due March 2011


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- * € (D) 139,05 | € (A) 142,94 | sFr 186,50
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- approx. € 89,95 | £69.99
- * approx. € (D) 96,25 | € (A) 98,95 | sFr 129,00

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Fatigue of Fiber-reinforced Composites

Fatigue of Fiber-reinforced Composites presents a wealth of information accumulated over more than ten years of research. Highly scientific subjects are addressed with simplicity, and explained thoroughly. The fatigue behavior of several types of composite materials is described by presentation of numerous experimental results. Based on this experimental data, theoretical models are demonstrated and their ability to predict fatigue life is thoroughly discussed. Using all of the aforementioned information, a complete design methodology is introduced. Finally, novel methods for modeling or predicting the fatigue life of composites are described.

Fatigue of Fiber-reinforced Composites is a valuable reference for researchers and graduate students in mechanical engineering, civil engineering, and materials science.

Features
- Describes the fatigue behavior of several types of composite materials
- Presents basic fatigue issues, as well as innovative theories in a very comprehensive way
- Gives novel methods for modelling/predicting fatigue life

Fields of interest
Ceramics, Glass, Composites, Natural Materials; Continuum Mechanics and Mechanics of Materials; Building Materials

Target groups
Research

Type of publication
Monograph

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