

1. Record Nr.	UNINA9910779757003321
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Titolo	Advanced mechanics of composite materials and structural elements / / Valery V. Vasiliev, Professor of Structural Mechanics, Institute for Problems in Mechanics, Russian Academy of Sciences, Moscow ; Evgeny V. Morozov, Professor of Mechanical Engineering, School of Engineering & IT, the University of New South Wales, Canberra, Australia
Pubbl/distr/stampa	Oxford, : Elsevier, 2013 Oxford : , : Elsevier, , 2013
ISBN	0-08-098267-0
Edizione	[3rd ed.]
Descrizione fisica	1 online resource (xiii, 818 pages) : illustrations (some color)
Collana	Gale eBooks
Disciplina	620.11892
Soggetti	Composite materials - Mechanical properties Fibrous composites - Mechanical properties
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Front Cover; Advanced Mechanics of Composite Materials and Structural Elements; Copyright; Contents; Preface to the Third Edition; Chapter 1 - Introduction; 1.1 STRUCTURAL MATERIALS; 1.2 COMPOSITE MATERIALS; 1.3 References; Chapter 2 - Fundamentals of mechanics of solids; 2.1 STRESSES; 2.2 EQUILIBRIUM EQUATIONS; 2.3 STRESS TRANSFORMATION; 2.4 PRINCIPAL STRESSES; 2.5 DISPLACEMENTS AND STRAINS; 2.6 TRANSFORMATION OF SMALL STRAINS; 2.7 COMPATIBILITY EQUATIONS; 2.8 ADMISSIBLE STATIC AND KINEMATIC FIELDS; 2.9 CONSTITUTIVE EQUATIONS FOR AN ELASTIC SOLID; 2.10 FORMULATIONS OF THE PROBLEM 2.11 VARIATIONAL PRINCIPLES 2.12. Reference; Chapter 3 - Mechanics of a unidirectional ply; 3.1 PLY ARCHITECTURE; 3.2 FIBER-MATRIX INTERACTION; 3.3 MICROMECHANICS OF A PLY; 3.4 MECHANICAL PROPERTIES OF A PLY UNDER TENSION, SHEAR, AND COMPRESSION; 3.5 HYBRID COMPOSITES; 3.6 COMPOSITES WITH HIGH FIBER FRACTION; 3.7 PHENOMENOLOGICAL HOMOGENEOUS MODEL OF A PLY; 3.8 References; Chapter 4 - Mechanics of a composite layer; 4.1 ISOTROPIC LAYER; 4.2 UNIDIRECTIONAL ORTHOTROPIC LAYER; 4.3 UNIDIRECTIONAL ANISOTROPIC LAYER; 4.4 ORTHOGONALLY

REINFORCED ORTHOTROPIC LAYER; 4.5 ANGLE-PLY ORTHOTROPIC LAYER
 4.6 LAYER MADE BY ANGLE-PLY CIRCUMFERENTIAL WINDING
 4.7 FABRIC LAYERS; 4.8 LATTICE LAYER; 4.9 SPATIALLY REINFORCED LAYERS AND BULK MATERIALS; 4.10 References; Chapter 5 - Mechanics of laminates;
 5.1 STIFFNESS COEFFICIENTS OF A NONHOMOGENEOUS ANISOTROPIC LAYER; 5.2 STIFFNESS COEFFICIENTS OF A HOMOGENEOUS LAYER; 5.3 STIFFNESS COEFFICIENTS OF A LAMINATE; 5.4 SYMMETRIC LAMINATES; 5.5 ENGINEERING STIFFNESS COEFFICIENTS OF ORTHOTROPIC LAMINATES; 5.6 QUASI-HOMOGENEOUS LAMINATES; 5.7 QUASI-ISOTROPIC LAMINATES IN THE PLANE STRESS STATE; 5.8 ANTISYMMETRIC LAMINATES; 5.9 SANDWICH STRUCTURES
 5.10 COORDINATE OF THE REFERENCE PLANE
 5.11 STRESSES IN LAMINATES; 5.12 References; Chapter 6 - Failure criteria and strength of laminates; 6.1 FAILURE CRITERIA FOR AN ELEMENTARY COMPOSITE LAYER OR PLY; 6.2 PRACTICAL RECOMMENDATIONS; 6.3 EXAMPLES; 6.4 ALLOWABLE STRESSES FOR LAMINATES CONSISTING OF UNIDIRECTIONAL PLIES; 6.5 PROGRESSIVE FAILURE: MODELING AND ANALYSIS; 6.6 References; Chapter 7 - Environmental, special loading, and manufacturing effects; 7.1 TEMPERATURE EFFECTS; 7.2 HYGROTHERMAL EFFECTS AND AGING; 7.3 TIME-DEPENDENT LOADING EFFECTS; 7.4 MANUFACTURING EFFECTS; 7.5 References
 Chapter 8 - Laminated composite beams and columns
 8.1 BASIC EQUATIONS; 8.2 STIFFNESS COEFFICIENTS; 8.3 BENDING OF LAMINATED BEAMS; 8.4 NONLINEAR BENDING; 8.5 BUCKLING OF COMPOSITE COLUMNS; 8.6 FREE VIBRATIONS OF COMPOSITE BEAMS; 8.7 REFINED THEORIES OF BEAMS AND PLATES; 8.8 References; Chapter 9 - Laminated composite plates; 9.1 EQUATIONS OF THE THEORY OF ANISOTROPIC LAMINATED PLATES; 9.2 EQUATIONS FOR THE ORTHOTROPIC PLATES WITH SYMMETRIC STRUCTURE; 9.3 ANALYSIS OF THE EQUATIONS OF PLATE THEORY FOR TRANSVERSELY ISOTROPIC PLATES; 9.4 BENDING OF ORTHOTROPIC SYMMETRIC PLATES
 9.5 BUCKLING OF ORTHOTROPIC SYMMETRIC PLATES

Sommario/riassunto

This book analyzes contemporary theoretical models at the micro and macro levels of material structure. It covers practical methods and approaches, experimental results, and optimization of composite material properties and structural component performance, and includes new coverage of beams, plates and shells.

2. Record Nr.	UNINA9910416111003321
Titolo	Encyclopedia of Gerontology and Population Aging // edited by Danan Gu, Matthew E. Dupre
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-319-69892-3
Disciplina	305.26
Soggetti	Aging Geriatrics Population Environmental health Social medicine Gerontologia Envelliment Geriatrics/Gerontology Population Economics Environmental Health Medical Sociology Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This encyclopedia brings together established and emerging research findings in all relevant disciplines of gerontology and population aging. It provides comprehensive coverage of the entire breadth of the field, gives readers access to all major sub-fields and illustrates their interconnectedness with other disciplines. The more than 1,100 entries delve deep into key areas of gerontology and population aging—such as successful aging, disablement, ageism, longevity, biodemography, long-term care, and much more. Paying careful attention to national and international research, it cites English and non-English empirical

literature from around the globe. In doing so, the encyclopedia is of interest to a wide audience that includes researchers, teachers and students, policy makers, nongovernmental agencies, public health practitioners, business marketing planners, futurists and strategists, and many other individuals and organizations. The encyclopedia brings together nearly 1,400 cross-disciplinary contributors, including academic researchers, biologists, psychiatrists, sociologists, anthropologists and public policy experts, and includes authors from around the world.
