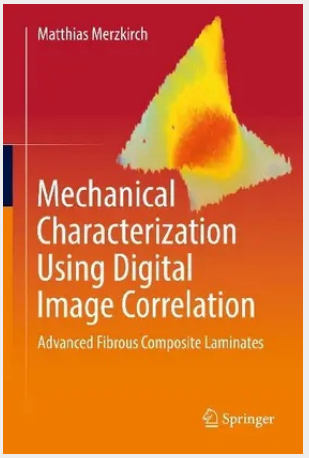
Merzkirch

Mechanical Characterization Using Digital Image Correlation

Advanced Fibrous Composite Laminates



In this book, a precise treatment of the experimental characterization of advanced composite materials using Digital Image Correlation (DIC) is presented. The text explains test methods, testing setup with 2D- and stereo-DIC, specimen preparation and patterning, testing analysis and data reduction schemes to determine and to compare mechanical properties, such as modulus, strength and fracture toughness of advanced composite materials. Sensitivity and uncertainty studies on the DIC calculated data and mechanical properties for a detailed engineering-based understanding are covered instead of idealized theories and sugarcoated results. The book provides students, instructors, researchers and engineers in industrial or government institutions, and practitioners working in the field of experimental/applied structural mechanics of materials a myriad of color figures from DIC measurements for better explanation, datasets of material properties serving as input parametersfor analytical modelling, raw data and computer codes for data reduction, illustrative graphs for teaching purposes, practice exercises with solutions provided online and extensive references to the literature at the end of each stand-alone chapter.

In this book, a precise treatment of the experimental characterization of advanced composite materials using Digital Image Correlation (DIC) is presented. The text explains test methods, testing setup with 2D- and stereo-DIC, specimen preparation and patterning, testing analysis and data reduction schemes to determine and to compare mechanical properties, such as modulus, strength and fracture toughness of advanced composite materials. Sensitivity and uncertainty studies on the DIC calculated data and mechanical properties for a detailed engineering-based understanding are covered instead of idealized theories and sugarcoated results. The book provides students, instructors, researchers and engineers in industrial or government institutions, and practitioners working in the field of experimental/applied structural mechanics of materials a myriad of color figures from DIC measurements for better explanation, datasets of material properties serving as input parametersfor analytical modelling, raw data and computer codes for data reduction, illustrative graphs for teaching purposes, practice exercises with solutions provided online and extensive references to the literature at the end of each stand-alone chapter.

90,94 €
84,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783030840396
Medium: Buch
ISBN: 978-3-030-84039-6
Verlag: Springer
Erscheinungstermin: 15.12.2021
Sprache(n): Englisch
Auflage: 1. Auflage 2022
Produktform: Gebunden
Gewicht: 646 g
Seiten: 295
Format (B x H): 160 x 241 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)