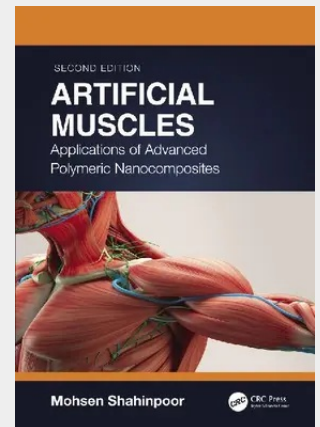


Artificial Muscles

Applications of Advanced Polymeric Nanocomposites

Smart materials are the way of the future in a variety of fields, from biomedical engineering and chemistry to nanoscience, nanotechnology, and robotics. Featuring an interdisciplinary approach to smart materials and structures, this second edition of *Artificial Muscles: Applications of Advanced Polymeric Nanocomposites* has been fully updated to thoroughly review the latest knowledge of ionic polymeric conductor nanocomposites (IPNCs), including ionic polymeric metal nanocomposites (IPMNCs) as biomimetic distributed nanosensors, nanoactuators, nanotransducers, nanorobots, artificial muscles, and electrically controllable intelligent polymeric network structures. Authored by one of the founding fathers of the field, the book introduces fabrication and manufacturing methods of several electrically and chemically active ionic polymeric sensors, actuators, and artificial muscles, as well as a new class of electrically active polymeric nanocomposites and artificial muscles. It also describes a few apparatuses for modeling and testing various artificial muscles to show the viability of chemoactive and electroactive muscles. It presents the theories, modeling, and numerical simulations of ionic polymeric artificial muscles' electrodynamics and chemodynamics and features current industrial and medical applications of IPMNCs. By covering the fabrication techniques of and novel developments in advanced polymeric nanocomposites, this second edition continues to provide an accessible yet solid foundation to the subject while stimulating further research. Key features: - Fully up to date with the latest cutting-edge discoveries in the field - Authored by a world expert in the subject area - Explores the exciting and growing topic of smart materials in medicine Mohsen Shahinpoor is Professor of Mechanical Engineering at the University of Maine and a leading expert in artificial muscles.

Authored by one of the founding fathers of the field, the book introduces fabrication and manufacturing methods of several electrically and chemically active ionic polymeric sensors, actuators, and artificial muscles, as well as a new class of electrically active polymeric nanocomposites and artificial muscles.



291,20 €

291,20 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780367857905

Medium: Buch

ISBN: 978-0-367-85790-5

Verlag: CRC Press

Erscheinungstermin: 31.12.2021

Sprache(n): Englisch

Auflage: 2. Auflage 2021

Produktform: Gebunden

Gewicht: 963 g

Seiten: 408

Format (B x H): 183 x 260 mm

