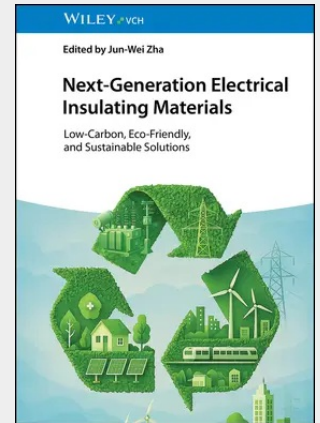


Next-Generation Electrical Insulating Materials

Low-Carbon, Eco-Friendly, and Sustainable Solutions

Highlights milestone developments in degradable, recyclable, and self-healing insulating materials for the power industry. The global transition toward low-carbon and sustainable energy systems has placed electrical insulating materials at the forefront of research and application. As essential components in electrical and electronic engineering, insulating materials determine not only the efficiency and reliability of power equipment but also its environmental footprint. Yet, traditional insulating systems face significant challenges—resource depletion, pollution, and limited recyclability—that are increasingly incompatible with global climate and sustainability goals. *Next-Generation Electrical Insulating Materials: Low-Carbon, Eco-Friendly, and Sustainable Solutions* systematically addresses solid, liquid, and gas insulating materials in the context of sustainability. Covering fundamental insulating, dielectric, thermal, and mechanical properties, contributions from leading experts explore recent breakthroughs in degradable, recyclable, and self-healing materials. The book provides detailed evaluations of material innovations and their practical implications for the safe operation of electrical systems. Dedicated chapters on plastics, resins, rubbers, paper, oils, and gases are accompanied by critical examinations of current challenges and a discussion of future directions of the field. Blending foundational theory and cutting-edge advances to illustrate how insulating materials can support the energy transition and drive innovation in sustainable power systems, *Next-Generation Electrical Insulating Materials: - Introduces a systematic framework linking material properties with low-carbon performance requirements - Highlights six categories of insulating materials with breakthrough developments in greener alternatives - Provides multi-dimensional evaluation methods for optimizing material performance in real-world conditions - Examines synergistic improvements of green insulating materials in power equipment - Offers detailed prospects for innovation, from recyclable designs to advanced degradable materials* Both an introductory resource and an advanced reference across multiple engineering disciplines, *Next-Generation Electrical Insulating Materials: Low-Carbon, Eco-Friendly, and Sustainable Solutions* is essential reading for graduate students, researchers, and engineers in electrical engineering, materials science, and polymer chemistry. It is well-suited for courses in Electrical Materials and Insulation Technology at master's and doctoral levels, and is a valuable reference for professionals in the power, electronics, and chemical industries.



149,00 €

139,25 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783527355709

Medium: Buch

ISBN: 978-3-527-35570-9

Verlag: WILEY-VCH

Erscheinungstermin: 22.04.2026

Sprache(n): Englisch

Auflage: 1. Auflage 2026

Produktform: Gebunden

Gewicht: 680 g

Seiten: 416

Format (B x H): 170 x 244 mm

