Record Nr. UNINA9910299625503321 Autore Topolov Vitaly Yu Titolo Piezo-active composites: orientation effects and anisotropy factors // Vitaly Yu. Topolov, Paolo Bisegna, Christopher R. Bowen Heidelberg [Germany]:,: Springer,, 2014 Pubbl/distr/stampa 3-642-38354-8 **ISBN** Edizione [1st ed. 2014.] Descrizione fisica 1 online resource (xv, 169 pages): illustrations (some color) Collana Springer Series in Materials Science, , 0933-033X ; ; 185 Disciplina 620.11 Piezoelectric materials Soggetti Piezoelectricity Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia "ISSN: 0933-033X." Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Piezoelectric Medium and Its Electromechanical Properties --Orientation Effects and Anisotropy of Properties in Single Crystals --Orientation Effects and Anisotropy of Properties in 2–2 and Related Composites -- Orientation Effects and Anisotropy of Properties in 1–3 and Related Composites -- Orientation Effects and Anisotropy of Properties in 0-3 Composites -- Microgeometry - Properties -Anisotropy Relations in Piezo-active Composites: New Trends. Sommario/riassunto The book is devoted to the problem of microgeometry properties and anisotropy relations in modern piezo-active composites. These materials are characterized by various electromechanical properties and remarkable abilities to convert mechanical energy into electric energy and vice versa. Advantages of the performance of the composites are discussed in the context of the orientation effects, first studied by the authors for main connectivity patterns and with due regard to a large anisotropy of effective piezoelectric coefficients and electromechanical coupling factors. The novelty of the book consists in the systematization results of orientation effects, the anisotropy of piezoelectric properties and their role in forming considerable hydrostatic piezoelectric coefficients, electromechanical coupling

factors and other parameters in the composites based on either ferroelectric ceramic or relaxor-ferroelectric single crystals.