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| Titolo | An Introduction to the Theory of Piezoelectricity // by Jiashi Yang |
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| ISBN | 3-030-03137-3 |
| Edizione | [2nd ed. 2018.] |
| Descrizione fisica | 1 online resource (IX, 287 p. 83 illus., 1 illus. in color.) |
| Collana | Advances in Mechanics and Mathematics, , 1876-9896 ; ; 9 |
| Disciplina | 537.2446 |
| Soggetti | Materials Catalysis Force and energy Energy harvesting Mechanics, Applied Solids Ceramic materials Materials for Energy and Catalysis Energy Harvesting Solid Mechanics Ceramics |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Nonlinear theory of electroelasticity -- Linear theory of piezoelectricity -- Static problems -- Waves in unbounded regions -- Vibrations of finite bodies -- Linear theory for small fields on a finite bias -- Other Effects -- Piezoelectric devices. |
| Sommario/riassunto | This textbook introduces theoretical piezoelectricity. The second edition updates a classical, seminal reference on a fundamental topic that is addressed in every materials science curriculum. It presents a concise treatment of the basic theoretical aspects of continuum modeling of electroelastic interactions in solids. The general nonlinear theory for large deformations and strong fields is established and specialized to the linear theory for small deformations and weak fields, i.e., the theory of piezoelectricity. Relatively simple and useful solutions |

of many static and dynamic problems of piezoelectricity that are useful in device applications are given. Emphasis is on the formulation of solutions to problems rather than advanced mathematical solution techniques. This book includes many examples to assist and enhance students' understanding of piezoelectricity and piezoelastics. Broad, systematic coverage of theoretical piezoelectricity, ideal for graduate courses on piezoelectric materials, ferroelectricity, and mechanics of materials; Contains over 30% updated content, reflecting thirteen years of burgeoning developments in the field; Establishes the general nonlinear theory for large deformations and strong fields and follows with simple and useful solutions of many static and dynamic problems of piezoelectricity that are useful in device applications. .
