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Titolo	Statistical Physics : A Prelude and Fugue for Engineers // by Roberto Piazza
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-44537-5
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XV, 453 p. 59 illus.)
Collana	UNITEXT for Physics, , 2198-7882
Disciplina	530.13
Soggetti	Statistical physics Dynamics Condensed matter Chemical engineering Mechanics Mechanics, Applied Complex Systems Condensed Matter Physics Industrial Chemistry/Chemical Engineering Solid Mechanics Statistical Physics and Dynamical Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	1 Playing by ear -- 2 The stave and the treble clef -- 3 Easy rhythms and melodies -- 4 Fluid chords -- 5 Scales in crescendo -- 6 Indistinguishable harmonies -- A Mathematical notes -- B Statistical entropy -- C The Boltzmann equation -- D Brownian motion and diffusion processes.
Sommario/riassunto	This book, provides a general introduction to the ideas and methods of statistical mechanics with the principal aim of meeting the needs of Master's students in chemical, mechanical, and materials science engineering. Extensive introductory information is presented on many general physics topics in which students in engineering are inadequately trained, ranging from the Hamiltonian formulation of

classical mechanics to basic quantum mechanics, electromagnetic fields in matter, intermolecular forces, and transport phenomena. Since engineers should be able to apply physical concepts, the book also focuses on the practical applications of statistical physics to material science and to cutting-edge technologies, with brief but informative sections on, for example, interfacial properties, disperse systems, nucleation, magnetic materials, superfluidity, and ultralow temperature technologies. The book adopts a graded approach to learning, the opening four basic-level chapters being followed by advanced “starred” sections in which special topics are discussed. Its relatively informal style, including the use of musical metaphors to guide the reader through the text, will aid self-learning. .

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