1. Record Nr. UNINA9911006543703321

Autore	Landau L. D (Lev Davidovich), <1908-1968.>
Titolo	Theory of elasticity / / by L.D. Landau and E.M. Lifshitz ; translated from the Russian by J.B. Sykes and W.H. Reid
Pubbl/distr/stampa	Oxford [Oxfordshire] ; ; New York, : Pergamon Press, 1986
ISBN	9780080570693
Edizione	[3rd English ed. /]
Descrizione fisica	1 online resource (197 p.)
Collana	Course of theoretical physics ; ; v. 7
Altri autori (Persone)	LifshitsE. M (Evgenii Mikhailovich) KosevichArnold Markovich PitaevskiiL. P (Lev Petrovich) SykesJ. B ReidW. H
Disciplina	531/.38
Soggetti	Elasticity Elastic solids
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Translation of: Teoriia uprugosti. Reprinted 1995, 1997, 1998, 1999, 2000, 2002, 2005.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Theory of Elasticity; Copyright Page; Table of Contents; Prefaces to the English editions; Notation; CHAPTER I. FUNDAMENTAL EQUATIONS; 1. The strain tensor; 2. The stress tensor; 3. The thermodynamics of deformation; 4. Hooke's law; 5. Homogeneous deformations; 6. Deformations with change of temperature; 7. The equations of equilibrium for isotropic bodies; 8. Equilibrium of an elastic medium bounded by a plane; 9. Solid bodies in contact; 10. The elastic properties of crystals; CHAPTER II. THE EQUILIBRIUM OF RODS AND PLATES; 11. The energy of a bent plate 12. The equation of equilibrium for a plate13. Longitudinal deformations of plates; 14. Large deflections of plates; 15. Deformations of shells; 16. Torsion of rods; 17. Bending of rods; 18. The energy of a deformed rod; 19. The equations of equilibrium of rods; 20. Small deflections of rods; 21. The stability of elastic systems; CHAPTER III. ELASTIC WAVES; 22. Elastic waves in an isotropic medium; 23. Elastic waves in crystals; 24. Surface waves; 25. Vibration of rods arid plates; 26. Anharmonic vibrations; CHAPTER IV. DISLOCATIONS

27. Elastic deformations in the presence of a dislocation28. The action of a stress field on a dislocation; 29. A continuous distribution of dislocations; 30. Distribution of interacting dislocations; 31. Equilibrium of a crack in an elastic medium; CHAPTER V. THERMAL CONDUCTION AND VISCOSITY IN SOLIDS; 32. The equation of thermal conduction in solids; 33. Thermal conduction in crystals; 34. Viscosity of solids; 35. The absorption of sound in solids; 36. Highly viscous fluids; CHAPTER VI. MECHANICS OF LIQUID CRYSTALS; 37. Static deformations of nematics
38. Straight disclinations in nematics39. Non-singular axially symmetrical solution of the equilibrium equations for a nematic; 40. Topological properties of disclinations; 41. Equations of motion of nematics; 42. Dissipative coefficients of nematics; 43. Propagation of small oscillations in nematics; 44. Mechanics of cholesterics; 45. Elastic properties of smectics; 46. Dislocations in smectics; 47. Equations of motion of smectics; 48. Sound in smectics; Index

Sommario/riassunto

A comprehensive textbook covering not only the ordinary theory of the deformation of solids, but also some topics not usually found in textbooks on the subject, such as thermal conduction and viscosity in solids.