Record Nr. UNINA9910460858403321 Autore Negahban Mehrdad Titolo The mechanical and thermodynamical theory of plasticity / / by Mehrdad Negahban Boca Raton, FL:,: CRC Press, an imprint of Taylor and Francis,, 2012 Pubbl/distr/stampa **ISBN** 0-429-10014-0 1-4665-6321-4 Edizione [First edition.] Descrizione fisica 1 online resource (776 p.) Disciplina 531/.385 Soggetti **Plasticity** Continuum mechanics Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di contenuto Front Cover; Dedication; Acknowledgments; Contents; Preface; 1. Plasticity in the 1-D bar; 2. Vectors and tensors; 3. Describing motion. deformation, and temperature; 4. Elastic, plastic, and thermal deformation; 5. Traction, stress, and heat flux; 6. Balance laws and jump conditions; 7. Infinitesimal plasticity; 8. Solutions for infinitesimal plasticity; 9. First-gradient thermomechanical materials; 10. Elastic and thermoelastic solids; 11. Finite deformation mechanical theory of plasticity; 12. Thermoplastic solids; 13. Viscoelastic solids; 14. Ratedependent plasticity 15. Crystal plasticityA. Representation of functions; B. Representation for fourth-order constants; C. Basic equations Born out of 15 years of courses and lectures on continuum mechanics. Sommario/riassunto nonlinear mechanics, continuum thermodynamics, viscoelasticity, plasticity, crystal plasticity, and thermodynamic plasticity, The Mechanical and Thermodynamical Theory of Plasticity represents one of the most extensive and in-depth treatises on the mechanical and thermodynamical aspects of plastic and visicoplastic flow. Suitable for student readers and experts alike, it offers a clear and comprehensive

presentation of multi-dimensional continuum thermodynamics to both aid in initial understanding and introduce and explore advanced topics.