1. Record Nr. UNINA9910254166003321

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Titolo	Fundamentals of Radiation Materials Science : Metals and Alloys / / by GARY S. WAS
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2017
ISBN	1-4939-3438-4
Edizione	[2nd ed. 2017.]
Descrizione fisica	1 online resource (XXVII, 1002 p. 625 illus., 448 illus. in color.)
Disciplina	620.16
Soggetti	Nuclear energy Metals Surfaces (Physics) Interfaces (Physical sciences) Thin films Nuclear Energy Metallic Materials Surface and Interface Science, Thin Films
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Part I Radiation Damage -- 1 The Radiation Damage Event -- 2 The Displacement of Atoms -- 3 The Damage Cascade -- 4 Point Defect Formation and Diffusion -- 5 Radiation-Enhanced and Diffusion Defect Reaction Rate Theory -- Part II Physical Effects of Radiation Damage -- 6 Radiation-Induced Segregation -- 7 Dislocation Microstructure -- 8 Irradiation-Induced Voids and Bubbles -- 9 Phase Stability Under Irradiation -- 10 Unique Effects of Ion Irradiation -- 11 Simulation of Neutron Irradiation Effects with Ions -- Part III Mechanical Effects of Radiation Damage -- 12 Irradiation Hardening and Deformation -- 13 Irradiation Creep and Growth -- 14 Fracture and Embrittlement -- 15 Corrosion and Stress Corrosion Cracking Fundamentals -- 16 Effects of Irradiation on Corrosion and Environmentally Assisted Cracking -- Index. .
Sommario/riassunto	The revised second edition of this established text offers readers a significantly expanded introduction to the effects of radiation on metals and alloys. It describes the various processes that occur when

energetic particles strike a solid, inducing changes to the physical and mechanical properties of the material. Specifically it covers particle interaction with the metals and alloys used in nuclear reactor cores and hence subject to intense radiation fields. It describes the basics of particle-atom interaction for a range of particle types, the amount and spatial extent of the resulting radiation damage, the physical effects of irradiation and the changes in mechanical behavior of irradiated metals and alloys. Updated throughout, some major enhancements for the new edition include improved treatment of low- and intermediate-energy elastic collisions and stopping power, expanded sections on molecular dynamics and kinetic Monte Carlo methodologies describing collision cascade evolution, new treatment of the multi-frequency model of diffusion, numerous examples of RIS in austenitic and ferritic-martensitic alloys, expanded treatment of in-cascade defect clustering, cluster evolution, and cluster mobility, new discussion of void behavior near grain boundaries, a new section on ion beam assisted deposition, and reorganization of hardening, creep and fracture of irradiated materials (Chaps 12-14) to provide a smoother and more integrated transition between the topics. The book also contains two new chapters. Chapter 15 focuses on the fundamentals of corrosion and stress corrosion cracking, covering forms of corrosion, corrosion thermodynamics, corrosion kinetics, polarization theory, passivity, crevice corrosion, and stress corrosion cracking. Chapter 16 extends this treatment and considers the effects of irradiation on corrosion and environmentally assisted corrosion, including the effects of irradiation on water chemistry and the mechanisms of irradiation-induced stress corrosion cracking. The book maintains the previous style, concepts are developed systematically and quantitatively, supported by worked examples, references for further reading, end-of-chapter problem sets and an online solutions manual. Aimed primarily and students of materials sciences and nuclear engineering, the book will also provide a valuable resource for academic and industrial research professionals. .