

1. Record Nr.	UNINA9910964085203321
Titolo	Hardness testing : principles and applications / / edited by Konrad Herrmann
Pubbl/distr/stampa	Materials Park, Ohio, : ASM International, 2011
ISBN	1-62708-346-4 1-61344-761-2 1-61503-847-7
Edizione	[1st ed.]
Descrizione fisica	1 online resource (261 p.)
Altri autori (Persone)	HerrmannKonrad
Disciplina	620.1/126
Soggetti	Hardness - Testing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	<p>""Title Page""; ""Contents""; ""Chapter 1 The Fundamentals of Hardness Testing""; ""The History of Hardness Testing""; ""The Term Hardness""; ""Interrelationship Between Material Structure and Hardness""; ""Relationships Between Hardness and Other Mechanical Material Properties""; ""Hardness Unit and Traceability of the Hardness Measurement""; ""Summary""; ""EA Measurement Uncertainty Guideline for Brinell and Vickers Measurements""; ""EA Guideline for Determining Measuremen tUncertainty During the Hardness Test According to the HRC Scale""</p> <p>""Chapter 2 Hardness Measurement of Metalsa€? Static Methods"""" Rockwell ISO 6508 and ASTM E 18 Procedures""; ""Vickers ISO 6507, ASTM E92, and ASTM E384 Procedures""; ""Brinell ISO 6506 and ASTM E10 Procedures""; ""Knoop ISO 4545 and ASTM E284 Procedures"";</p> <p>""Chapter 3 Dynamic Test Methods""; ""Introduction""; ""Theory""; ""Methods to Measure the Deformation""; ""Methods to Measure Energy""; ""Applications""; ""Outlook"";</p> <p>""Chapter 4 Hardness Testing of Metalsa€?Contactless and Other Nondestructive Methods""; ""Electromagnetic Impulse Method""; ""Photothermal Method""</p> <p>""Determining Hardening Depth by Ultrasound""""Scratch Hardness Testing""; ""Ultrasonic Contact Impedance (UCI) Procedure""; ""Checking the Hardness Testing Machines and Indenters""; ""Hardness Reference Blocks and Their Calibration""; ""Hardness Conversion According to ISO</p>

18265"; ""Capability of the Testing Equipment and Suitability of the Testing Method"; ""Chapter 5 Hardness Measurement of Plastics and Elastomers"; ""Test Procedures"; ""Testing Technique"";
""Applications"; ""Summary"; ""Chapter 6 Instrumented Indentation Test""; ""Introduction""; ""Contact Mechanics""
""Test Method""""Required Checking of Test Equipment and Indenters"";
""Special Case: Testing of Layers""; ""Test Engineering""; ""Application Examples""; ""Measurement Uncertainty""; ""Determining the True Stress-Strain Curve of Materials""; ""Summary""; ""Chapter 7 Standardization""; ""General Comments on Standardization"";
""Historical Development of Materials Testing Standards""; ""Status of Standardization in the Field of Hardness Testing""; ""Index""

Sommario/riassunto

Hardness testing is of immense importance for quality assurance in industry. Although the most widely used hardness test methods for metals--Rockwell, Brinell, and Vickers--were developed between 1900 and 1925, numerous technical innovations have been made in recent years, leading to an increase in productivity and the accuracy of hardness tests. This publication provides an overview of the hardness testing of metals, plastics, rubber, and other materials based on current standards and practices. It reports on technical developments such as the introduction of image processing in the Brinell and Vickers methods, the adaptation of hardness testing machines to process-oriented testing conditions, and the development of highly accurate and efficient calibration methods.
