1. Record Nr. UNINA9910298601103321

Titolo	Advanced Analytical Methods in Tribology / / edited by Martin Dienwiebel, Maria-Isabel De Barros Bouchet
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-99897-8
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (332 pages)
Collana	Microtechnology and MEMS, , 1615-8326
Disciplina	621.89
Soggetti	Tribology Corrosion and anti-corrosives Coatings Surfaces (Physics) Interfaces (Physical sciences) Thin films Materials science Nanotechnology Physical measurements Measurement Mechanics Tribology, Corrosion and Coatings Surface and Interface Science, Thin Films Characterization and Evaluation of Materials Nanotechnology and Microengineering Measurement Science and Instrumentation Classical Mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Microstructural Characterization -- Chemical Characterization -- Mechanical Characterization -- Topography Analysis -- Numerical Calculations.
Sommario/riassunto	Friction and wear phenomena are governed by processes at the

interface of sliding surfaces. For a detailed understanding of these phenomena many surface sensitive techniques have become available in recent years. This book gives an overview of the basics and methods of state-of-the-art nanoscale analytical techniques for researchers and practitioners in the field of tribology. It provides guidance and shows examples of the application of mechanical, microstructural, chemical characterization methods and topography analysis of materials. The applied methods are atom probe tomography, TEM, SERS, NEXAFS, in-situ XPS, nanoindentation and in situ Raman spectroscopy. A survey of related numerical calculations completes the book. These include ab-initio and molecular dynamics coupling, numerical calculations for mechanical aspects and density functional theory to study chemical reactivity.