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Titolo	Rolling Contact Fatigue in a Vacuum : Test Equipment and Coating Analysis // by Michael Danyluk, Anoop Dhingra
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ISBN	3-319-11930-3
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (171 p.)
Disciplina	620.11 620.11223 620.44 621.89 629.2 670
Soggetti	Tribology Corrosion and anti-corrosives Coatings Materials—Surfaces Thin films Manufactures Automotive engineering Tribology, Corrosion and Coatings Surfaces and Interfaces, Thin Films Manufacturing, Machines, Tools, Processes Automotive Engineering
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 at the end of each chapters and index.
Nota di contenuto	Introduction -- Vacuum chamber design -- Rolling Contact Testing of Ball Bearing Elements -- Rolling Contact Fatigue in High Vacuum -- Coating Thickness Calculation and Adhesion -- Ion Plating Process Model -- Effects of Process Parameters on Flm RCF Life -- Real Time Process Control.

This book deals with wear and performance testing of thin solid film lubrication and hard coatings in an ultra-high vacuum (UHV), a process which enables rapid accumulation of stress cycles compared with testing in oil at atmospheric pressure. The authors' lucid and authoritative narrative broadens readers' understanding of the benefits of UHV testing: a cleaner, shorter test is achieved in high vacuum, disturbance rejection by the deposition controller may be optimized for maximum fatigue life of the coating using rolling contact fatigue testing (RCF) in a high vacuum, and RCF testing in UHV conditions enables a faster study of deposition control parameters. In short, Rolling Contact Fatigue in a Vacuum is an indispensable resource for researchers and engineers concerned with thin film deposition, solar flat panel manufacturing, physical vapor deposition, MEMS manufacturing (for lubrication of MEMS), tribology in a range of industries, and automotive and marine wear coatings for engines and transmissions. This book also:

- Illustrates rolling contact fatigue testing in an ultra-high vacuum
- Demonstrates testing at rotational speeds up to 7800 RPM without oil as a lubricant
- Explores process control using in situ plasma monitoring
- Elucidates controller optimization and hardware-in-the-loop testing applied to deposition processing
- Analyzes and explains investigative tools testing in an ultra-high vacuum.

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