Record Nr. UNINA9911006831903321 Szeri A. Z Autore Titolo Fluid film lubrication / / Andras Z. Szeri Cambridge;; New York,: Cambridge University Press, 2011 Pubbl/distr/stampa **ISBN** 1-107-21958-2 1-283-05543-0 9786613055439 0-511-78202-0 0-511-99162-2 0-511-98603-3 0-511-99260-2 0-511-98883-4 0-511-98701-3 0-511-99063-4 Edizione [2nd ed.] Descrizione fisica 1 online resource (xv, 547 pages) : digital, PDF file(s) Classificazione SCI085000 Disciplina 621.8/22 Soggetti Fluid-film bearings Lingua di pubblicazione Inglese Materiale a stampa **Formato** Livello bibliografico Monografia Title from publisher's bibliographic system (viewed on 05 Oct 2015). Note generali Nota di bibliografia Includes bibliographical references and index. Machine generated contents note: 1. Introduction; 2. Basic equations; Nota di contenuto 3. Thick-film lubrication; 4. Dynamic properties of lubricant films; 5. Effects of fluid inertia; 6. Flow stability and transition; 7. Turbulence; 8. Elastrohydrodynamic lubrication; 9. Thermal effects; 10. Lubrication with non-newtonian fluids; 11. Gas lubrication; 12. Molecularly thin films; 13. Biotribology. "Fluid film bearings are machine elements that should be studied within Sommario/riassunto the broader context of tribology. The three subfields of tribology friction, lubrication, and wear - are strongly interrelated. The last decade has witnessed significant advances in the area of fluid film lubrication and its applications, and this second edition offers a look at some of these advances. This edition adds onto the fundamentals of fluid film lubrication a discourse on surface effects and the inclusion of

treatment of flow with significant inertia within the section on

turbulence. Basic ideas of the multigrid method are conveyed along with multilevel multi-integration in the treatment of elastohydrodynamic lubrication. The chapter on lubrication with non-Newtonian fluids discusses the impact of the so-named qualitative EHL. This chapter also contains a thorough discussion of blood as a lubricant, with a view of the application of lubrication theory to LVADs. New chapters have been included on ultra-thin films, both liquid and gaseous, and lubrication of articulating joints and their replacement. Some of the most recent literature is discussed"--"The term tribology, meaning the science and technology of friction, lubrication, and wear, is of recent origin (Lubrication EngineeringWorking Group, 1966), but its practical aspects reach back to prehistoric times. The importance of tribology has greatly increased during its long history, and modern civilization is surprisingly dependent on sound tribological practices. The field of tribology affects the performance and life of all mechanical systems and provides for reliability, accuracy, and precision of many. Tribology is frequently the pacing item in the design of new mechanical systems. Energy loss through friction in triboelements is a major factor in limits on energy efficiency. Strategic materials are used in many tribo-elements to obtain the required performance"--