
Book Reviews

Reviewed by J. Paulo Davim

Email: pdavim@ua.pt

1 Tribosystem Analysis: A practical Approach to the Diagnosis of Wear Problems

by: Peter J. Blau

Published 2016

by CRC Press, Taylor & Francis Group

6000 Broken Sound Parkway NW, Suite 300, Boca Raton, USA, 192pp

ISBN: 978-1-4987-0050-4 (Hardcover)

The book describes with high quality the systematic approach to wear analysis and problem definition. It includes examples to illustrate some of cases of wear science and engineering. The book was designed also for engineers without formal training in tribology.

The present book explains tribosystem analysis with quality and innovation in six chapters. Chapter 1 explains on tribosystem concept. Chapter 2 presents ‘how wear problems reveal themselves’. Chapter 3 describes types of surface damage and wear. Chapter 4 presents tools for imaging and characterising worn surfaces. Chapter 5 describes the tribosystem analysis form. Finally, the chapter 6 includes some examples on wear problems.

This book can be used in undergraduate courses or as a subject on tribosystem analysis at the postgraduate level. Also, this book can serve as a useful reference for a diversity of professionals, with a special emphasis to academics, researchers, engineers (for example, mechanical, materials, and physics), that are working in the field of tribosystem analysis.

2 Method of Dimensional Reduction in Contact Mechanics and Friction

by: Valentin L. Popov and Markus Heß

Published 2015

by Springer

Heidelberg, Heidelberger Platz 3, 14197 Berlin, Germany, 265pp

ISBN: 978-3-642-53875-9 (Hardcover)

The book describes the method of dimensionality reduction (MDR) in contact mechanics and friction – a simple but exact method of solving a broad class of contact mechanical and friction problems. It covers the normal and tangential contact problems between elastic bodies, adhesive contact, and contact of visco-elastic bodies. The MDR is based on a mapping of the real three-dimensional contact onto a contact of a modified profile with an elastic or visco-elastic foundation thus producing a simple und practical

engineering tool for analytical and numerical analysis of contacts in technical and biological systems under complex external loading. It can be used both as a reference book of existing solutions and as a guide to analytical and numerical analysis of contacts of complex shapes.

The present book explains MDR in contact mechanics and friction with quality and innovation in 16 chapters and four appendices.

This book can be used in final undergraduate engineering courses (for example, mechanical, materials, and physics) or as a subject on contact mechanics and friction at the postgraduate level. Also, this book can serve as a useful reference for academics, researchers, mechanical, materials and physics engineers, as well as, professionals in related industries with contact mechanics and friction.