LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel)	:	**A METHOD FOR CHARACTERIZING RUNNING-IN OF SLIDING CONTACTS**
Jumlah Penulis	:	4 orang (**Rifky Ismail**, Tauviqirrahman, M., Jamari, J., Schipper, D. J.)
Status Pengusul	:	Penulis Pertama
Identitas Jurnal Ilmiah	:	a. Nama Jurnal : Key Engineering Materials
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		e. DOI artikel (jika ada) : https://doi.org/10.4028/www.scientific.net/KEM.681.228
		f. Alamat web jurnal : https://www.scientific.net/
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		Scopus Link : https://scopus.proxy.undip.ac.id/record/display.uri?eid=2-s2.0-84959466197&origin=resultslist&sort=plf-f&src=s&sid=9953fd010a70393106fb2fc106ce0e20&sot=autdocs&sdt=autdocs&sl=18&s=AU-ID%2835183057200%29&relpos=65&citeCnt=0&searchTerm=
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Semarang, 11 Maret 2021

Reviewer 1

Prof. Dr. Ir. A. P. Bayuseno, MSc
NIP. 196205201989021001
Unit Kerja : Departemen Teknik Mesin FT UNDIP

Reviewer 2

Dr. Agus Suprihanto, ST, MT
NIP. 197108181997021001
Unit Kerja : Departemen Teknik Mesin FT UNDIP

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2. **Ruang lingkup dan kedalaman pembahasan:**
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3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
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Semarang, 8 Maret 2021
Reviewer 1

Prof. Dr. Ir. A. P. Bayuseno, Msc
NIP. 196205201989021001
Unit Kerja : Departemen Teknik Mesin FT UNDIP

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f. Ruang lingkup dan kedalaman pembahasan (30%)	12,00				7,50
g. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12,00				8,00
h. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,00				7,50
Total = (100%)	**40,00**				**26,00**
Nilai Pengusul (kontribusi pengusul penulis) = 40% x 26,00 = 10,40					

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   Artikel ditulis dengan lengkap sesuai dengan panduan penulisan dari Jurnal. Abstrak, Pendahuluan, Metode, Hasil, Pembahasan, Kesimpulan, Daftar Pustaka, Lampiran dipresenatsikan dengan baik Artikel sesuai dengan bidang ilmu pengusul yaitu Teknik Mesin.
2. **Ruang lingkup dan kedalaman pembahasan:**
   Metode untuk mengkarakterisasi *running-in* pada sliding contact yang menjadi isu sentral artikel ini dibahas secara mendalam dan detil. Diagram alir yang ada mampu memberikan penjelasan tentang metode yang digunakan.
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Data yang ada disajikan secara lengkap untuk mendukun analisis yang ada. Meskipun demikian, kelemahan artikel ini adalah sedikitnya jumlah sitasi yang digunakan serta kebanyakan terbitan lebih dari 10 tahun terakhir. Turnitin similarity index sebesar 10 %.
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   Jurnal termasuk jurnal bereputasi yang terindex Scopus dengan SJR sebesar 0,164.

Semarang, 11 Maret 2021
Reviewer 2

Dr. Agus Suprihanto, ST, MT
NIP. 197108181997021001
Unit Kerja : Departemen Teknik Mesin FT UNDIP

Document details

Key Engineering Materials
Volume 681, 2016, Pages 228-233

A method for characterizing running-in of sliding contacts (Article)

Ismail, R.[a], Tauviqirrahman, M.[a], Jamari, J.[a], Schipper, D.J.[b]

[a]Laboratory for Engineering Design and Tribology, Department of Mechanical Engineering, University of Diponegoro, Jl. Prof. Soedharto, Tembalang, Semarang, 50275, Indonesia
[b]Laboratory for Surface Technology and Tribology, Faculty of Engineering Technology, University of Twente, Drienerloolaan 5, Postbox 217, Enschede, 7500 AE, Netherlands

Abstract

View references (8)

Although in terms of conservation wear is undesirable, however, running-in wear is encouraged rather than avoided. Running-in is rather complex and most of the studies related to the change in micro-geometry have been conducted statistically. The purpose of this study was to characterize the running-in of sliding contacts using finite element analysis based on measured micro-geometries. The developed model combines the finite element simulation, Archard's wear equation and updated geometry to calculate the contact pressure distribution and wear depth. Results show that the proposed model is able to predict the running-in phase of sliding contact system. © 2016 Trans Tech Publications, Switzerland.

SciVal Topic Prominence

Topic: Punches | Contact Problem | Volterra Operator

Prominence percentile: 70.239

Author keywords

Finite element analysis | Running-in | Sliding contact | Wear

Indexed keywords

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Jamari, J.; Laboratory for Engineering Design and Tribology, Department of Mechanical Engineering, University of Diponegoro, Jl. Prof. Soedharto, Tembalang, Semarang, Indonesia; email:j.jamari@gmail.com

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A method for characterizing running-in of sliding contacts

R. Ismail[1], M. Tauviqirrahman[1], J. Jamari[1,*] and D.J. Schipper[2]

[1]Laboratory for Engineering Design and Tribology, Department of Mechanical Engineering, University of Diponegoro, Jl. Prof. Soedharto, Tembalang, Semarang 50275, Indonesia

[2]Laboratory for Surface Technology and Tribology, Faculty of Engineering Technology, University of Twente, Drienerloolaan 5, Postbox 217, 7500 AE, Enschede, The Netherlands

*j.jamari@gmail.com

Keywords: running-in, sliding contact, wear, finite element analysis

Abstract. Although in terms of conservation wear is undesirable, however, running-in wear is encouraged rather than avoided. Running-in is rather complex and most of the studies related to the change in micro-geometry have been conducted statistically. The purpose of this study was to characterize the running-in of sliding contacts using finite element analysis based on measured micro-geometries. The developed model combines the finite element simulation, Archard's wear equation and updated geometry to calculate the contact pressure distribution and wear depth. Results show that the proposed model is able to predict the running-in phase of sliding contact system.

Introduction

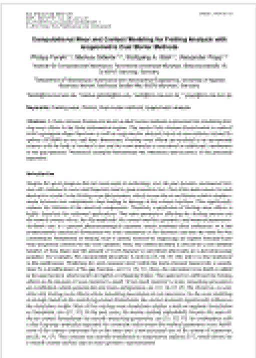
Changes which occur between start-up and steady state of contacting surfaces during rolling/sliding motion are associated with running-in (also called breaking-in or wearing-in). Although in terms of conservation wear is always undesirable, running-in wear is encouraged rather than avoided. GOST (former USSR) Standard defines running-in as: "The change in the geometry of the sliding surfaces and in the physicomechanical properties of the surface layers of the material during the initial sliding period, which generally manifests itself, assuming constant external conditions, in a decrease in the frictional work, the temperature, and the wear rate" [1].

Running-in is very complex problem. There are many tribological characteristics, such as friction, wear quantity and surface topography during the running-in process. Changes to the surface micro-geometry during the running-in phase of a sliding contact are usually related to a mild wear processes, as described by the Archard's wear concept [2] and by later researchers in more details [3], that includes wear particle removal and abrasive wear [4]. On a macro scale, the sliding contact between two contacting bodies is often referring to an elastic contact situation. The macroscopic wear volume has been studied extensively. Most of the researches are essentially experimental. The change in surface topography and the transition from the running-in phase to the steady-state phase is expressed using statistical surface roughness parameters. The local change of the surface topography of simple repeated contact has been studied by Jamari and Schipper [5]. However, the local changes of the surface topography during the running-in process did not get much attention. When sliding occurs, it is known that the elastic-plastic contact situation on asperity level plays an important role in the change of the asperity shape. The coefficient of friction and the wear rate of the contacting materials are the main parameters to distinguish the running-in and steady-state phase.

In attempting to predict the local changes of the surface topography during running-in of sliding contacts, a developed elastic-plastic finite element analysis based model is presented in this paper. The model combines the finite element method, the Archard's wear equation and the updated geometry.

Paper Titles

Computational Wear and Contact Modeling for Fretting Analysis with Isogeometric Dual Mortar Methods



Abstract:

A finite element framework based on dual mortar methods is presented for simulating fretting wear effects in the finite deformation regime. The mortar finite element discretization is realized with Lagrangean shape functions as well as isogeometric elements based on non-uniform rational B-splines (NURBS) in two and three dimensions. Fretting wear effects are modeled in an incremental scheme with the help of Archard's law and the worn material is considered as additional contribution to the gap function. Numerical examples demonstrate the robustness and accuracy of the presented algorithm.

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Authors:	

Philipp Farah, Markus Gitterle, Wolfgang A. Wall, Alexander Popp

Keywords: Dual Mortar Method, Fretting Wear, Friction, Isogeometric Analysis

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