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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
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Judul Jurnal Ilmiah (Artikel) : **STUDY THE EFFECT OF WEAR RATE ON IMPINGEMENT FAILURE OF AN ACETABULAR LINER SURFACE BASED ON FINITE ELEMENT ANALYSIS**

Jumlah Penulis : 5 orang (Eko Saputra, Iwan Budiwan Anwar, Emile Van Der Heide, Rifky Ismail, J. Jamari)

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- f. Alamat web jurnal : https://www.researchgate.net/journal/0268-1900_International_Journal_of_Materials_and_Product_Technology

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Reviewer 1



Prof. Dr. H. A. P. Bayuseno, MSc
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Semarang, 11 Maret 2021

Reviewer 2



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2. Ruang lingkup dan kedalaman pembahasan:

Artikel ini membahas tentang investigasi numerik pengaruh laju aus terhadap kegagalan acetabular liner sambungan tulang buatan. Artikel ini ditulis dengan baik dengan pembahasan yang padat dan menarik. Grafik dan gambar dibahas secara detail.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

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Semarang, 8 Maret 2021
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Unit Kerja : Departemen Teknik Mesin FT UNDIP

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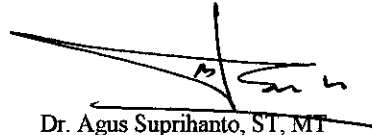
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Jurnal termasuk Jurnal Q3 Internasional bereputasi tinggi yang terindex Scopus. SJR 2018 sebesar 0,23.

Semarang, 11 Maret 2021
Reviewer 2



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International Journal of Materials and Product Technology
Volume 55, Issue 4, 2017, Pages 340-353

Study the effect of wear rate on impingement failure of an acetabular liner surface based on finite element analysis (Article) (Open Access)

Saputra, E.^a, Anwar, I.B.^a, van der Heide, E.^a, Ismail, R.^b, Jamari, J.^b

^aLaboratory for Surface Technology and Tribology, Faculty of Engineering Technology, University of Twente
Drienerlolaan 5, P.O. Box 217, Enschede, 7500 AE, Netherlands

^bLaboratory for Engineering Design and Tribology, Department of Mechanical Engineering, Diponegoro University, Jl. Prof. Soedharto SH, Tembalang, Semarang, 50275, Indonesia

Abstract

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In this study, correlation of wear inside of an acetabular liner surface (ALS) and damage on an acetabular liner rim (ALR) due to impingement effect are investigated. The analysis included evaluation of the macrostructure of the damage based on visual investigation and computer simulation analysis. A commercial finite element method ABAQUS software package is used to simulate local impingement on the ALR due to wear depth variations (wear rates) inside the ALS. Here, the wear depth is based on the data of wear experiment from literature. The von Mises stress and contact deformation on the ALR at impingement is presented. In addition, the initial impingement angle is also presented to show the correlation between the wear inside of the ALS and the angle of impingement occurrence. The results show that the existence of wear inside of the ALS can increase the damage of the ALR due to impingement effect. Copyright © 2017 Inderscience Enterprises Ltd.

SciVal Topic Prominence ⓘ

Topic: Arthroplasty | Hips | Tacrine

Prominence percentile: 94.857 ⓘ

Author keywords

Acetabular liner Finite element analysis Impingement Wear rate

Indexed keywords

Engineering controlled terms:

ABAQUS Failure (mechanical) Wear of materials

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Acetabular liners Contact deformation Impingement Impingement angle
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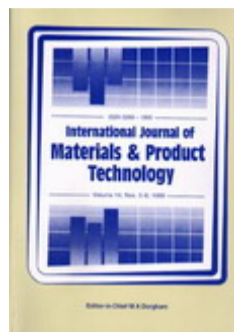
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319-330	Influence of TEOS concentration and Triton additive on the nanostructure silica sol-gel anti-reflective coatings Shahrokh Ahangarani; Najme Lari; Ali Shanaghi DOI: 10.1504/IJMPT.2017.087027
331-339	Volume combustion and mechanochemical syntheses of LaB₆ Baris Akgün; Naci Sevinç; H. Erdem Çamurlu; Yavuz Topkaya DOI: 10.1504/IJMPT.2017.087030
340-353	Study the effect of wear rate on impingement failure of an acetabular liner surface based on finite element analysis Eko Saputra; Iwan Budiwan Anwar; Emile Van Der Heide; Rifky Ismail; J. Jamari DOI: 10.1504/IJMPT.2017.087033
354-367	Effect of applied electric field on the chemical structure and thermal diffusion of DLC film irradiated by laser Shenjiang Wu; Junhong Su; Junqi Xu; Jinman Ge; Dangjuan Li; Xiaoyan Shang; Guixia Wang DOI: 10.1504/IJMPT.2017.087035
368-380	Absorption of methylbenzene in 1-butyl-3-methylimidazolium ionic liquids Zidan Chen; Lei Yu; Dandan Zhang; Kun Yang; Erhong Duan DOI: 10.1504/IJMPT.2017.087057
381-391	Shear crack in 1-D hexagonal quasicrystalline half-space G.E. Tupholme DOI: 10.1504/IJMPT.2017.087037
392-409	Design and optimisation of micro forging system to reduce parasitic motion Changho Jung; Byung-Joo Choi; Hyunho Yeom; Moon Gu Lee; Yongho Jeon DOI: 10.1504/IJMPT.2017.087051

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Title: **Effect of applied electric field on the chemical structure and thermal diffusion of DLC film irradiated by laser**

Authors: Shenjiang Wu; Junhong Su; Junqi Xu; Jinman Ge; Dangjuan Li; Xiaoyan Shang; Guixia Wang

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Abstract: Diamond-like carbon (DLC) films have attracted much attention because of their excellent performance; however, the low anti-laser damage ability of such films seriously restricts their applicability to high-power infrared optical windows or laser system, etc. To overcome this problem, in this study, Titanium (Ti) electrodes were deposited on DLC films directly, forming a transverse bias field on films' surfaces. The damage morphology under laser irradiation was observed both before and after the bias field was applied, and Raman spectroscopy was used to analyse chemical structure of DLC films. It was shown that as the I(D)/I(G) ratio increased, the sp^3 content decreased in laser-irradiated regions of DLC films when a bias electric field was not applied. When the bias electric field was applied to DLC films, it could effectively stop the content changing from sp^3 -bonding carbon to sp^2 -bonding carbon, prevent the formation of sp^2 clusters, and slow down the films graphitisation process. The fast thermal diffusion improves the DLC films' anti-laser damage ability ultimately.

Keywords: diamond-like carbon film; DLC; laser-induced damage threshold; LID; graphitisation; bias electric field; Ti electrode.

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Title: **Influence of TEOS concentration and Triton additive on the nanostructure silica sol-gel anti-reflective coatings**

Authors: Shahrokh Ahangarani; Najme Lari; Ali Shanaghi

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Abstract: Nanostructured silica antireflective coatings were fabricated on glasses by sol-gel technique. Various silica sols [varying in composition: tetraethyl orthosilicate (TEOS) concentration and Triton additive] were synthesised by the acidic catalysed process and then subsequently coated on substrates. The coatings prepared in this work were characterised using UV-visible spectroscopy, Fourier-transformed infrared spectrophotometer and field emission scanning electron microscopy. Results indicated that the dense silica films permit a considerable reduction of these light reflections compared with uncoated glasses in all the cases studied, but the degree of reduction is different depending on the composition of the precursor solution. It was found that the transmittance increased from 0.915 for the bare slide up to 0.96 for the best made sample corresponding to the Triton-doped silica. The addition of Triton x-100 to the silica sols improved the optical property of thin films due to existence of nanoporous in the coatings. The SiO₂ concentration is an effective parameter to prepare the antireflective films. Decrease in SiO₂ precursor cause to decrease in gelation time and, therefore; the suitable SiO₂ particles and pores are well formed.

Keywords: sol-gel; silica thin films; anti-reflective coatings; optical properties; Triton.

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Title: **Volume combustion and mechanochemical syntheses of LaB₆**

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Abstract: LaB₆ powder was produced by volume combustion synthesis (VCS) and mechanochemical synthesis (MCS) methods, through magnesiothermic reduction of La₂O₃ and B₂O₃ powders. VCS was achieved by rapid heating of the reactant mixture in argon, whereas MCS was performed via high energy ball milling. All the products were subjected to XRD, SEM, gravimetric and particle size distribution analyses. MCS resulted in the expected products LaB₆ and MgO. In addition to these, VCS products contained LaBO₃ and Mg₃B₂O₆. In order to obtain pure LaB₆, 30 min leach in 1 M HCl was found to be enough for MCS products, whereas Mg₃B₂O₆ could not be removed from the VCS products even after 15 h leach. Wet milling of VCS products before leach facilitated obtaining of pure LaB₆. Average particle sizes of the LaB₆ powder produced by VCS and MCS were 290 and 180 nm, respectively.

Keywords: lanthanum hexaboride; LaB₆; mechanochemical synthesis; MCS; volume combustion synthesis; VCS; magnesiothermic reduction.

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