

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

Judul Karya Ilmiah	:	Correlation of Loaded and Unloaded Foot Area With Arch Index in Younger Flatfoot
Jumlah Penulis	:	4 Orang
Status Pengusul	:	Penulis ke-2
Identitas Prosiding	a.	Judul Prosiding
	b.	ISBN/ISSN
	c.	Thn Terbit, Tempat Pelaks.
	d.	Penerbit/Organiser
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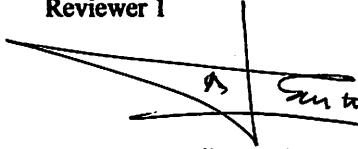
Semarang, 14 Mei 2019

Reviewer 2



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Unit Kerja : T. Mesin FT UNDIP

Reviewer 1



Dr. Agus Suprihanto, S.T, M.T.  
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Alamat Artikel	:	MATEC Web of Conferences, 8th International Conference on Mechanical and Manufacturing Engineering 2017 (ICME'17) eISSN: 2261-236X 2017, Langkawi, Malaysia EDP Sciences <a href="https://www.matecconferences.org/articles/matecconf/abs/2017/49/contents/contents.html">https://www.matecconferences.org/articles/matecconf/abs/2017/49/contents/contents.html</a> <a href="https://www.matecconferences.org/articles/matecconf/abs/2017/49/matecconf_icme2017_00060/matecconf_icme2017_00060.html">https://www.matecconferences.org/articles/matecconf/abs/2017/49/matecconf_icme2017_00060/matecconf_icme2017_00060.html</a> Scopus

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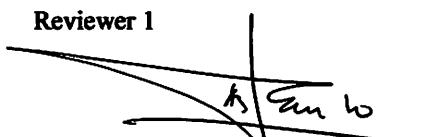
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Semarang, 14 Mei 2019

Reviewer 1



Dr. Agus Suprihanto, S.T., M.T.  
NIP. 197108181997021001  
Unit kerja : Teknik Mesin FT UNDIP

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a. Kelengkapan unsur isi prosiding (10%)	3,00		3,00
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d. Kelengkapan unsur dan kualitas terbitan/prosiding(30%)	9,00		8,00
<b>Total = (100%)</b>	<b>30,00</b>		<b>27,50</b>
<b>Nilai Pengusul = (40% x 27,50)/3 = 3,67</b>			

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Semarang, 14 Mei 2019  
Reviewer 2

Rusnaldy, S.T., M.T., Ph.D.  
NIP. 197005201999031002  
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MATEC Web of Conferences

Volume 135, 20 November 2017, Article number 00060

8th International Conference on Mechanical and Manufacturing Engineering, ICME 2017; Langkawi; Malaysia; 22 July 2017 through 23 July 2017; Code 132057

## Correlation of Loaded and Unloaded Foot Area With Arch Index in Younger Flatfoot (Conference Paper) [\(Open Access\)](#)

Wibowo, D.B.<sup>a</sup> , Haryadi, G.D.<sup>a</sup>, Widodo, A.<sup>a</sup>, Rahayu, S.P.<sup>b</sup> 

<sup>a</sup>Mechanical Engineering Dept., Diponegoro University, Semarang, Indonesia

<sup>b</sup>Faculty of Public Health, HAKLI Institute of Health Science Semarang, Indonesia

### Abstract

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Harris & Beath claimed 23% of human kind population is indicated flatfoot. Identifying flatfoot is by using wet foot test. This footprint is not accurate because of the difficulty to make sure the patient stand upright. Another way is using x-ray to determine height of arch which is a distance from medial longitudinal foot arch to the ground. If the distance is less than certain level, so the foot type is included as flatfoot. Other method proposed by Kulkarni et al. using the footprint index (FPI) which is the ratio of B intercept to A intercept, where the footprint was obtained from pedobarography image. If FPI is lower than 0.63, it is categorized as flatfoot. Another method to determine arch type which is widely used is Cavanagh's Arch Index (AI) from division of mid foot area to entire footprint area (excluding the toes). If AI>0.26, then the foot type is flatfoot. This study is to learn the correlation between entire loaded and unloaded foot area with Cavanagh's AI. The entire loaded foot and footprint area for evaluating AI derived from a digital footprint modified from document scanner, while the entire unloaded foot area derived from a 3D scanner for foot orthotic. One hundred and two healthy asked voluntarily for doing footprint. From 102 subjects found 63 participants identified as flatfoot, 31 subjects are normal feet and 8 subjects identified as high arch. A series of 3 x 3 repeated measures ANOVAs were used to determine statistical differences ( $\alpha<0.05$ ). A significant interaction existed between ratio of entire loaded and unloaded foot area (RFA) subject to all categories of AI ( $p<0.05$ ) also a correlation coefficient of  $r=0.67$  has found between RFA and AI on foot type of flatfoot which means that flatfoot can be indicated by RFA. © 2017 The Authors.

### SciVal Topic Prominence

Topic: Foot | Flatfoot | Flat feet

Prominence percentile: 91.653 

### Indexed keywords

Engineering controlled terms:

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Engineering uncontrolled terms

[3-D scanner](#) [Correlation coefficient](#) [Foot arches](#) [High-arch](#) [Normal foot](#)  
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Wibowo, D.B. , Haryadi, G.D. , Widodo, A. *(2017) AIP Conference Proceedings*

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Toth-Tascau, M. , Vigaru, C. , Pasca, O. *(2014) Key Engineering Materials*

Effects of Different Heel Heights on Heel Pressure Distribution for Calcaneal Spur Patients during Standing: Finite Element Analysis

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✉ Wibowo, D.B.; Mechanical Engineering Dept., Diponegoro University, Semarang, Indonesia;  
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Title, date and place of the conference

International Conference on Mechanical and Manufacturing Engineering 2017 (ICME2017)  
22-23 July 2017  
Langkawi, Malaysia

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Proceedings editor(s):

Nik Hisyamudin Muhd Nor, Amir Khalid, Al Emran Ismail, Mohd Rasidi Ibrahim, Mohd Faizal Mohideen Bacha,  
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23.10.2017

**INTERNATIONAL CONFERENCE ON MECHANICAL AND MANUFACTURING ENGINEERING 2017**  
**(ICME2017)**  
**LANGKAWI, MALAYSIA**  
**22 & 23 July 2017**



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## Preface

Nik Hisyamudin Muhd Nor, Al Emran Ismail, Amir Khalid, Mohd Azlis Md Jalil, Mohd Faizal Mohideen Batcha, Izzuddin Zaman, Sofian Mohd, Mohd Rashidi Ibrahim, Ahmad Mubarak Tajul Arifin, Aida Mustapha.

The 8th International Conference on Mechanical and Manufacturing Engineering 2017 (ICME2017) was held successfully in Langkawi, Malaysia. It was aimed to provide a better platform for communication and discussion among academics, researchers, industrial players as well as post-graduate students from various research fields. It was also aimed to provide a place for sharing knowledge and ideas, networking, presenting research findings and exploring other potential benefits that might be contributed for a better future.

Faculty of Mechanical and Manufacturing Engineering (FKMP), Universiti Tun Hussein Onn Malaysia (UTHM) would like to express fullest gratitude and appreciation all participants, respective authors and technical reviewers for sharing their knowledge and experience for this conference.

# Opening Address

Nik Hisyamudin Muhd Nor, Al Emran Ismail, Amir Khalid, Mohd Azlis Md Jalil, Mohd Faizal Mohideen Batcha, Izzuddin Zaman, Sofian Mohd, Mohd Rashidi Ibrahim, Ahmad Mubarak Tajul Arifin, Aida Mustapha.

First and foremost, on behalf of organizing committee, I would like to express our fullest and warmest gratitude to all participants, presenters, technical reviewers, and all collaborative partners for the supports and cooperation in ensuring the successful of the conference.

International Conference on Mechanical and Manufacturing Engineering 2017 (ICME2017) is organized by the Faculty of Mechanical and Manufacturing Engineering, UTHM. This conference is an annual conference started in year 2008 and have attracted thousands of participation from all around the world.

With the conference's theme of "Transformation Towards Translational Research", ICME2017 aims to bring all prominent scientists, researchers, inventors and innovators as well as industrial players together in one place so that we can share and exchange ideas, knowledge and expertise, widen networking among each other, present research findings, promote new technology and explore any potential benefits that might contribute to the new brighter and better future.

The introduction of Industrial Revolution 4.0 few years ago has expand the concept of world without border and the distance is no more a challenges or barriers. Thus it is a compulsory for the current researchers and academics to increase their collaboration and cooperation even through the online media or any media that does not require direct contact in ensuring researches can be done more effectively and efficiently.

Finally, we would like to thanks once again to all participants and all parties that involved in ICME2017 and we are looking forward to have you again in the following ICME.

Thank you.

Assc. Prof. Dr. Nik Hisyamudin Muhd Nor,  
Chairman

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