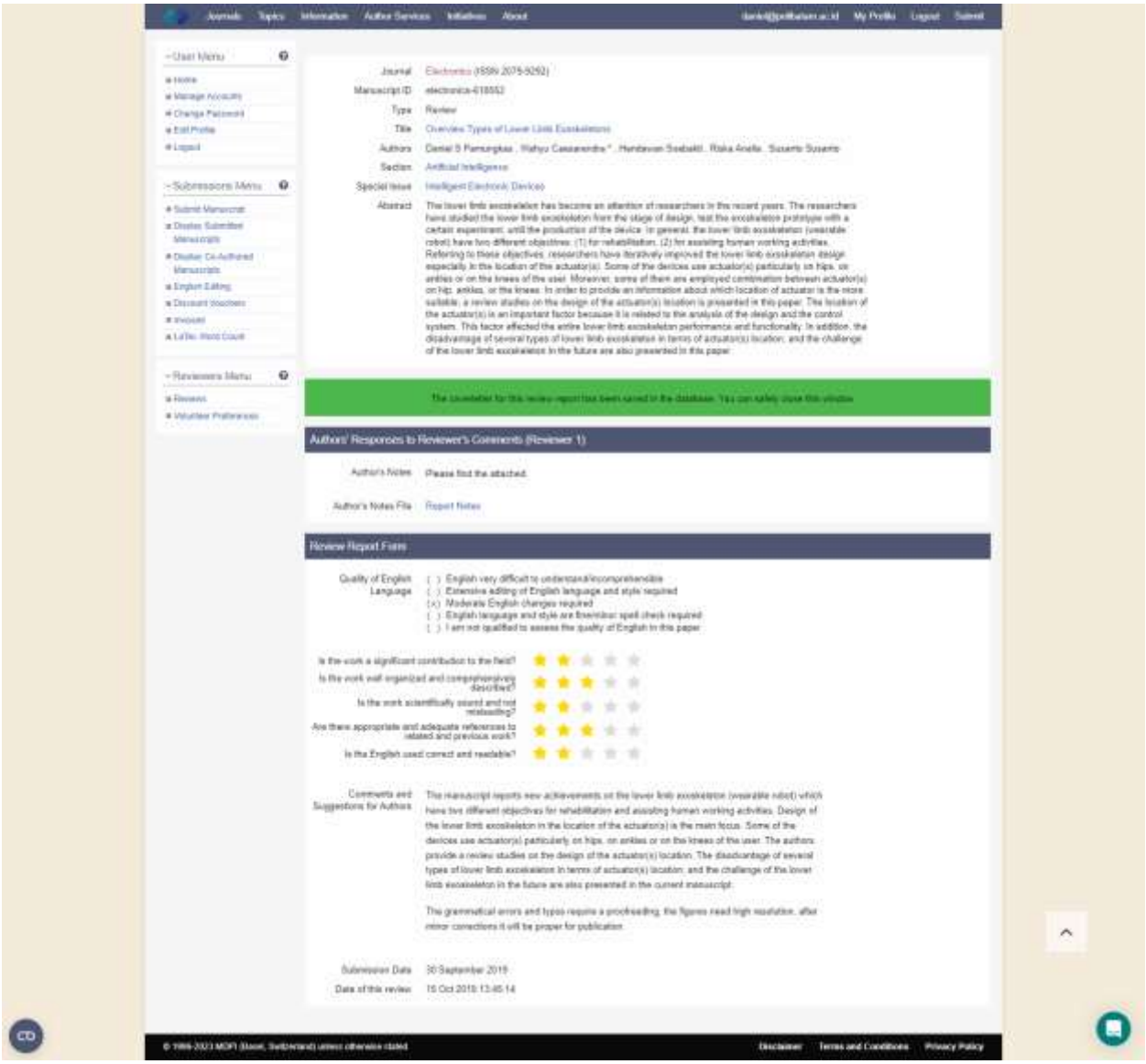
Review Report

Reviewer 1 Review Report (Round 1)

Reviewer 2 Review Report (Round 1) Review Report (Round 2)

Reviewer 1 round 1



Journal Electronics (ISSN 2079-9292)
Manuscript ID electronics-618552
Type Review
Title Overview Types of Lower Limb Exoskeletons
Authors Daniel S Pamungkas , Wahyu Caesarendra * , Hendawan Soebakti , Riska Analia , Susanto Susanto
Section Artificial Intelligence
Special Issue Intelligent Electronic Devices
Abstract The lower limb exoskeleton has become an attention of researchers in the recent years. The researchers have studied the lower limb exoskeleton from the stage of design, test the exoskeleton prototype with a certain experiment, until the production of the device. In general, the lower limb exoskeleton (wearable robot) have two different objectives: (1) for rehabilitation, (2) for assisting human working activities. Referring to these objectives, researchers have iteratively improved the lower limb exoskeleton design especially in the location of the actuator(s). Some of the devices use actuator(s) particularly on hips, on ankles or on the knees of the user. Moreover, some of them are employed combination between actuator(s) on hip, ankles, or the knees. In order to provide an information about which location of actuator is the more suitable, a review studies on the design of the actuator(s) location is presented in this paper. The location of the actuator(s) is an important factor because it is related to the analysis of the design and the control system. This factor affected the entire lower limb exoskeleton performance and functionality. In addition, the disadvantage of several types of lower limb exoskeleton in terms of actuator(s) location; and the challenge of the lower limb exoskeleton in the future are also presented in this paper.

The submission for this review report has been saved in the database. You can safely close this window.

Author's Notes Please find the attached.

Author's Notes File Report Notes

Quality of English Language
( ) English very difficult to understand/incomprehensible
( ) Extensive editing of English language and style required
(x) Moderate English changes required
( ) English language and style are fine/minor spell check required
( ) I am not qualified to assess the quality of English in this paper

Is the work a significant contribution to the field?
Is the work well organized and comprehensively described?
Is the work scientifically sound and not misleading?
Are there appropriate and adequate references to related and previous work?
Is the English used correct and readable?

Comments and Suggestions for Authors The manuscript reports new achievements on the lower limb exoskeleton (wearable robot) which have two different objectives for rehabilitation and assisting human working activities. Design of the lower limb exoskeleton in the location of the actuator(s) is the main focus. Some of the devices use actuator(s) particularly on hips, on ankles or on the knees of the user. The authors provide a review studies on the design of the actuator(s) location. The disadvantage of several types of lower limb exoskeleton in terms of actuator(s) location; and the challenge of the lower limb exoskeleton in the future are also presented in the current manuscript.

The grammatical errors and typos require a proofreading, the figures need high resolution, after minor corrections it will be proper for publication.

Submission Date 30 September 2019
Date of this review 15 Oct 2019 13:45:14

Journal: Electronics (ISSN 2079-9292)
Manuscript ID: electronics-618553
Type: Review
Title: Overview: Types of Lower Limb Exoskeletons
Authors: Daniel S Pamungkas , Wahyu Caesarendra * , Hendawan Soebakti , Riska Analia , Susanto Susanto
Section: Artificial Intelligence
Special Issue: Intelligent Electronic Devices

Abstract: The lower limb exoskeleton has become an attention of researchers in the recent years. The researchers have studied the lower limb exoskeleton from the stage of design, test the exoskeleton prototype with a certain experiment, until the production of the device. In general, the lower limb exoskeleton (wearable robot) have two different objectives: (1) for rehabilitation, (2) for assisting human working activities. Referring to these objectives, researchers have iteratively improved the lower limb exoskeleton design especially in the location of the actuator(s). Some of the devices use actuator(s) particularly on hips, on ankles or on the knees of the user. Moreover, some of them are employed combination between actuator(s) on hip, ankles, or the knees. In order to provide an information about which location of actuator is the more suitable, a review studies on the design of the actuator(s) location is presented in this paper. The location of the actuator(s) is an important factor because it is related to the analysis of the design and the control system. This factor affected the entire lower limb exoskeleton performance and functionality. In addition, the disadvantage of several types of lower limb exoskeleton in terms of actuator(s) location, and the challenge of the lower limb exoskeleton in the future are also presented in this paper.

Author/ Responses to Reviewer's Comments (Reviewer 2)

Author's Notes: Please find the attached.

Author's Notes File: Report Notes

Review Report Form

Quality of English Language:
( ) English very difficult to understand/incomprehensible
(x) Extensive editing of English language and style required
( ) Moderate English changes required
( ) English language and style are fine/minor spell check required
( ) I am not qualified to assess the quality of English in this paper

Is the work a significant contribution to the field?	★★☆☆☆
Is the work well organized and comprehensively described?	★☆☆☆☆
Is the work scientifically sound and not misleading?	★★★☆☆
Are there appropriate and adequate references to related and previous work?	★★★☆☆
Is the English used correct and readable?	★☆☆☆☆

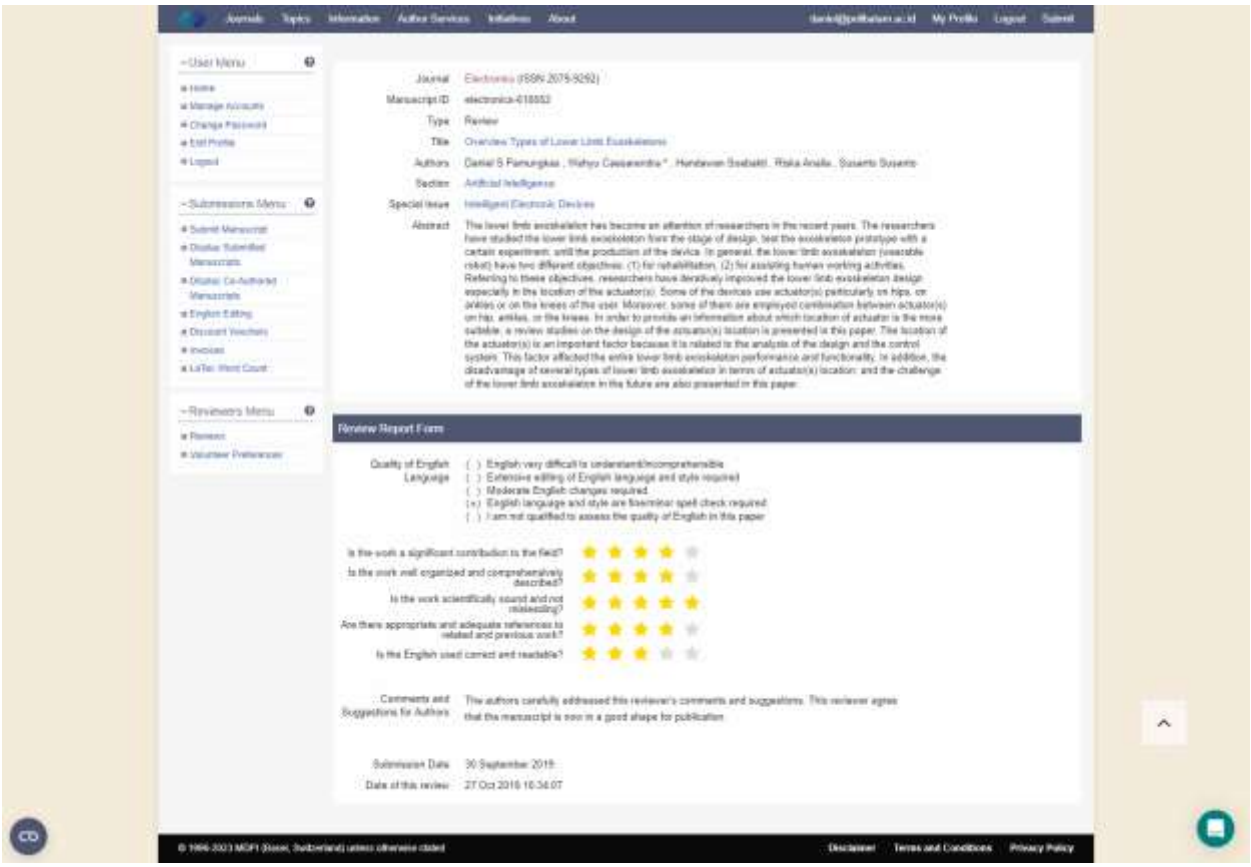
Comments and Suggestions for Authors:

The authors have reviewed twenty two different scientific articles about lower limb exoskeletons, and have categorized them by actuation method and actuator position. However, this manuscript is a display of such poor English that the sentences are not only grammatically wrong, but also contextually inaccurate or vague. Significant improvements must be made before this manuscript can be evaluated by its unique scientific value. I hope that the items below can help the authors during the process, but it is very important to note that these suggestions will not fix the problems of the manuscript entirely.

The title should be "Overview: Types of Lower Limb Exoskeletons". In lines 31-32, can the authors provide a discrete criteria for the "optimum" of daily work activities? The paragraph from line 87 to line 93 emphasizes the importance of lower limb exoskeletons over upper limb skeletons and should be moved to the introduction in order to further justify the scope of the research. In lines 44-45, the authors have used the term "limited" which implies that there are other factors that may be classified which are neglected. What are they, and why have they been uncategorized? From line 78 to line 80, the authors suggest that the torque that must be exerted by the exoskeleton can be calculated by investing the gait of the human subject. Were the human gait data adapted from Ref[11] and Ref[12] used for designing the twenty two different exoskeletons devices? Figure 3 is redundant to Figure 1. In lines 121-122, the authors wrote "Honda exoskeleton is reliable and tidy." Can the authors provide more information to justify that sentence? In line 131, what does "passive movements" mean? Does this mean that they are subordinate to other bodily motions? If so, the authors must do a better job in explaining their correlations. Also, I believe that the exoskeleton enables the user, not the other way around. In line 131-132, the authors wrote "While the thigh is able to rotate." This is not a sentence. In line 138, writing "Asbeck et al. [18] have constructed an exosuit" without further description may suggest that an exosuit is different from an exoskeleton. In line 144, the authors wrote "The Human knee has become researchers focus." Human inside a sentence must start with a lowercase H. Also, this kind of sentence does not provide any meaningful information and confuses the reader. In line 151, the term "inflatable thing" must be changed. For exoskeletons that have been used for rehabilitation, can the authors comment on their clinical effects? In lines 233-234, the authors wrote that one of groups that designed their exoskeletons with actuators on multiple positions expressed safety concerns about ankle actuation. What is that safety concern, and how did other exoskeletons which have actuators in the ankle position avoid that potential hazard? In line 282, the authors comment that single DOF exoskeletons have limited availability. Can the authors provide a specific set of conditions that define availability? In line 294, does straightforward mean user friendly? From line 309 to 311, the logical flow is insufficient to support the argument the authors are making.

Submission Date: 30 September 2019

Date of this review: 31 Oct 2019 00:53:58


Journals Topics Information Author Services Initiatives About
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Reviews
Volunteer Preferences
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Abstract The lower limb exoskeleton has become an attention of researchers in the recent years. The researchers have studied the lower limb exoskeleton from the stage of design, test the exoskeleton prototype with a certain experiment, until the production of the device. In general, the lower limb exoskeleton (wearable robot) have two different objectives: (1) for rehabilitation, (2) for assisting human working activities. Referring to these objectives, researchers have iteratively improved the lower limb exoskeleton design especially in the location of the actuator(s). Some of the devices use actuator(s) particularly on hips, on ankles or on the knees of the user. Moreover, some of them are employed combination between actuator(s) on hip, ankles, or the knees. In order to provide an information about which location of actuator is the more suitable, a review studies on the design of the actuator(s) location is presented in this paper. The location of the actuator(s) is an important factor because it is related to the analysis of the design and the control system. This factor affected the entire lower limb exoskeleton performance and functionality. In addition, the disadvantage of several types of lower limb exoskeleton in terms of actuator(s) location, and the challenge of the lower limb exoskeleton in the future are also presented in this paper.
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Is the work scientifically sound and not misleading?
Are there appropriate and adequate references to related and previous work?
Is the English used correct and readable?
Comments and Suggestions for Authors
The authors carefully addressed this reviewer's comments and suggestions. This reviewer agree that the manuscript is now in a good shape for publication
Submission Date 30 September 2019
Date of this review 27 Oct 2019 10:34:07
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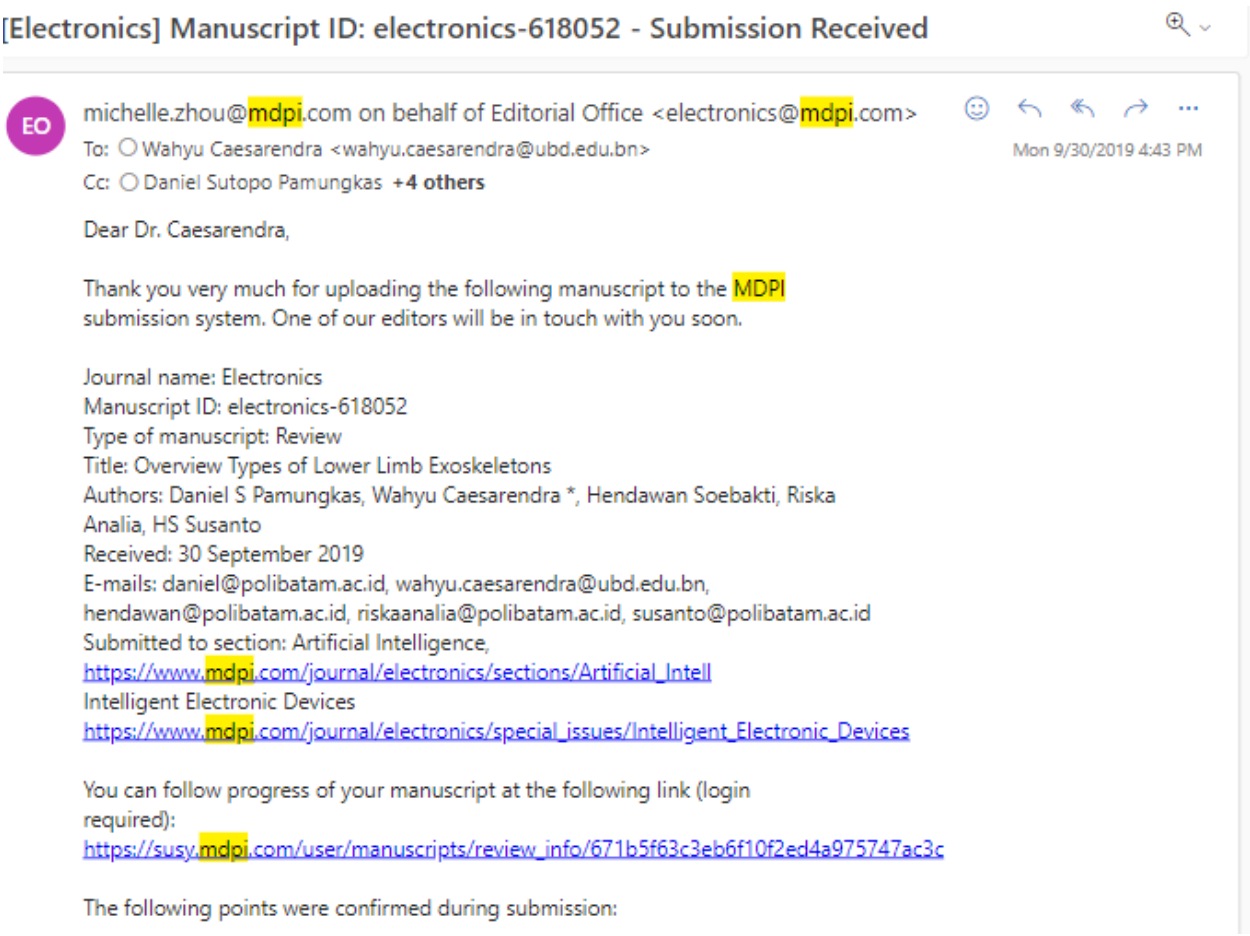
Komunikasi via email.



[Electronics] Manuscript ID: electronics-618052 - Submission Received

EO

michelle.zhou@mdpi.com on behalf of Editorial Office <electronics@mdpi.com>

To: Wahyu Caesarendra <wahyu.caesarendra@ubd.edu.bn>

Cc: Daniel Sutopo Pamungkas **+4 others**

Mon 9/30/2019 4:43 PM

Dear Dr. Caesarendra,

Thank you very much for uploading the following manuscript to the MDPI submission system. One of our editors will be in touch with you soon.

Journal name: Electronics
Manuscript ID: electronics-618052
Type of manuscript: Review
Title: Overview Types of Lower Limb Exoskeletons
Authors: Daniel S Pamungkas, Wahyu Caesarendra *, Hendawan Soebakti, Riska Analia, HS Susanto
Received: 30 September 2019
E-mails: daniel@polibatam.ac.id, wahyu.caesarendra@ubd.edu.bn, hendawan@polibatam.ac.id, riskaanalia@polibatam.ac.id, susanto@polibatam.ac.id
Submitted to section: Artificial Intelligence,
https://www.mdpi.com/journal/electronics/sections/Artificial_Intell
Intelligent Electronic Devices
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The following points were confirmed during submission:

[Electronics] Manuscript ID: electronics-618052 - Assistant Editor Assigned

JJ

Judy Jia <judy.jia@mdpi.com>

To: Wahyu Caesarendra <wahyu.caesarendra@ubd.edu.bn>

Mon 9/30/2019 5:38 P

Cc: Judy Jia <judy.jia@mdpi.com>; Daniel Sutopo Pamungkas **+4 others**

Dear Dr. Caesarendra,

Your manuscript has been assigned to Judy Jia for further processing who will act as a point of contact for any questions related to your paper.

Journal: Electronics
Manuscript ID: electronics-618052
Title: Overview Types of Lower Limb Exoskeletons
Authors: Daniel S Pamungkas , Wahyu Caesarendra *, Hendawan Soebakti , Riska Analia , HS Susanto

Received: 30 September 2019
E-mails: daniel@polibatam.ac.id, wahyu.caesarendra@ubd.edu.bn, hendawan@polibatam.ac.id, riskaanalia@polibatam.ac.id, susanto@polibatam.ac.id

You can find it here:
https://susy.mdpi.com/user/manuscripts/review_info/671b5f63c3eb6f10f2ed4a975747ac3c

Best regards,
Ms. Judy Jia, MEng
Assistant Editor
Email: judy.jia@mdpi.com

--

[Electronics] Manuscript ID: electronics-618052 - Manuscript Resubmitted

SS judy.jia@mdpi.com on behalf of Submission System <submission@mdpi.com>
To: Wahyu Caesarendra <wahyu.caesarendra@ubd.edu.bn>
Cc: Daniel Sutopo Pamungkas; Hendawan Soebhakti; Riska Analia; Susanto
Sun 10/27/2019 9:11 AM

Dear Dr. Caesarendra,

Thank you very much for resubmitting the modified version of the following manuscript:

Manuscript ID: electronics-618052
Type of manuscript: Review
Title: Overview Types of Lower Limb Exoskeletons
Authors: Daniel S Pamungkas, Wahyu Caesarendra *, Hendawan Soebakti, Riska Analia, Susanto Susanto
Received: 30 September 2019
E-mails: daniel@polibatam.ac.id, wahyu.caesarendra@ubd.edu.bn, hendawan@polibatam.ac.id, riskaanalia@polibatam.ac.id, susanto@polibatam.ac.id
Submitted to section: Artificial Intelligence,
https://www.mdpi.com/journal/electronics/sections/Artificial_Intell
Intelligent Electronic Devices
https://www.mdpi.com/journal/electronics/special_issues/Intelligent_Electronic_Devices
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A member of the editorial office will be in touch with you soon regarding progress of the manuscript.

Kind regards,

MDPI

[Electronics] Manuscript ID: electronics-618052 - Major Revisions (Deadline 28 October 2019)

JJ Judy Jia <judy.jia@mdpi.com>
To: Dr Wahyu Caesarendra <wahyu.caesarendra@ubd.edu.bn>
Cc: electronics@mdpi.com; Daniel Sutopo Pamungkas; Hendawan Soebhakti **+2 others**
Sun 10/27/2019 9:14 AM

Dear Dr. Caesarendra,

Thank you for your letter. I will help to upload your files on the system and process it soon.

Please feel free to let me know if any questions.

Kind regards,
Ms. Judy Jia
Assistant Editor
Email: judy.jia@mdpi.com
Twitter: @ElectronicsMDPI
Electronics (IF 1.764, http://www.mdpi.com/journal/Electronics)
Electronics Travel Award 2020 and Electronics Young Investigator Award 2020 are open for applications now:
https://www.mdpi.com/journal/electronics/awards

[Electronics] Manuscript ID: electronics-618052 - Revised Version Received

JJ

Judy Jia <judy.jia@mdpi.com>

To: Wahyu Caesarendra <wahyu.caesarendra@ubd.edu.bn> Sun 10/27/2019 9:14 AM

Cc: Daniel Sutopo Pamungkas; Hendawan Soebhakti; Riska Analia; Susanto **+1 other**

Dear Dr. Caesarendra,

Thank you very much for providing the revised version of your paper:

Manuscript ID: electronics-618052
Type of manuscript: Review
Title: Overview Types of Lower Limb Exoskeletons
Authors: Daniel S Pamungkas, Wahyu Caesarendra *, Hendawan Soebakti, Riska Analia, Susanto Susanto
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Submitted to section: Artificial Intelligence,
https://www.mdpi.com/journal/electronics/sections/Artificial_Intell
Intelligent Electronic Devices
https://www.mdpi.com/journal/electronics/special_issues/Intelligent_Electronic_Devices
https://susy.mdpi.com/user/manuscripts/review_info/671b5f63c3eb6f10f2ed4a975747ac3c

We will continue processing your paper and will keep you informed about the submission status.

Kind regards,

Ms. Judy Jia, MEng
Assistant Editor

[Electronics] Manuscript ID: electronics-618052 - Accepted for Publication

JJ

Judy Jia <judy.jia@mdpi.com>

To: Wahyu Caesarendra <wahyu.caesarendra@ubd.edu.bn>

Cc: Daniel Sutopo Pamungkas; Hendawan Soebhakti; Riska Analia **+3 others**

Mon 10/28/2019 9:07 AM

Dear Dr. Caesarendra,

We are pleased to inform you that the following paper has been officially accepted for publication:

Manuscript ID: electronics-618052
Type of manuscript: Review
Title: Overview Types of Lower Limb Exoskeletons
Authors: Daniel S Pamungkas, Wahyu Caesarendra *, Hendawan Soebakti, Riska Analia, Susanto Susanto
Received: 30 September 2019
E-mails: daniel@polibatam.ac.id, wahyu.caesarendra@ubd.edu.bn, hendawan@polibatam.ac.id, riskaanalia@polibatam.ac.id, susanto@polibatam.ac.id
Submitted to section: Artificial Intelligence,
https://www.mdpi.com/journal/electronics/sections/Artificial_Intell
Intelligent Electronic Devices
https://www.mdpi.com/journal/electronics/special_issues/Intelligent_Electronic_Devices
https://susy.mdpi.com/user/manuscripts/review_info/671b5f63c3eb6f10f2ed4a975747ac3c

We will now make the final preparations for publication, then return the manuscript to you for your approval.

If, however, extensive English edits are required to your manuscript, we will need to return the paper requesting improvements throughout.