

## BUKTI KORESPONDENSI PUBLIKASI INTERNASIONAL

Development of Tools Utilization Monitoring system on Labour Intensive Manufacturing Industries.

Herman Budi Harja dkk.

AIP Conference Proceeding. Volume 2187, 2019. Publish On line 10 Desember 2019.

DOI: <https://doi.org/10.1063/1.5138309>

### Submission Paper

#### ICOME 2019 submission 29

From: [icome2019@easychair.org](mailto:icome2019@easychair.org)

To: Herman Budi Harja

Dear authors,

We received your paper:

Authors : Herman Budi Harja, Tri Prakosa, Sri Raharno, Indra Nurhadi, Yatna Yuwana Martawirya, Rachmad Hartono and Muhammad Zulfahmi  
Title : Development of Tools Utilization Monitoring System on Labor-Intensive Manufacturing Industry  
Number : 29

The paper was submitted by Herman Budi Harja  
<[herman@polman-bandung.ac.id](mailto:herman@polman-bandung.ac.id)>.

Thank you for submitting to ICOME 2019.

Best regards,  
EasyChair for ICOME 2019.

### Notifikasi Inputan Reviewer

#### ICOME 2019 notification for paper 29

15 July, 2019 15:05

From: [icome2019@easychair.org](mailto:icome2019@easychair.org)

To: Herman Budi Harja

Dear Herman Budi,

On behalf of the ICOME 2019 Committee, and on the recommendation of the reviewers, we are pleased to inform you that your paper:  
Title: Development of Tools Utilization Monitoring System on Labor-Intensive Manufacturing Industry  
Paper ID: 29

has been accepted for ORAL presentation at the forthcoming 4th International Conference on Mechanical Engineering, to be held on August 28-29, 2019 in Yogyakarta, Indonesia.

Papers that are "accepted and presented" in ICOME 2019 will be published in the AIP Conference Proceedings (Indexing: SCOPUS, SJR Scimago). Selected papers may be invited to publish in Material Science Forum (Scientific.net; Indexing: SCOPUS, SJR Scimago) or Journal of Advanced Manufacturing Technology (Indexing: SCOPUS, SJR Scimago).

Please prepare for your full paper by taking into consideration the reviewer comments and using the paper template. The same first author is allowed to submit a maximum of 3 papers. If you have more than 3 accepted papers, then you have to choose 3 papers and withdraw the others.

#### Deadlines:

Early-registration: July 22, 2019  
Camera-ready full paper: August 12, 2019  
Late-registration: August 12, 2019

We thank you for submitting your paper and are looking forward to seeing you at the conference.

Sincerely yours,  
Chairman of ICOME 2019,

Fahmi Mubarok, Ph.D.  
[icome@its.ac.id](mailto:icome@its.ac.id)

SUBMISSION: 29  
TITLE: Development of Tools Utilization Monitoring System on Labor-Intensive Manufacturing Industry

----- REVIEW 1 -----  
SUBMISSION: 29  
TITLE: Development of Tools Utilization Monitoring System on Labor-Intensive Manufacturing Industry  
AUTHORS: Herman Budi Harja, Tri Prakosa, Sri Raharno, Indra Nurhadi, Yatna Yuwana Martawirya, Rachmad Hartono and Muhammad Zulfahmi

----- Originality -----  
SCORE: 4 (good)  
----- Significance and importance of the topic -----  
SCORE: 3 (fair)  
----- Literature review -----  
SCORE: 3 (fair)  
----- Methods -----  
SCORE: 3 (fair)  
----- Relevance of analysis and conclusions -----  
SCORE: 3 (fair)  
----- Supporting figure and graphics have good qualities -----  
SELECTION: no  
----- Follows correct referencing style and all references are cited in the text -----  
SELECTION: no  
----- Written in correct scientific English and no typographical errors -----  
SELECTION: no  
----- Overall evaluation -----  
SCORE: 2 (accept)  
----- TEXT: -----  
Methods and results should be clearly described.  
Structure and main idea of each paragraph should be clarified.

----- REVIEW 2 -----  
SUBMISSION: 29  
TITLE: Development of Tools Utilization Monitoring System on Labor-Intensive Manufacturing Industry  
AUTHORS: Herman Budi Harja, Tri Prakosa, Sri Raharno, Indra Nurhadi, Yatna Yuwana Martawirya, Rachmad Hartono and Muhammad Zulfahmi

----- Originality -----  
SCORE: 4 (good)  
----- Significance and importance of the topic -----  
SCORE: 3 (fair)  
----- Literature review -----  
SCORE: 3 (fair)  
----- Methods -----  
SCORE: 3 (fair)  
----- Relevance of analysis and conclusions -----  
SCORE: 3 (fair)  
----- Supporting figure and graphics have good qualities -----  
SELECTION: no  
----- Follows correct referencing style and all references are cited in the text -----  
SELECTION: no  
----- Written in correct scientific English and no typographical errors -----  
SELECTION: no  
----- Overall evaluation -----  
SCORE: 2 (accept)  
----- TEXT: -----  
Discussion and result must be described clearly  
Overall, the paper topic is interesting to be presented in the conference.

## Submission Perbaikan Paper

ICOME 2019 submission 29 update

12 August, 2019 22:

From: [icome2019@easychair.org](mailto:icome2019@easychair.org)  
To: Herman Budi Harja

Dear authors,

we acknowledge that we received new files for your ICOME 2019 submission. The information about this update is shown below.

Number: 29

Authors: Herman Budi Harja, Tri Prakosa, Sri Raharno, Indra Nurhadi, Yatna Yuwana Martawirya, Rachmad Hartono, Muhammad Zulfahmi, Meirina Yanti Pane and Maulana Yusuf

Title: Development of Tools Utilization Monitoring System on Labor-Intensive Manufacturing Industry

Uploaded by: Herman Budi Harja <herman@polman-bandung.ac.id>

Updates:

Full paper, version 2 (343206 bytes)

To access the new version of your submission you should log in to the ICOME 2019 EasyChair page.

**ICOME 2019 Conference program schedule** 19 August, 2019 15:29

From: [icome2019@easychair.org](mailto:icome2019@easychair.org)  
To: Herman Budi Harja

[Schedule-4th-ICOME.pdf](#) (175.1 KB) [Download](#) | [Briefcase](#) | [Remove](#)

Dear Herman Budi Harja,

The ICOME 2019 is coming very soon. Prepare for your presentation and get ready for the excitement to meet expert colleagues. Please find attached is the ICOME 2019 Conference program schedule.

If you have not register for the conference:  
Please register online by clicking this link:  
[https://docs.google.com/forms/d/e/1FAIpQLSejRozNpQSS\\_cnkZ1nTI2BD3zJNt1SuWXJFfycGDbccJy8wQ/viewform](https://docs.google.com/forms/d/e/1FAIpQLSejRozNpQSS_cnkZ1nTI2BD3zJNt1SuWXJFfycGDbccJy8wQ/viewform)  
or go to ICOME 2019 website:  
<https://elib.its.ac.id/conf/icome/>  
check the "Registration" page and click on "ICOME 2019 Registration Form".

Please also upload proof of payment transfer, and student card (if applicable) on the link.

We look forward to meeting you at the conference.

Sincerely yours,  
ICOME 2019 Committee

**Full Paper Submission sesuai template Material science Forum**

**Full paper submission and link for registration** 13 August, 2019 15:36

From: [icome2019@easychair.org](mailto:icome2019@easychair.org)  
To: Herman Budi Harja

Dear Author,

Please upload your full paper through Easychair:  
On "My submission" choose the paper number, click "View" >> click "Add or Update Files" on the top-right corner >> upload the paper in "Full paper" option.

Please also upload your copyright agreement in Easychair using  
On "My submission" choose the paper number, click "View" >> click "Add or Update Files" on the top-right corner >> upload the license agreement in "Copyright agreement" option.

Those file template can be found in <https://elib.its.ac.id/conf/icome/wp-content/uploads/2019/07/AIPWordTemplates.zip>

Please note that the committee will not process any papers sent through email.  
Follow the exact AIP template to ensure that your paper full-fill the requirement of AIP conference proceeding.

Only selected manuscript will be invited to be published in Material Science Forum (MSF) Journal (Q3). The invitation will be distributed after the conference. Do remember that journal publication will requires reviewing and re-submission process as any other journal.

Please also fill our registration form and upload the student and proof of payment through [https://elib.its.ac.id/conf/icome/?page\\_id=125](https://elib.its.ac.id/conf/icome/?page_id=125) or using this link [https://docs.google.com/forms/d/e/1FAIpQLSejRozNpQSS\\_cnkZ1nTI2BD3zJNt1SuWXJFfycGDbccJy8wQ/viewform](https://docs.google.com/forms/d/e/1FAIpQLSejRozNpQSS_cnkZ1nTI2BD3zJNt1SuWXJFfycGDbccJy8wQ/viewform)

The committee appreciate the author that had upload their full paper and copyright agreement through easychair.org before 12 August 2019. The committee still accept full paper uploading until 23 August 2019.

Please make sure the author and/or presenting author register before 23 August 2019 to secure presentation slot in ICOME 2019 conferences.

For those author that submit more than one paper, please make sure that the first author is the presenting author.

If the first author is NOT the presenting author, then the presenting author need to register for visitor access of Rp 1.500.000. This cost is outside the cost of 2nd or 3rd submission of Rp 2.000.000 each.

Yours Sincerely,  
ICOME 2019 Committee

**Notifikasi bahwa paper telah publish**

**ICOME 2019 AIP Proceeding published** 12 December, 2019 11:36

From: [icome2019@easychair.org](mailto:icome2019@easychair.org)  
To: Herman Budi Harja

Dear Herman Budi Harja,

We are very pleased to inform that the ICOME 2019 AIP Proceeding (Volume 2187) is now published online.

You can access the proceeding here: <http://aip.scitation.org/toc/apc/2187/1>. Access will be freely available for the first 14 days. After that you will need login token that will be sent to your email address by AIP Publisher.

We thank you for your participation in ICOME 2019, and hope we can meet again in the next ICOME conference.

Kind regards,  
ICOME 2019 Editor

## Development of tools utilization monitoring system on labor-intensive manufacturing industries

AIP Conference Proceedings **2187**, 030005 (2019); <https://doi.org/10.1063/1.5138309>

Herman Budi Harja<sup>1,2,a</sup>, Tri Prakosa<sup>2,b</sup>, Sri Raharno<sup>2,c</sup>, Yatna Yuwana<sup>2,d</sup>, Indra Nurhadi<sup>2,e</sup>, Rachmad Hartono<sup>2,3,f</sup>, Muhammad Zulfahmi<sup>2,g</sup>, Meirina Yanti Pane<sup>2,h</sup>, and Maulana Yusuf<sup>2,i</sup>

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ABSTRACT

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### ABSTRACT

Industry 4.0 implementation faces crucial problem when applied in labor-intensive manufacturing industries, which are common industries in Indonesia. The problem is that it requires a well-connected and transparent data among production elements. The purpose of this study was to solve the aforementioned problem by building a cyber-physical workstation system as bridges between the production elements in real world with object models in virtual world. The system acts as a tools monitoring system for obtaining real-time information of actual tools utilization, especially for hand tools which are mostly used in labor-intensive manufacturing industries. The utilization of cyber-physical workstation system model may be the best method for determining the actual utilization of production tool with simple architecture, affordable and minimum negative impact. Workstation monitoring system transforms attendance data tools in the work area and start-finish operation time event into actual tool utilization information. The major contribution of this paper is that the implementation of industry 4.0 on labor-intensive manufacturing industry has become enabled by using cyber-physical workstation system. It was shown that the usage time of each tool on each production operation can be monitored. Furthermore, the estimation of the actual duration of each tool utilization can be calculated. The resulted data will be further utilized as primary data input for building smart tools model.