

P-ISSN: 1410-7783

E-ISSN: 2580-7110

Jurnal

Saintis

Volume 23 Nomor 01, April 2023 : 01-58

**Pengaruh Pandemi Covid-19 terhadap Produktivitas Pekerjaan
Konstruksi di Pekanbaru** 01 – 08
Qorina Adhistry*, Sapitri

**Evaluasi Kinerja *Breakwater* Terhadap Gelombang di Pantai
Tanjung Medang Kecamatan Rangsang Kabupaten Kepulauan
Meranti** 09 – 24
Fauzan Azima, Harmiyati*, Firdaus Agus, Muchammad Zaenal
Muttaqin

Evaluasi Neraca Air Pada Irigasi Kuok II 25 – 38
M Ferdi Aferta*, Firdaus Agus, Yolly Adriati, Harmiyati

**Evaluasi Kekuatan Struktur Kolom Menggunakan Pendekatan
Probabilitas Gaussian Pada Gedung Kuliah Terpadu Politeknik
Negeri Bengkalis** 39 – 50
Mega Sukmawati*, Mahadi Kurniawan, Vella Anggreana, Sapitri

**Pengaruh Penambahan *Admixture Adhesive Manufacturer 78*
Terhadap Kuat Tekan Beton Dengan Metode *Self Healing*
*Concrete*** 51 – 58
Nanda Hasyim*, Firman Syarif, Mahadi Kurniawan, Vella Anggreana

Jurnal
Saintis

Vol.23

No.01

Halaman
01-58

Pekanbaru
April 2023

P-ISSN :1410-7783
E-ISSN : 2580-7110

This page is intentionally blank

Focus and Scope

Saintis is devoted to research on civil engineering related fields including geotechnics, transports, structures, water resources and others related with civil engineering topics.

Subject areas include (but are by no means limited to):

- ▣ Structural mechanics and engineering
- ▣ Structural design and construction management
- ▣ Structural analysis and computational mechanics
- ▣ Construction technology and implementation
- ▣ Construction materials design and engineering
- ▣ Highway and transport engineering
- ▣ Bridge and tunnel engineering
- ▣ Municipal and urban engineering
- ▣ Coastal, harbour and offshore engineering
- ▣ Geotechnical and earthquake engineering
- ▣ Engineering for water, waste, energy, and environmental applications
- ▣ Hydraulic engineering and fluid mechanics
- ▣ Surveying, monitoring, and control systems in construction
- ▣ Health and safety in a civil engineering setting

Saintis is expected to publish the research result based on experiment, qualitative and quantitative method as well as literature study which may develop the quality of research and new invention in civil engineering field.

Address of Secretariat and Paper Submitting

Civil Engineering Department, Faculty of Engineering, Universitas Islam Riau
Jl. Kaharuddin Nasution, No. 113, Pekanbaru, Riau 28284
Email: saintis@journal.uir.ac.id

Executive Editorial Advisor

Dr. Elizar, ST., MT.

Editor-in-Chief

Dr. Yolly Adriati, ST., MT.

Editorial Member

Sapitri, ST., MT
Sy. Sarah Alawiah, ST., MT
Nugraha Bintang Wirawan

Copyeditor:

Ferly Oktavia, ST., MT.

This page is intentionally blank

PREFACE

For over 15 years *Jurnal Saintis* has been published various Scientific and Engineering Research paper in Civil, Planning and Environmental Engineering. Our mission has always focused on bridging the knowledge of academia/researcher and deliver the innovation to the world. We have great commitment to strengthening the ties between academia and society.

This April 2023, *Jurnal Saintis* publishes Volume 23 Number 01 to show our commitment to contribute on Civil, Planning and Environmental Engineering. We collaborate with author and reviewer from various university to ensure that we deliver high quality publication. We also updated our system to cope with latest publishing development.

As an Editor In-Chief of *Jurnal Saintis*, I would like to express my highest appreciation to author, reviewer and editor that has contributed to the development of *Jurnal Saintis*. I openly invite academia, researcher and engineering societies to use *Jurnal Saintis* as dissemination tools of research and proposing solution for many engineering problems. We announce that our journal could be exposed by the readers around the globe, and it has been indexed by DOAJ since August 2019. *Jurnal Saintis* has also been accredited by the Ministry of Research and Technology / National Research and Innovation Agency of the Republic of Indonesia, as 4th rank, SINTA (science and technology index) S4, No.200/M/KPT/2020, since December 2020.

Thank you very much for your cooperation. We would like to invite you to give contribution to our further publication.

Regards,

Editor In-Chief.

This page is intentionally blank

VOLUME 23, NO. 01, APRIL 2023 : 01 – 58

LIST OF CONTENTS

Pengaruh Pandemi Covid-19 terhadap Produktivitas Pekerjaan Konstruksi di Pekanbaru Qorina Adhisty*, Sapitri	01 – 08
Evaluasi Kinerja <i>Breakwater</i> Terhadap Gelombang di Pantai Tanjung Medang Kecamatan Rangsang Kabupaten Kepulauan Meranti Fauzan Azima, Harmiyati*, Firdaus Agus, Muchammad Zaenal Muttaqin	09 – 24
Evaluasi Neraca Air Pada Irigasi Kuok II M Ferdi Aferta*, Firdaus Agus, Yolly Adriati, Harmiyati	25 – 38
Evaluasi Kekuatan Struktur Kolom Menggunakan Pendekatan Probabilitas Gaussian Pada Gedung Kuliah Terpadu Politeknik Negeri Bengkalis Mega Sukmawati*, Mahadi Kurniawan, Vella Anggreana, Sapitri	39 – 50
Pengaruh Penambahan <i>Admixture Adhesive Manufacturer 78</i> Terhadap Kuat Tekan Beton Dengan Metode <i>Self Healing Concrete</i> Nanda Hasyim*, Firman Syarif, Mahadi Kurniawan, Vella Anggreana	51 – 58

This page is intentionally blank

AUTHOR GUIDELINE

1. Paper Title

Include a separate title page with:

- 1) Title (maximum 85 characters)
- 2) All authors names and full addresses
- 3) Corresponding author's postal, Fax, Phone number and email address
- 4) A minimum of four keywords describing the manuscript
- 5) Word count of the full article, excluding references and figure legends

2. Abstract

- 1) Information abstract for research article, It should set out briefly and clearly the main objectives and results/conclusions of the work; it should give the reader a clear idea of what has been achieved
- 2) Indicative abstract for review article/short communication includes review of the research/technology in a period of comprehensive development or in the current level of development, and future prospects briefly.
- 3) The length of the abstract words.
- 4) Avoid abbreviations and references in this section.

3. Introduction

Introduction provides adequate background or context (problem and its significance) of the study. The subject should not be written extensively. It is expected that rational or purpose of the study (gap analysis), the objective in general and specific, and hypothesis (if any) should be expressed clearly. Present a clear "state of the art" of the subject, which discussed literature and theoretical concepts behind it. A concise general background may be included in the article.

Divide your article into several headings: Introduction, Method, Results and Discussion, and Conclusions, References, and Appendices (if necessary). You must follow how headings are written in this template by selecting Heading 1 in the available styles. Authors must guarantee that their article is free from plagiarism. Article that has been submitted or published elsewhere cannot be submitted to *Jurnal Saintis*. Please read our policy on the issue.

4. Section Heading

The way chapter titles and other headings are displayed in these instructions, is meant to be followed in your manuscript. *Second level heading* must be written boldface and italics using upper and lower cases with 10 pt and Cambria Italic-Bold. You must set your second level heading left aligned. *Third level heading* follows 10 pt Cambria Italic. Avoid the use of headings that have more than three levels.

Use reference manager such as Mendeley or EndNote in citing works of others. Use the **IEEE style**. Citations put in the beginning of a sentence are also written using numbers within brackets []. *Jurnal Saintis* highly recommends the use of Mendeley in preparing references. EndNote is preferred since Journal Saintis prepared guidance using EndNote as a referencing tool.

5. Method

Methods section provides sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described. Indicate the participants observed, including demographic data, number of respondents, the rationale of respondents selection, etc. Describe the design of the experiment, such as the experiment procedures, surveys, interviews, observation characteristics, etc. Write the complete research procedure. Be sure that explanations made in the article will allow other researchers reproduce the work, or make future work out of it.

6. Footnote

It is requested not to us any of footnotes. All references should be in the References. Explanations should be preferably included in the text.

7. Equation

Equations must be presented using consecutive numbers starting with (1). Continue the numbering until the end of the article including appendices. The number must be made inside parenthesis and right aligned. You also need to put spacing before and after an equation.

$$\alpha = \frac{\bar{S}}{J_s (T = \text{const.}) \cdot \left(P \cdot \left(\frac{\bar{S}}{S_c} \right)^m + (1 - P) \right)} \quad (1)$$

Nomenclature for your equations must be presented after the References section of your article.

8. Symbol and Unit

Greek symbols and special characters often undergo formatting changes and get corrupted or lost during preparation of a manuscript for publication. To ensure that all special characters used are embedded in the text, these special characters should be inserted as a symbol but should not be a result of any format styling (Symbol font face) otherwise they will be lost during conversion to PDF/XML2. Authors are encouraged to use SI units, but use of SI units is not mandatory if other units are more appropriate.

9. Tables

Title of a table, must be put above the table. In writing the title of a table, you must capitalize each word. All tables and figures must be consecutively numbered. Figures must be made center-align and left-align for tables. In presenting your tables, please follow Table 1. If the content of a table is from a particular source, mention the source below the table using font with the size of 9pt.

Table 1. Example on How to Present Your Table

Column Title	Column A (t)	Column B (t)
First row	1	2
Second row	3	4
Next row	5	6

Tables should be typed and included in the main body of the article. The position of tables should be inserted in the text as close to the point of reference as possible. Ensure that any superscripts or asterisks are shown next to the relevant items and have corresponding explanations displayed as footnotes to the table, figure or plate.

10. Figures

Figures (charts, diagrams, line drawings, web pages/screenshots, and photographic images) should be submitted in electronic form. Graphics may be supplied in colour to facilitate their appearance on the online database. Figures created in *MS Word*, *MS PowerPoint*, *MS Excel* should be supplied in their native formats. Electronic figures created in other applications should be copied from the origination software and pasted into MS Word template document. Photographic images should be inserted in the main body of the article and of high quality. Please follow Figure 1 in preparing pictures. If a figure is from a particular source, you must mention the source. Title of a figure must be put below the figure. Do not put border on the figures.



Figure 1. Example on How to Put Caption for a Figure

11. Acknowledgment

Acknowledgment is optional. The author/s is encouraged to acknowledge any parties that give contribution to the research. It is not same as dedication chapter in thesis/dissertation. Please provide the grant number(s) and the name of supported foundation items correctly for identification purposes.

12. References

Journal Saintis prefers articles which refer mainly to journal articles, research reports, and conference proceedings, rather than rely heavily on textbooks or handbooks to demonstrate articles' novelty in the subject discussed. The use of **EndNote** as a tool in referencing is preferable and encouraged. References

should be carefully checked for completeness, accuracy, and consistency. When referring to a reference in the text of the document, put the number of the reference in square brackets. Eg: [1]. References must be prepared according to the **IEEE style** as the following examples:

Chapter or Article in Edited Book

- [1] G.J Foschini, : Layered space-time architecture for wireless communication in fading environment when using multi-element antennas," *Bell Lab, Tech.*, vol. 1. Pp. 41-59, 1996.

Book: Two or More Authors

- [2] Bell, A. Graham, "Performance Tuning", in *Theory and Practise – Four Stroke*, First Edition, United of Kingdom : Haynes Publishing, 1981. .

Book: Editor

- [3] D. Sarunyagate, Ed., *Lasers*. New York: McGraw-Hill, 1996.

Book: Different Editions

- [4] K. Schwalbe, *Information Technology Project Management*, 3rd ed. Boston: Course Technology, 2004.

Scientific/Technical Report

- [5] K. E. Elliott and C.M. Greene, "A local adaptive protocol," Argonne National Laboratory, Argonne, France, Tech. Rep. 916-1010-BB, 1997.

Conference Proceedings

- [6] T. J. van Weert and R. K. Munro, Eds., *Informatics and the Digital Society: Social, ethical and cognitive issues: IFIP TC3/WG3.1&3.2 Open Conf.e on Social, Ethical and Cognitive Issues of Informatics and ICT*, July 22-26, 2002, Dortmund, Germany. Boston: Kluwer Academic, 2003.

E-book

- [7] L. Bass, P. Clements, and R. Kazman, *Software Architecture in Practice*, 2nd ed. Reading, MA: Addison Wesley, 2003. [Online] Available: Safari e-book.

Journal Article from a Full Text Database

- [8] H. Ayasso and A. Mohammad-Djafari, "Joint NDT Image Restoration and Segmentation Using Gauss-Markov-Potts Prior Models and Variational Bayesian Computation," *IEEE Transactions on Image Processing*, vol. 19, no. 9, pp. 2265-77, 2010. [Online]. Available: IEEE Xplore, <http://www.ieee.org>. [Accessed Sept. 10, 2010].

Journal Article from the Internet

- [9] P. H. C. Eilers and J. J. Goeman, "Enhancing scatterplots with smoothed densities," *Bioinformatics*, vol. 20, no. 5, pp. 623-628, March 2004. [Online]. Available: www.oxfordjournals.org. [Accessed Sept. 18, 2004].

Government Publication

- [10] Australia. Department of Education, Employment and Workplace Relations, *Survey on Changes in Awareness and Understanding of Science, Engineering and Technology: Report on findings*. Canberra: The Department; 2008. [Online]. Available: <http://www.dest.gov.au/NR/rdonlyres/241263CF-8585-4EEC-B104-C947C6C18029/23713/SurveyonChangesinawarenessunderstandingofSET.pdf>. [Accessed: Sept. 7, 2010].

Thesis

- [11] M. W. Dixon, "Application of neural networks to solve the routing problem in communication networks," Ph.D. dissertation, Murdoch Univ., Murdoch, WA, Australia, 1999.

13. Nomenclature

Meaning of symbols used in the equations and other symbols presented in your article must be presented in this section.

E meaning of E

J_s meaning of J_s

β meaning of β

This page is intentionally blank