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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.

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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 Oktober 2023, *Jurnal Saintis* publishes Volume 23 Number 02 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.

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1. Paper Title

Include a separate title page with:

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- 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
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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.

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

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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.

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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

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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

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