**COVER LETTER**

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Dear,

I/We wish to submit an original research article entitled “[***Effect of Curing Temperature on the Soil Physical and Mechanical Properties on Clay Shale Geopolymer Fly Ash Stabilization***]” for consideration by SINERGI.

We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere. We promise not to withdraw this article after it has been processed by the Editorial Team. If there is a withdrawal, we are willing to pay a penalty of USD 150 (IDR 2000K) to the SINERGI Editorial Team.

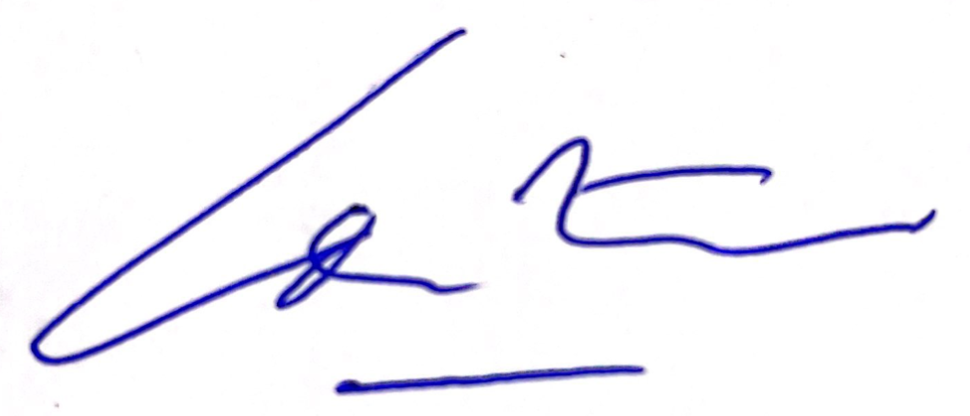
In this paper, I/we report on / show that:

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| Field | : | Geotechnic |
| Topic | : | Soil Stabilization |
| Brief Background | : | Clay shale is an easily degraded mudrock when exposed to weathering. The reduced strength due to degradation can be mitigated through soil stabilization. In recent years, soil stabilization using geopolymers has become one of the latest popular methods due to its economic benefits and lower carbon footprint. A widely used cementitious material for this method is fly ash-based geopolymer. |
| Research Problem | : | The relationship between curing temperatures and the performance of clay shale stabilized with fly ash-based geopolymer has yet to be studied for the purpose of identifying a more effective stabilization method. |
| Overview of Method | : | A boulder of clay shale was crushed until it passed through sieve No. 4 and mixed with fly ash (15% of the total weight). The activator was then added to the mixture (19% of the total weight, considering the optimum moisture content of natural clay shale). The samples were prepared by using NaOH and Na2SiO3 with a 1:2 ratio as activators. The soil-geopolymer mixture was then compacted into a cylindrical mold of 76 mm in height and 38 mm in diameter with a dry density of 1.66 g/cm3. After compacting, the specimen was dismantled from the mold and cured with a different temperature. The curing temperatures were variously set from room temperature (26°C), 40°C, 50°C, and 60°C. The sample curing time lasts for seven days. |
| Significant finding | : | The dry density of soil is positively correlated with temperature. There is a significant increase density between the curing process at ambient temperature (26°C) and 40°C. Higher curing temperatures lowered the moisture content after the curing process, leading to specimen shrinkage and thus reducing the volume. The unconfined compressive strength increases as the curing temperature increases. The qu increases multiply about 3.5 times by increasing the temperature from 26oC to 60oC. |

We have no conflicts of interest to disclose.

Thank you for your consideration of this manuscript.

Sincerely,



Edi Hartono

**AUTHORSHIP STATEMENT**

I/We wish to submit an original research article entitled “[***Effect of Curing Temperature on the Soil Physical and Mechanical Properties on Clay Shale Geopolymer Fly Ash Stabilization***]” for consideration by SINERGI.

All persons who meet authorship criteria are listed as authors, and all authors certify that they have participated sufficiently in work to take public responsibility for the content, including participation in the concept, design, analysis, writing, or revision of the manuscript.

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