



5th ICAMST 2017

The 5th International Conference
on Advanced Materials Science
and Technology 2017

Dear Eko Hadi Sujiono
(Universitas Negeri Makassar, Makassar 90224. Indonesia),

It is our pleasure to inform you that your paper #1-063 entitled "Influence of PT. Vale Granulated Gradation Nickel Slag Aggregate on Compressive Strength of Concrete" for The International Conference on Advanced Materials Science and Technology 2017 (ICAMST2017) has been ACCEPTED for ORAL PRESENTATION on the conference.

Please be reminded, the full paper must be submitted through our system at <http://kosatem.org/epaper/> by 2017-09-08, following the template [here](#). The length of full paper must be 5 pages. It is also noted that there will be no presentation without full paper submission.

Thank you very much for contributing to the ICAMST2017. We are looking forward to welcoming you to the conference on September 19th – 20th, 2017 in Makassar.

For more information please contact us at email: icamst2017@kosatem.org. or WA number 085728152871

Kind regards,
The Conference Chairman



Prof. Dr. Eko Hadi Sujiono, M.Si.

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The 5th International Conference on Advanced Materials Science and Technology

2017

BOOK OF ABSTRACTS

September 19-20, 2017

Makassar, Indonesia

Abstract Book

The 5th International Conference on Advanced Materials Science and Technology (ICAMST) 2017

**September 19-20, 2017
Makassar, Indonesia**

Konsorsium Sains Teknologi Material

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Preface

The Consortium of Materials Science and Technology (KoSaTeM) and Materials Research Society of Indonesia (MRS-Id) in collaboration with HFI and HKI proudly present The 5th International Conference on Advanced Materials Science and Technology (ICAMST) on 19th-20th September 2017 at the Grand Clarion Hotel & Convention Centre, Makassar, Indonesia.

Reflecting back on the four previous ICAMST 2013-2016, which has annually been held in UGM, UNS, UNNES, and UM, and had been attended by about 300 participants. Now in 5th ICAMST, the total participants are 250, 265 authors with 108 papers. The 5th ICAMST 2017 will address among the many important issues and topics in materials sciences and technology. The topics are: **Nano Science and Technology, Minerals and Complex Materials, Functional Materials, Synthesis and Characterization Techniques, Theoretical and Analysis in Materials, Low-Temperature Physics, and Exotic Materials**, which all the submitted abstract collected in this booklet.

In this 5th ICAMST 2017 involved high level scientists as plenary speakers. They are: Prof. Dr. Seiichi Miyazaki (Nagoya University, Japan), Assoc. Prof. Dr. Ariando (National University of Singapore, Singapore), Prof. Dr. Mohamad Deraman (Universiti Kebangsaan Malaysia, Malaysia) and Assoc. Prof. Dr. Risa Suryana (Sebelas Maret University, Indonesia). **The 5th International Conference on Advanced Materials Science and Technology (ICAMST)** included invited presentations, and contributed presentations. The conference aims to help participants to develop a more in-depth understanding of recent developments in the materials sciences and technology while providing a forum for analysis and formulation of policy recommendations, it is also expected that from this conference can conduct a good collaboration research among the participants who come from all over the universities around the globe.

In the end, upon the implementation of this conference and the publication of this booklet, on behalf of the committee, our gratitude is sent to plenary speakers, speakers, participants, who have given their kind contribution in order to support this conference. Thank you and have a marvelous stay in Makassar, The City of Anging Mamiri.

5th ICAMST Chairman

Prof. Eko Hadi Sujiono

Parallel Session

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[5-063]

Influence of PT. Vale Granulated Gradation Nickel Slag Aggregate on Compressive Strength of Concrete

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Abstract. Influence of granulated gradation nickel slag aggregate on compressive strength of concrete has been investigated. In this study, we report the influence of granulated gradation nickel slag aggregate with grain size LS 9.5 mm, LS 5.6 mm, LS 2.36 mm, LS 2.0 and the combination of those fourth aggregate grain size on compressive strength and microstructure of concrete. The concrete was prepared according to SNI 03-1972-1990. Samples then characterized using universal testing machine (UTM) controller respect to ASTM C39M-01 method to obtain the compressive strength value and scanning electron microscope (SEM) to obtain morphology of all samples. Results show that sample with nickel slag aggregate size at 5.6 mm has highest compressive strength value. Characterization of microstructure shows a good interface between aggregate and cement paste. The morphology after compressive testing shows that cracks were occurred in the cement paste, not between aggregate and paste interface.

Keywords : Gradation, Nickel Slag Aggregate, concrete, compressive strength, SEM.

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