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Toward standards harmonization in asean economic community: A comparative study of national standardization bodies in Indonesia and Malaysia

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Abstract

National Quality Infrastructure (NQI) is the institutional framework that establishes and implements standardization practices, including service conformity assessment, metrology and accreditation. Along with the implementation of the ASEAN Economic Community, the strength and endurance of standards development organizations should be strengthened to compete in international markets and be able to keep abreast of the time. However, there are still differences in the internal conditions and external standards development organizations in some ASEAN countries. It is then important to understand these differences. This research was aimed at measuring them by conducting a comparative analysis between standards development organizations in Indonesia and in Malaysia. The reason is that Malaysia as a neighbouring country of Indonesia has been quite far beyond it in terms of the development of the national quality infrastructure. This research was based on literature study and interviews. It is expected that Indonesia can learn the existing weaknesses

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TOWARD STANDARDS HARMONIZATION IN ASEAN ECONOMIC COMMUNITY: A COMPARATIVE STUDY OF NATIONAL STANDARDIZATION BODIES IN INDONESIA AND MALAYSIA

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Abstract

National Quality Infrastructure (NQI) is the institutional framework that establishes and implements standardization practices, including service conformity assessment, metrology and accreditation. Along with the implementation of the ASEAN Economic Community, the strength and endurance of standards development organizations should be strengthened to compete in international markets and be able to keep abreast of the time. However, there are still differences in the internal conditions and external standards development organizations in some ASEAN countries. It is then important to understand these differences. This research was aimed at measuring them by conducting a comparative analysis between standards development organizations in Indonesia and in Malaysia. The reason is that Malaysia as a neighbouring country of Indonesia has been quite far beyond it in terms of the development of the national quality infrastructure. This research was based on literature study and interviews. It is expected that Indonesia can learn the existing weaknesses and follow the positive aspects from the experience of Malaysia. The analyses used the SWOT method, IFAS-EFAS and QSPM Matrices. Results of this research are some strategies that should be prioritized in Indonesia as a consequence of learning the adoption of the policy in Malaysian institutions. The strategies are essential to improve the institution in Indonesia.

Keywords: ASEAN, National quality infrastructure, National standardization body, Standard development body, Standardization.

EFFECTS OF GROUND COAL BOTTOM ASH ON THE PROPERTIES OF CONCRETE

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Abstract

Coal bottom ash is a waste material produced by the coal based thermal power plants. The annual production of coal bottom ash (CBA) in India is 25 million tons, in US 14 million tons, Europe 4 million tons and in Malaysia about 1.7 million tons, which creates environmental problems for the global society. Hence, the aim of this study is to utilize CBA in concrete as a partial cement replacement. In this study, the CBA was ground for three different grinding periods 20, 30 and 40 hours and concrete mix was prepared at a replacement rate of 10, 20 and 30% by weight of cement. Total 120 specimens were cast to assess the fresh and hardened properties of concrete at the age of 28 days. For the fresh mix concrete, workability reduced as quantity of ground CBA increased in the mix. However, the density of concrete was continuously declined due to addition of ground CBA and opposite behaviour was observed in water absorption capacity. The high rate of water absorption was observed as the fineness and replacement level increased in the mix. Furthermore, no significant rise in the compressive and flexural strength was recorded in this study but with 10% ground CBA as a replacement of ordinary cement the targeted compressive strength of concrete was achieved. Besides that, the splitting tensile strength was increased about 8% in concrete containing 10% ground CBA (obtained through 30 hours grinding period) as compared with the control specimen. Hence, it was concluded that the ground CBA has a good potential to be utilized as cement replacement in concrete which will reduce the construction cost and minimize the environmental burden.

Keywords: Coal bottom ash, Compressive strength, Flexural strength, Tensile strength, Workability.

A MODIFIED MULTILEVEL INVERTER TOPOLOGY WITH MAXIMUM POWER POINT TRACKING FOR PHOTOVOLTAIC SYSTEMS

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Abstract

In this paper, both topologies, three level neutral-point clamped diode and the modified inverter are presented which are fed by PV system as DC source input to drive an induction motor. A fuzzy logic maximum power point tracking (MPPT) technique is used to ensure the PV array to operate at maximum power and to adjust the DC voltage. Simulation results show the feasibility and ability of the modified topology, which can improve the quality of power.

Keywords: Fuzzy logic controller, MPPT boost converter, Photovoltaic system, Three level inverter, Total harmonic distortion.