# Experimental Investigation on the Properties of Concrete with Coconut Shell as Replacement for Coarse Aggregates and Palm Oil Fuel Ash for Cement

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## ABSTRACT

This research involves the investigation of coconut shell and palm oil fuel ash in the production of light weight structural concrete. The aim of this research is to discover more sustainable materials that can be used in the construction industry. These materials have to meet up with the standard qualities that the current materials are offering and provide ease of access to the material and also to be economical.

The laboratory experiment was conducted on concrete that was incorporated with different composition of C.S. and POFA replacement for the coarse aggregate and cement relatively. The percentages that where analysed are 0%, 10% and 20% of C.S. combined with 10%, 15% and 20% of palm oil fuel ash. These ratios were calculate using weight and a target compressive strength of 20 MPa on day 28 using ordinary Portland cement, the mix proportions of the concrete are based on the D.O.E mix design to determine the weight required for each materials. The mechanical testing for the samples involved compressive strength, flexural strength and slump test to determine workability. All specimens were cured in water and there are 3 cube samples for compressional test and 2 beam samples for flexural test were tested for each set of samples on day 7, day 14 and day 28.