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ABSTRACT

Title of abstract:	Durability Properties of Structural Lightweight Concrete Made from Oil Palm Shell (OPS)
Author's Name and job title:	TEO, Delsye C.L. Lecturer, Faculty of Engineering, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia, Tel: +6-082-583273, Fax: +6-082-583409, E-mail: tdelsye@feng.unimas.my
Co – author names, job title and organisation:	MANNAN, M. A. Associate Professor, Civil Engineering Program, School of Engineering and Information Technology, Universiti Malaysia Sabah, 88999 Kota Kinabalu, Sabah, Malaysia, Tel: +6-088-320000, Fax: +6-088-320348, E-mail: mannan@ums.edu.my KURIAN, V. J. Associate Professor, Civil Engineering Department, Universiti Teknologi Petronas, Bandar Seri Iskandar, 31750 Tronoh, Perak, Malaysia, e-mail: kurian_john@petronas.com.my
Abstract:	Malaysia is currently the largest producer and exporter of palm oil, generating over 4 million tonnes of waste oil palm shell (OPS) annually and the amount of OPS generated will remain vast in the foreseeable future. The large quantity of OPS waste has led to studies into the possible use as aggregates in structural lightweight concrete. The utilisation of OPS as aggregates in concrete provides a holistic solution to the problem of natural resource depletion. Its use in concrete can help to overcome the over-dependence on depletable natural resources such as stone aggregates. It has been found that OPS can function as coarse aggregates in structural lightweight concrete production. For any structural member, the durability is one of the most important considerations during its service life. This paper presents the durability properties of OPS concrete. These include the water permeability, water absorption, volume of permeable voids (VPV), sorptivity, and rapid chloride penetration test (RCPT). In general, it was found that the results obtained were comparable to those of other conventional lightweight concretes.