

**Dynamic Responses of Truss Spar: A Comparison of Long-Crested and Short-Crested Waves with Current**

By

Muhammad Syahmi Bin Sazali

15017

Dissertation Submitted in Partial Fulfillment of the requirements for the

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(Civil)

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Universiti Teknologi PETRONAS,  
Bandar Seri Iskandar,  
31750 Tronoh,  
Perak Darul Ridzuan.

CERTIFICATION OF APPROVAL

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Approved by,

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(Dr. Carrol Ng Cheng Yee)

UNIVERISTI TEKNOLOGI PETRONAS

TRONOH, PERAK

January 2015

## CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

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MUHAMMAD SYAHMI BIN SAZALI

## **ABSTRACT**

A comparison between short-crested wave and long-crested together with the presence of ocean current that induced dynamic response on Truss Spar wave studied. A short crested wave is defined as a combination of long-crested waves that propagated from different directions. It is more complex and suits the real sea state. In this paper, numerical study on the dynamic responses of the truss spar due to both ocean waves and current was performed. The physical motions in surge, heave and pitch will be analyzed in terms of the max peak, minimum peak and amplitude of the time series generated from the Response Amplitude Operator (RAO). The responses due to the Short-crested waves with current expected to provide a lower responses to the truss spar compared to the long-crested one.

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