Design of a Wave Energy Convertor, Pelamis, Using the Wave Characteristics of the Chabahar Site

Mohammadi-Ahmar, Akbar1; Yazdani, Keyvan2; Siadatmousavi, Seyed Mostafa3*; Taheri, Seyed Mohammad4

1- M.Sc. student in Mechanical Engineering, Iran University of Science and Technology, Tehran, Iran, Email: akbar_mohammadi@mecheng.iust.ac.ir
2- M.Sc. in Mechanical Engineering, Iran University of Science and Technology, Tehran, Iran, Email: yazdani.keyvan@gmail.com
3- Assistant Professor, Department of Civil Engineering, Iran University of Science and Technology, Tehran, Iran, Email: siadatmousavi@iust.ac.ir
4- B.Sc. in Physics, Science and new technologies, Nedsa Research Organization, Tehran, Iran, Email: sm.taheri59@gmail.com

Received Date: July 22, 2013                                      *Corresponding Author             Accepted Date: June 22, 2014

© 2014 Oceanography. All rights reserved.

Abstract

A wave energy convertor, Pelamis, was conceptually designed based on the forces applied to the instrument according to the Airy wave theory. Turnings of the bending arms were transformed into horizontal movements of pistons in the hydraulic cylinders which resulted in the generation of alternating current (AC) electricity without variation in AC frequency, using hydraulic circuits. In this study, the optimal design of Pelamis for applications in Chabahar area was selected among several assumed alternatives which could provide 16 KW of electricity.

Keywords: Wave Energy, Pelamis, Chabahar Bay, Renewable Energy.