

## عنوان مقاله:

Expert Condition Monitoring of Shore-parallel Structures Using Fiber BraggGrating Network

## محل انتشار:

هفتمین کنفرانس بین المللی مهندسی برق، الکترونیک و شبکه های هوشمند (سال: 1401)

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## خلاصه مقاله:

Fiber Optic sensor technology as the main part of sensing systems, attracted valuable academic and industrial interests over the past decade, because of their abilities, capabilities including accuracy and precision. Fiber Bragg grating (FBG) sensors are unique from other types of fiber-optic sensors as the measured information is wavelength-encoded, which enables self-referencing and evolves their signals less susceptible to the potency of inconsistencies. The proposed system is presented and investigated the FBG sensor network for harbor and jetty structure health monitoring to effectively detect, locate, and assess damages, by using a specially designed remotely operated vehicle (ROV) as a source of applied underwater vibration. The implementation and installation of fiber optic sensing (FOS) technologies are the best way to the incapability of traditional electrical strain gauges in a large sensing network for structural health monitoring of different building and civil engineering structures. It is Difficult and sometimes Not possible to measure a fault or crack in the offshore or onshore construction for various reasons, including climate and environmental conditions. The goal of the present work emphasized the technical principles and operation of special diagnosis and testing of the signal processing system and introduced the advantages of the proposed procedures to an expert system using Fiber Bragg Grating (FBG) sensors to monitor the dynamic strain and temperature of the target structure. These studies demonstrated the superiority of FBG sensors over conventional sensors in many crucial aspects. Structural response reflects the structural condition as well as the excitation force. Structural health monitoring (SHM) is an active area of research devoted to expert systems that can autonomously and proactively .assess the structural integrity of offshore and near-to-shore structures

## کلمات کلیدی:

"Fiber Bragg Grating" "Structural health monitoring" "Vibration analysis" "Sensing network" "Expert System"

## لینک ثابت مقاله در پایگاه سیویلیکا:

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