

图书基本信息

书名：<<结构、材料与环境健康监测国际会议论文集（全两册）>>

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内容概要

The term "health monitoring" can be interpreted in many different ways depending on the specific application. For medical care, it might refer to the implant of warning devices in heart-attack prone patients. Oil refineries use transducers to monitor potential leakage of storage tanks. The same applies to gas and oil pipe lines where damage can be detected and repaired prior to major disasters. Failure control and prevention are of top priority to the aeronautic and aerospace industries. Buildings and bridges are no exceptions as their premature malfunction can have a significant impact on the efficiency of public works infrastructure system. This translates into cost and final burden to the public. The explosion of science and technology in the past decades on the use of sensors and/transducers has provided new ideas and ways to forecast structure and material failure. Even though tests and standards are being implemented, ramifications have been necessary because of the rapid advancement of research findings from the different disciplines. These results are very much fragmented and dispersed. This is especially true in health monitoring when the technology is viewed on a common basis. Much has been learned from past experience that damage monitoring technologies developed in aeronautics cannot be directly transferred to those in civil engineering that is more concerned with the use of construction materials even less to bioengineering where the interface behavior of tissues in vivo with man-made materials react very differently. The interface mechanics of stress transfer can vary widely for the embedment of sensors into concrete and metal, not to mention the effects of environment. These details can affect the interpretation of the monitored signals. One of goals of this conference is to emphasize the distinction among the different applications. They may include bridges, road ways, high sky risers, buildings, etc. Aircrafts, ships, automobiles, etc. can be categorized into a different group. In addition, there is the need to develop damage or failure models to define the relevant parameters and to assess the sensitivity of instrumentation. The details of health monitoring are multifaceted as mentioned above. But there is a general framework within which the following topics can be addressed for the 2007 HMSME conference.

书籍目录

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