

2nd International Conference and Exhibition on **Industrial Engineering**

November 16-18, 2015 Dubai, UAE

A passive thermography approach to bearing condition monitoring

Wael Moussa and Ming Liang
Egyptian Navy, Egypt
University of Ottawa, Canada

Passive thermography is a non-contact monitoring approach with a great potential to be used for early bearing fault detection. However, to date, it has only been used to complement vibration-based approaches. However, the vibration-based methods are effective only in detecting physical damages such as bearing cracks and spalls. They cannot be easily used to monitor other unwanted conditions including the lack of lubrication. As such, this paper proposes a method based on temperature rise differences for the detection of both physical bearing damages and lubrication problems based on the mechanisms of the heat sources generated during a bearing operation as well as the mutual effects between these sources and bearing faults. The performance of the proposed method has been examined experimentally. The results have shown that the proposed method has a promising potential to be used for the detection of both physical bearing damages and lubrication related problems.

waelhashem55@yahoo.com

Investigation of shift work disorders among security personnel of the hospitals affiliated to Shiraz University of Medical Sciences, Shiraz, Iran

Zahra Zamanian, Heidar Mohammady and Mohammad Taghi Rezaeiani
Shiraz University of Medical Sciences, Iran

Background & Objectives: In today's advanced world resulting from the improvement of technology, societies tend to encounter a large number of problems and accidents. In case an event takes place, hospitals and the treatment staff have to take care of the patients. Moreover, university's security personnel are responsible for the security of the hospital, patients' lives and the modern, expensive facilities of the hospital. Such personnel are classified as shift workers and are exposed to health disturbing factors more than other shift workers.

Materials & Methods: The present study was a case-control one who's sampling was carried out through census. The study was conducted among 130 security personnel as well as 130 unexposed employees among the security guards working day shifts and the office workers. The unexposed individuals were not working in shifts but were similar to the shift workers regarding age and health status. Data were collected using SOS (Survey of Shift Workers) questionnaire as well as measuring height, weight and blood pressure of the shift workers in their work shifts.

Results: The findings revealed a significant difference between the two groups regarding the increase in blood pressure, sleep disorders, dissatisfaction in individual, family and social lives as well as increase in psychological, cardiovascular, gastrointestinal and musculoskeletal disorders. Moreover, these disorders were significantly higher among the shift workers.

Conclusion: The study results suggest the necessity to pay more attention to the shift workers' needs and problems involving them in planning the shift schedules and improving their working conditions.

zamanianz@sums.ac.ir