

Condition Monitoring System of Mine Air Compressors Based on Wireless Sensor Network

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Abstract : In the current mine air compressors monitoring system, there are some difficulties in the installation and maintenance because of the wired connection. To solve the problem, this paper introduces a new air compressors monitoring system based on ZigBee in which the monitoring parameters are transmitted wirelessly. The collecting devices are designed to form a cluster network to collect vibration, temperature, and pressure of air cylinders and other parameters. All these devices are battery-powered. Besides, the monitoring software in PC is developed using MFC. Experiments show that the designed wireless sensor network works well in the site environmental condition and the system is very convenient to be installed since the wireless connection. This monitoring system will have a wide application prospect in the upgrade of the old monitoring system of the air compressors.

Keywords : condition monitoring, wireless sensor network, air compressor, zigbee, data collecting

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