

ENGINEERING

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This paper presents a method to detect air leakage ~~of from~~ an air conditioning compressor using image processing techniques. ~~Air leakage should be prevented to ensure the Quality performance of an air conditioning compressor should not have air leakage.~~ To ~~test detect~~ an air conditioning compressor leak, ~~air is pumped into a~~ compressor ~~is pumped with air~~ and then submerged into ~~the a~~ water tank. If air bubbles ~~occurs are observed from the a~~ surface of the ~~air conditioning~~ compressor, ~~then~~ that ~~leakage~~ compressor must be returned for ~~maintenance repair~~. In this work, a new method to detect ~~air~~ leakage and search ~~for the~~ leakage point with high accuracy, ~~fast speed~~, and precision ~~processes was~~ proposed. In ~~the~~ preprocessing ~~procedure stage~~ to detect ~~the~~ air bubbles, threshold and median filter techniques ~~have been are~~ used. ~~The C~~connected-component labeling technique is used to detect ~~the~~ air bubbles, while blob analysis is ~~employed as the searching~~ technique to analyze a group of ~~the~~ air bubbles in sequential images. The ~~proposed algorithm was tested in~~ experiments ~~are tested conducted with proposed algorithm~~ to determine the leakage point of an air conditioning compressor. The location of the leakage point was ~~re~~presented as a coordinated point. The results demonstrated that ~~the proposed method could accurately detect the leakage point during the process could be accurately detected.~~ The ~~error in the estimation leakage point compared to the actual leakage point had error was~~ less than 5% ~~compared to the real leakage point~~.

Comment [A1]: The original wording of "quality of ... compressor" was not clear. I have suggested using "performance" instead. Please review. You may alternatively consider using "efficiency".

Comment [A2]: I think "repair" is more appropriate since the compressor has issues that need fixing.

Comment [A3]: The use of the word "processes" was not clear in this sentence. If you meant that the method employs certain processes, then I suggest revising the sentence to "In this work, a new method that employs highly accurate, fast, and precise processes to detect... was proposed."

Source: [Air Conditioning Compressor Air Leak Detection by Image Processing Techniques for Industrial Applications](#) by Kritsada Pookongchai, Prasit Nakornrat, Bongkoj Sookananta and Panhathai Buasri, used under [CC-BY 4.0](#)