Product quality testing and production line supervision support

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Abstract: This paper is focused on manufacturing of low-power electric motors. Nowadays, the manufacturers are facing keen competition on the market. Therefore they are forced to purchase their products at the lowest possible prices and still comply with rigorous quality standards. In order to meet the above requirements automatic and in-depth quality end-tests are applied in modern mass manufacturing. Such diagnostic systems enable fast, reliable and objective quality assessment of every single product at the end of the assembly cycle.

The main purpose of diagnostic systems is to reveal (eliminate) all faulty products or perhaps to classify the end products into different predefined quality classes according to relevant features. However the diagnostic results (values of feature set) are usually stored in a database. The issue presented in the underlying paper concerns how to get any additional information about the production line performance from the current and past diagnostic results. For that purpose the methods from data mining and signal processing will be used. The final goal is to build a support system for production line operators.