

INDUSTRIAL CASE STUDY

Application of Mahalanobis-Taguchi method as an optimisation tool for multi-product production process

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ABSTRACT

In this paper the Mahalanobis-Taguchi System, which is a diagnosis and forecasting method for multivariate data, was used to monitor three correlated quality characteristics (moisture, grammage and thickness) from both manual testing and Distributed Control System (DCS) scanning during product development. Mahalanobis distance is a measure based on correlations between the variables and

different patterns that can be identified and analysed with respect to a base or reference group. This paper presents a comparison of the Mahalanobis-Taguchi System as a standard statistical dynamic tool for defect detection by identifying abnormalities. The objective of this research is to provide a simple method for defect detection with acceptable alpha (probability of type I) and beta (probability of type II) errors.

Keywords: *Principal Component Analysis, Mahalanobis-Taguchi System, recycled fibre*