

Analyzing On-Line Process Data for Industrial Production Quality Control

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Abstract : The monitoring of industrial production quality has to be implemented to alarm early warning for unusual operating conditions. Furthermore, identification of their assignable causes is necessary for a quality control purpose. For such tasks many multivariate statistical techniques have been applied and shown to be quite effective tools. This work presents a process data-based monitoring scheme for production processes. For more reliable results some additional steps of noise filtering and preprocessing are considered. It may lead to enhanced performance by eliminating unwanted variation of the data. The performance evaluation is executed using data sets from test processes. The proposed method is shown to provide reliable quality control results, and thus is more effective in quality monitoring in the example. For practical implementation of the method, an on-line data system must be available to gather historical and on-line data. Recently large amounts of data are collected on-line in most processes and implementation of the current scheme is feasible and does not give additional burdens to users.

Keywords : detection, filtering, monitoring, process data

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