

Вывод

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ALGORITHM AND SOFTWARE OF AUTOMATED PROCESS CONTROL SYSTEM WITH ESTABLISHED PRODUCT PARAMETERS

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Abstract. The quality of a product, which was manufactured during some technological process, is evaluated using its input parameter values. For example, the main fermentation process creates beer, its readiness is characterized by the quantity of alcohol, acids, alkali in beer wort, extract content value, etc. The dynamics of product parameters changes is often different or mixed, external influences are unpredictable, so control of such processes is a complex scientific problem. It is particularly difficult to predict parameter values for a specified time, as well as to determine the technological process completion time taking into account the impact of external factors and controlling action of the automated process control system.

The paper presents the developed models and algorithms, which can be used by the automated process control system with established product parameters. The paper focuses on the problems of predicting product parameters dynamics, as it largely affects the product quality and its manufacturing time.

The paper proposes the scheme, algorithms, models and units of the automated process control system based on the Kalman filter. User screen forms and the displayed information of each unit is also presented. The algorithm is implemented in a high-level programming language C#.

Keywords: optimal duration, automated process control system, algorithm, software.

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