

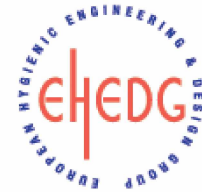


8<sup>th</sup> Central European Congress on Food

*Food Science for Well-being*  
23-26 May 2016, Kyiv, Ukraine



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**INTELLIGENT CONTROL OF RHYTHM FUNCTIONING  
OF THE TECHNOLOGICAL COMPLEX OF THE SUGAR REFINERY**

Technological processes of sugar production have all special features of complex organizational and technical structures. The main factor is a considerable degree of uncertainty and the complex behavior of the object of control because of the presence of intermittency effects, that is interlaced of determinate, stochastic and chaotically behavior. An important prerequisite for the best possible technical-and-economic index of the sugar production is to ensure the necessary rhythm functioning of all of manufacturing division of sugar refinery leads to improving of the quality of finished products, decreasing of devices, additional expenses, and energy costs of production. The essential problem in providing the necessary functioning rhythm of technological complex of the sugar refinery is the availability of criteria and related to resources conflicts. These factors complicate the problem of technological forecasting, analysis of production situations, the allocation of resources in the production of sugar and operational decision-making of economic incentive for managing without the compulsory nature.

Intelligent control is provided by comprehensive observation of the control object, analysis of technological information, forecasting the development of technological processes of different depth, including trends and forecasting of system modifications due to the intellectual information-measuring systems. Considering the essential degree of uncertainty and the presence of intermittency in object controls the intelligent control system of rhythm functioning of technological complex of the sugar refinery was developed. It is based on engineering knowledge, concept of nonlinear dynamics and determinate chaos, multiobjective optimization methods in conditions of conflict intelligent control system of functioning rhythm technological complex of the sugar refinery that is integrated into the information system of the enterprise in accordance with state-of-the-industry conception of the network-centric control.

**KEY WORDS:** *intelligent control, object, technological complex, sugar refinery*