

ANALYSIS OF MATHEMATICAL MODELING IN BIOTECHNOLOGICAL OBJECTS

Introduction. To date, the most widely used control methods and algorithms in the automation of industrial biotechnological processes are based on the strict formalization of the problem and the availability of quantitative estimates of the solution parameters.

However, these methods are not applicable to the management of non-stationary biotechnological objects, and their functioning cannot be formalized by strictly numerical methods. The characteristics that solve these problems include a large share of high-quality information, the associated uncertainty of information and the possibility of contradictory decisions of experts who make management decisions, which makes it possible to classify industrial biotechnological facilities as fuzzy objects. The theory of fuzzy systems and fuzzy logical devices is the basis for the construction of control systems for such objects. In the works of researchers [1-5], the possibilities of taking into account information uncertainty when modeling the process of fermentation technology for biogas production are considered. To solve this problem, a mathematical model of biochemical processes occurring during fermentation is proposed in the first approximation.

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