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## Многоагентная система управления качеством технологических процессов с опережающим прогнозированием на базе SCADA

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The article considers the concept of a multi-agent quality management system for technological processes integrated into modern SCADA systems. Developing approaches to intelligent quality management proposed by Milovidova A.A. and co-authors, the system implements a predictive forecasting mechanism for product quality changes based on analysis of raw material input parameters and equipment status. The architecture includes intelligent agents responsible for monitoring individual production areas, coordinating control actions, and adapting to changing conditions. A distinctive feature is the use of fuzzy logic for processing uncertainty in quality assessments and machine learning for continuous improvement of forecast accuracy. The proposed approach provides proactive quality management under conditions of input raw material characteristics instability. The system can be implemented as an intelligent add-on module for existing SCADA platforms, ensuring seamless integration with current industrial infrastructure while significantly enhancing decision support capabilities for production managers. The multi-agent architecture ensures system scalability and flexibility, allowing its adaptation to various industrial sectors, including mining, chemical, and food industries, where raw material quality variability presents significant challenges.

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