

## THE ORGANIZATION OF EFFICIENT FUNCTIONING AND IMPROVEMENT OF INDUSTRIAL AND ENVIRONMENTAL SYSTEMS

The paper deals with optimization of the process of purification and desulfonation of the flue gas in industrial and environmental systems.

The objects of the research are industrial and environmental systems producing gypsum. The research presents the modes, methods and control circuits of the systems operation in order to monitor the quality of byproduct and end product. Also the subject of the research is the analysis and synthesis of organizational and technical solutions and the development of the methods for determining and assessing the feasibility of the process operational optimization on the basis of the received results. In the given theoretical research and practical studies the methods of structural organization and mathematical modeling of production processes were used, together with the methods of their engineering, operational optimization, and linear synthesis of organizational control systems.

Analytical and idealized mathematical models of gypsum production on flue gas desulphurisation units were compared.

The practical significance of the research is in theoretical base and recommendations for scientifically-based selection of organizational structures, modes, methods and control circuits. These organizational structures, modes, methods and control circuits are used for establishing new industrial and environmental systems, as well as updating and improving existing ones. Preliminary calculations show, that the obtained results will improve the quality of end products and improve the technical and economic performance. Also they will help to reduce the time and cost of research while creating industrial and environmental systems.

**Key words:** automation, industrial and environmental systems, optimization in gypsum production.

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