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DEVELOPMENT OF SYSTEM OF AUTOMATIC CONTROL BY SETTING OF THERMAL TREATMENT OF DISPERSION MATERIALS WITH THE USE OF NEURON NETWORKS

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The system of automatic control by the modes of operations by setting for thermal treatment of dispersion materials with the induction method of transmission of energy to the teploperedayushey surface on the basis of unclear neuron networks is developed.

Keywords: inductor, induction heating, unclear system, rape, unclear neuron network, system of automatic control.

Today the rise of naukoemkosti of technologies is the important factor of growth of potential of economy, including electro-technologies with the use of the computer intellectual systems of management. For the modern industrial electro-technological systems it is the small level of specific power expenditures on unit of products, comfort of exploitation and reliability of work, which considerably rely on quality of the systems of automatic control. Complication of development of such systems increases in the conditions of the unforecast change of tension of feed, and also indefinite changes of parameters of object of adjusting, which can arise up by virtue of features of unstationary technological process. The purpose of researches is creation of the system of automatic control by the modes of operations of setting for thermal treatment of dispersion materials with the use of fuzzy logic and hybrid neuron networks. Research method In the conditions of vagueness of the electric

modes of modern electrical engineering and electronic equipment it is difficult to present the change of tension of electric network of feed in a mathematical form or sprognozirovat. At the same time the automatic control in the case of instability of tension of feed must provide low specific power expenditures and receipt of products of high quality. Rejection of tension of feed in the electro-technological systems can be provoked to whole alongside factors. Complication of tasks of the high-quality adjusting and stabilization of tension of the electro-technological systems consists in forming of general picture of vzaimootnosheniy of all constituents of influencing. Acceptance of decision about the pattern of behaviour of the system on the whole must be based on consideration as rejections of tension, character of nonlinear of loading, parameters of technological process the states of executive branch so features of functioning of regulators and stabilizators of tension with different ways of management by power executive branches.

Structure of most systems of adjusting and stabilization of tension, today takes place on production similar to the traditional in-plant systems with PID-law of management can not provide the optimum management and acceptance of decisions on the management without mathematical description of the system. The systems with the prognosis management and so-called «robastnie systems» which require the presence of the determined prichinno-sledstvennoy communication between entry and output parameters as mathematical equalizations are known which it is impossible to define for most industrial electro-technological processes. And in default of reliable mathematical description of conduct of the system of adjusting, in terms unforecast changes of tension it is impossible to set the optimum coefficients of tuning of ПИД-regulator which must work on the nonlinear loading.

The analysis of home and foreign scientific and technical literature shows that for the rise of efficiency of management, quality of adjusting and stabilization in the wide range of tension of the electro-technological systems the mathematical vehicle of fuzzy logic is one of the most expedient ways, because allows to identify the

electro-technological systems to facilities of formalization of natural linguistic expressions and logical conclusions with the synthesis of unclear logical comptroller and has nonlinear transmission description. Unclear system of management, except for power of supervision after the entry parameters of transformer and their analysis, is able to set the relations between the parameters of supervision and produce estimation of degree of intercommunication between them on the basis of rules of knowledge base and make decisions on the management by an executive branch on the basis of reproduction of optimum relations. It will provide the rise of efficiency and upgrading adjusting and stabilization of tension with reduction of time of output on the set mode at reduction of size of pereregulirovaniya . Therefore creation and research of the effective intellectual systems providing adjusting and stabilization of parameters in the wide range of change of tension on the basis of methods of fuzzy logic is a very actual task. Researches of the created by unclear neuron networks automatic system of management, in which the coefficient of tension relies on the initial temperature of dispersion material and operating tension of network, confirmed its adequacy for the management by the modes of operations of setting. Thus the srednekvadratichnaya error of tuning of the system made 0.0034573 at treatment of Testing data and 0.0037069 at treatment of Cheking data.