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INVESTIGATION OF THE PROCESS AND DEVELOPMENT OF TECHNOLOGY FOR THE PRODUCTION OF MINERAL FERTILIZER CONTAINING IN GRANULATION TOWERS

The forced disintegration of a single jet or a group of jets into droplets is a very complex phenomenon, depending on a number of factors. The main interest is the modes of droplet formation with certain characteristics. The mode of formation of homogeneous droplets is monodisperse, it is very specific and it must be selected by forming the conditions for the jet to flow out of the hole and various signals of excitations superimposed on it.

A number of works have been devoted to the study of forced jet decay. Papers [7, 8] are devoted to the conditions of the formation of "satellites" during the disintegration of a jet into droplets with an analysis of the evolution of disturbances on its surface under various flow regimes and hole shapes.

The issues of nonlinear dynamics during the decay of the free surface of the jet stream and the occurrence of disturbances on its surface, the main areas with qualitative differences in the formation of droplet structures are given in [9]. Particular attention is paid to the mechanism of occurrence and imposition of disturbances on the jet of fluid flowing out of the hole, methods of their transmission to it [10]. At the same time, in these works, the issues of spontaneous jet decay are considered, and the perturbations are mainly of a long—wave nature – modulated Mechanical engineering with low-frequency noise, which led to a low degree of monodispersity of droplets. In addition, when creating equipment for the formation of droplet structures in industry , the splitting of the jet into droplets when disturbances from external sources-generators and their parameters are imposed, the dependence on the fluid pressure in front of the hole is of particular interest.

To determine the modes of jet decay under the action of special forced vibrations , experiments were carried out on a laboratory installation according to the scheme: liquid was fed into the granulator body to a set value of the level, which was maintained constant, after which a special signal was sent to the emitter disk. The signal parameters were variable: the signal frequency varied in the range of 200 ÷ 1500 Hz, the amplitude was 4.4 V and 10.4 V. The photos obtained during the research were analyzed by a package of application programs for solving technical computing problems Matrix Laboratory, which made it possible to determine the size of droplets, the distance between them and other geometric parameters.

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