

## RESEARCH OF FALSE BOILING LAYER WORK IN VORTICAL GRANULATOR

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The question of granulation process intensification is actual taking into account the tendency of granulation technological charts modernization and creation of new lines with great specific power.

On the basis of own fundamental researches at the department "Processes and chemical equipment" of the Sumy state university new various technologies and equipment are developed and applied in industry. For this purpose the department has all necessary material and technical base.

The research laboratory of the department are developed new granulation methods of and devices for their realization (namely false boiling vortex layer granulators) decide the question of progressive granulation technologies creation with the purpose of issue of high-quality products. Setting up of new enterprises based on the manufacturing of granular products by means of false boiling vortex layer granulators is one of the ways expenses of decline for producing granular porous products and increasing their quality. To achieve this goal we must introduce the newest developments of modern science and technology.

The physical features of involute axis gas stream determine conformities to the law of processes which flow in them. Research of conformities to the law of involute streams in axis channels, in particular decision of concrete case of false boiling vortex layer granulators functioning of, is an actual scientific and practical problem.

On the base of the protected patents of Ukraine the experimental false boiling vortex layer granulator is created with the purpose of research of terms of vortex layer forming and opinion of various technological and structural factors influencing on movement of phases in the working chamber of this device.

As a result of experimental researches conducting the graphic dependences of hydrodynamic parameters of stream after crossing of false boiling vortex layer granulator working chamber of with additional visualization as video data.

By means of experimenting, photographing and filming a physical model of diphasic stream interaction within the limits of working cavity of the false boiling vortex layer granulator was worked out. The ways of subsequent improvement of gas-distributing units for providing of constant vortical granules motion were defined.

The results of comparison of theoretical bases and experimental results of experiments in combination with modern possibilities of mathematical design are one of decision stages of the lay task is introduction of the vortex layer granulation technology with the use of small false boiling vortex layer granulators.