

1. Surname, name
Knaub Ludmila
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Gas-dynamics processes of poly-dispersion flows' interaction at vortex apparatus
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4. Employer
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6. Scientific supervisor
Barsukov Sergey, Dr.Eng., Professor
7. Opponents
Voinov Aleksandr, Dr.Eng., Professor Kesova Lubov, Dr.Eng., Professor Shubenko Aleksandr, Ph.D.Eng., Senior researcher
<p>The thesis is devoted to the solution of the important economic problem of energy savings and improving ecology owing to the utilization of vortex apparatus to the technological process which diminish consumption, work in a close-loop and use alternate fuels.</p> <p>This thesis states the theory of vortex heterogeneous streams used for blending or deviding into components with the analysis of change of gas-dynamic parameters when interacting with the basic filling streams in die area of free, forced and potential vortexes.</p> <p>On the basis of comprehensive analysis in changes of gas-dynamic functions and parameters in vortex streams half-industrial and industrial separators, vaporizes-mixers and refrigerator units were designed, they meet the requirements of technological processes of heat regulation, separation and preparation of working mixtures for the optimal combustion. Designed vortex gas-dynamic apparatus less energy-intensive, metal-intensive and more variable, they have smaller gabarit and cost in comparison to the existing owes due to the lack of movable units and systems. They work in exclusive circle, that is why they have better ecological indexes.</p> <p>Obtained practical effects of the tests became the basis for the worked out method of the vortex apparatus.</p> <p>Key words: power consumption, economic benefit, gas-dynamic process, a polydisperse heterogeneous stream, a vortical separator, the evaporator-amalgamator, the refrigerating unit, an accumulating stream.</p>