

The analysis of phase processes in sorption accumulators

A. Petrenko

Presented mathematical model of fluid dynamics in heterogeneous environments Euler variables in a cylindrical symmetry. The analysis studies the flow of multicomponent mixtures, one of which is condensed. Consider the diffusion processes in the sorption thermotransformers.

Key words: *mathematical modeling, thermodynamic equilibrium, the chemical potential of Gibbs, Boltzmann constant, macroscopic diffusion, entropy.*

Mathematical models are the basis for research of hydrodynamics of multiphase environments. The equation of the movement and a state for all environment in general setting tension and internal energy register in the offer of local thermodynamic balance when in each point it is possible to determine environment T temperature. Thus is accepted that the tensor of speeds is deformed, and the barotsentricheskikh of speeds of mixes v is defined by a field.

The purpose of researches – consideration of diffusive processes in sorption accumulators with the analysis of a current of multicomponent mix when one of components is condensed.

It is considered that influence of composition of mix (ρ_i , $i = 1, 2, \dots, N$, ρ – density) is directly shown through the physical and chemical parameters entering the equation of the movement and a state (a thermal capacity, viscosity coefficient, the elasticity module, etc.).

Under the influence of external forces, for example winds, diffusion occurs in the environment representing a turbulent stream.

One of the characteristic phenomena taking place in sorption systems is a diffusion of the agent.

For the established whirl and stationary external conditions the diffusion equation in a stream has an appearance:

