

SUMMARY
on research reports on the 2015 of "Fluid Mechanics" Department
"STUDY OF TRANSFER PROCESSES FOR NON-STATIONARY
PROCESSES IN LIQUIDS AND GASES"

In the reporting period, department staff performed 5 research projects in the frame of Department's annual research topics:

1. Investigation of the effect of elektrokinetik features on the non-stationary processes in the liquids flow.
2. Investigation of the effects of heat transfer on the non-stationary processes in the flow of gassy liquids.
3. Investigation of the pressure distribution under nonstationary filtration in porous media.
4. Investigation of the effect of accumulated damage to the deformation properties of materials.
5. The problem of the propagation of disturbances in a bubbly carbonated liquid with free boundaries.

In the frame of research projects a number of issues related to the study of influence of elektrokinetik effects under the non-stationary processes of the liquids flow are investigated; study the effects of heat transfer on the non-stationary processes under carbonated fluids flow; investigation of the pressure distribution under nonstationary filtration in porous media; investigation of the effect of accumulated damage to the deformation properties of materials; the problem of the propagation of disturbances in a bubbly carbonated liquid with free boundaries.

According to the research results as the most important scientific result of the department topics the possibility of regulating the pipeline capacity under the carbonated liquid flow by temperature controlling at the boundary "pipe – liquid". The effect on the hydraulic performance of gas-liquid flow depending on the temperature difference at the contact of "liquid-pipe wall".

Experimental studies of the dynamics of the continuous gas evolution, slippage effect and high-frequency waves generating at the interface of "liquid-pipe" is a possibility of achieving the maximum pipeline capacity depending on the temperature difference.

Department Head,
Corresponding member
of the Azerbaijan NAS

Geylani Panahov