

DEVELOPMENT OF HEAT PUMP SYSTEM WITH EFFECTIVE THERMAL STORAGE

N. Koneva¹, L. Domorod¹, A. Smargun²

Thermal control laboratory

A. V. Luikov heat and mass transfer institute

P. Brovka str. 15, Minsk 220075, Belarus

Tel +375172841517/ fax +375172922513; E-mail: nsk@hmti.ac.by

²Designer Department

Atlant Incorporated Minsk Refrigerators Plant

Pobediteley av. 61, Minsk 220035, Belarus

Abstract

The objective of research is study of the processes occurring in accumulating medium, in surrounding space, together with the analysis of heat pump systems efficiency coupled with low potential energy storage. Study of temperature (thermal) characteristics is carried out for thermal storages ant different boundary conditions. The modeling of thermal storage elements supports the design of effective heat pump systems. During the carryout of research there was approved an original scheme of thermal storage with ground heat exchanger, results of experimental and numerical study and detailed analysis were performed.