Györki Tamás.
Kovács Ádám
Faculty of Materials Science and Engineering
University of Miskolc

Consultant: Dr Szemmelveisz Tamásné
associate professor

Study on Secondary Utilization of Geothermal Resources in the Mályi Sub-region

The increasing energy demand of the mankind, its environmental polluting and energy wasting live style will guide to the depletion of the natural resources, due to it along with the fossil energy resources the alternative energy resources will come to the front. The availability of the fossil fuels are restricted, their supplies decreasing, therefore replacing few of them, the renewable energy sources can be a solution, from those the geothermal energy is the one, which bears a great importance. The heat of the Earth is conducted form the core to the surface with its different seams.The conversion of the Earth's heat to geothermal source depends on the kind of the rocks and the thickness of the seams. These sources provide the geothermal energy, which can come up to the surface in the form of vapour or hot water. Hungary is in a very lucky situation, because the soil of the Carpathian basin consists of sludgy, reservoir porous rocks, which is a very good heat conductor and it serves the formation of geothermal resources.

The aim of our paper is to investigate the possible secunder application of the geothermal source found in Mályi. The heated secunderheatbearer , which is heated up with the geothermal energy, egress partially its heat energy at the Hidraulic Station , located at the warren of Avas, however with the usage of the circular so-called waste heat the heat energy demand of resident of Kistokaj can be sufficed. We are presenting the heat supply system structure of Kistokaj, investigating the incoming heat quantity and the prospective decrease of the CO_2 emission. We are reviewing the heat demand of a few industrial companies, with them further potential partners can be involved into the geothermal system. Our additional them is the usage of the geothermal energy in an approximately half hectar glass house. We are investigating the structure, the size, the technological parameters, the irrigation system and the water supply system of the glass houses. We are describing the heat demand of the possible cultivated plants, with these data the heat demand of the glass house can be determined. Based on the analysis it can be defined, that the waste heat of the geothermal energy is able to heat up the glass houses in a profitable way.