

# Geothermal Cooling System for a Small House

Dilmi T Ranaweera

Faculty: Ikram Ahmed

*Department of Mechanical Engineering, College of Engineering*

With the rising cost of air conditioning, and the increasing environmental pollution caused by refrigerants, an alternative method for residential cooling needs to be considered. The objective of this research is to find an alternative method to cool a small household without conventional air conditioning cycles that rely on refrigerants.

Here we propose to use the constant temperature at a certain depth below surface as a means for cooling or air conditioning; here we take the conventional AC unit out and utilize the geothermal assisted cooling by using the ground loop fluid in a heat exchanger interacting with the household air.

Although the initial cost of the suggested method is higher than the regular AC systems, the extra cost can break even by the savings gained by the utility charges. In addition to that, it will dramatically reduce if not nearly stop the environmental pollution caused by regular air conditioning systems.