Abstract

This research was aimed at designing of utilization graphic diagram for a thermoelectric heating and simulating of operation this system by electro-thermal model, which same as in designing and simulating of a transistor amplifier. In the design phase, the graphic diagram was simulated by PSPICE program using an electro-thermal model. In system, the heat load can be selected for designing and determining the heat exchanger value of cold side in this graphic diagram. The temperature and heat load at about cold and hot side for operation of the system at design could be simulated by electro-thermal model. The performance of the prototype system for designing and simulating was evaluated the using Melcor, CP 1.4-127-045L and varied the current input and heat exchanger at cold and hot side of the system. The results are close to the simulation of operation of this system.

The research was financially supported by the University of the Thai Chamber of Commerce.