

Study of Parameters Affecting Thermoelectric Module Performance

蔡博章, 黃楚瑜

Mechanical Engineering

Engineering

bjtsai@chu.edu.tw

Abstract

This study is to discuss the effects of clamping pressure, heat source, and cooling air velocity on the performance of thermoelectric by means of an experimental method. The testing facility composed of a wind tunnel, a thermal resistance measuring device, and a water cooling system. During the experimental process, the thermoelectric chip is first sandwiched between thermal resistance measuring device and water cooling system, cooling water is then induced into the radiator and placed in the wind tunnel to dissipate heat and to cool down the thermoelectric chip. Then, various clamping pressures, heat sources, and cooling air velocities are imposed in the experiments. The influence of these parameters on the performance of the thermoelectric chip will be recorded. Finally effects of various parameters on thermoelectric module performance are discovered.

Keyword : parameters thermoelectric
module