

# **Power generation in thermoelectric generators operated under constant heat flux**

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## **ABSTRACT**

Optimization of the electrical operating point of thermoelectric generators (TEGs) is important to improve the overall efficiency of TEG systems. Previous literature focused mostly on characterizing the maximum power point (MPP) of TEGs when operating at constant temperature difference. However, in most practical applications TEGs operate under constant or limited heat conditions. As a matter of fact, in waste heat recovery systems the amount of thermal energy is limited. Under these circumstances, the MPP is different from that occurring under constant temperature difference because the Peltier effect changes the effective thermal resistance of the TEG and the temperature difference across it with variations of the output current.

The focus of this research is to find an algorithm that, taking into consideration the thermal transient response of the TEG when operating under constant heat flux, it is capable of generating more power from the TEG than the current state of the art algorithms.