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Design and demonstration of a thermoelectric generator to power a wireless sensor
Clark Mechlin & Gary Solbrekken

The goal of the project proposed by Marlow Industries, Inc. is to use previously developed analytic models to create thermoelectric (TE) based models for waste heat recovery to power a wireless sensor. The source of the waste heat will be from an automobile engine. The TE module will be placed on the exhaust pipe, engine coolant line, or most likely directly on the engine block. The TE module/heat sink will have a target power output of 100 mW delivered at 3 V. Initially, a literature search was done to evaluate the feasibility and parametrics associated with the task. The project is currently in the modeling stage, where the design will be optimized given the physical limitations of the project. After this model is created, a proof-of-concept prototype will be built and evaluated to validate the modeling.