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Design and Characterization of a Microcombustor for Thermophotovoltaic Devices ABBEY LICHT, MICHAEL MOTOLA-BARNES, METH BANDARA, HAN CHEN, TOM VANDERVELDE, Tufts University — While batteries are currently used to provide power to devices in remote areas, their low energy density (.5MJ/kg) increases carrier weight, limiting the range of applications. Microcombustor systems, on the other hand, rely on hydrocarbon fuels which have a much greater energy density (40MJ/kg) and generate the same power at a fraction of the weight. The microcombustor when paired with a high-efficiency energy extracting device, such as a thermophotovoltaic cell, presents a complete micro-power system. This work describes the fabrication and characterization of a catalytic microcombustor designed specifically to optimize the power production of a thermophotovoltaic cell.

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