SOLAR THERMOELECTRIC CONVERSION

ABSTRACT

Systems and methods utilizing solar-electrical generators are discussed. Solar-electrical generators are disclosed having a radiation-capture structure and one or more thermoelectric converters. Heat produced in a capture structure via impingement of solar radiation can maintain a portion of a thermoelectric converter at a high temperature, while the use of a low temperature at another portion allows electricity generation. Thus, unlike photovoltaic cells which are generally primarily concerned with optical radiation management, solar thermoelectrics converters are generally concerned with a variety of mechanisms for heat management. Generators can include any number of features including selective radiation surfaces, low emissivity surfaces, flat panel configurations, evacuated environments, and other concepts that can act to provide thermal concentration. Designs utilizing one or more optical concentrators are also disclosed.

FIG. 1