

NON-AZEOTROPIC WORKING FLUID MIXTURES FOR RANKINE CYCLE SYSTEMS

ABSTRACT

A power generation system includes a non-azeotropic working fluid mixture and a Rankine cycle system. The Rankine cycle system includes a turbine generator that is driven by vapor of the first working fluid mixture, and a condenser that exchanges thermal energy between the vapor received from the turbine generator and a cooling medium. The working fluid mixture is characterized by a condenser temperature glide during phase change between approximately five degrees and thirty degrees Kelvin, a condensing pressure between approximately one tenth of one percent and eleven percent of a critical pressure of the working fluid mixture, and a condenser bubble point temperature between approximately one degree and nine degrees Kelvin greater than a temperature at which the cooling medium is received by the condenser.

Figure: 3