Abstract (en)

A vapor compression refrigerating system includes a compressor configured to compress a refrigerant, and a radiator connected to the compressor, in which the radiator is configured to receive the refrigerant from the compressor and to reduce a temperature of the refrigerant. The system also includes a pressure reducing mechanism connected to the radiator, and the pressure reducing mechanism is configured to receive the refrigerant from the radiator and to reduce a pressure of the refrigerant. The system also includes a separator connected to the pressure reducing mechanism and to the compressor, a pump connected to the separator, and an evaporator connected to the pump and to the separator. The separator is configured to receive the refrigerant from the pressure reducing mechanism, to separate a liquid portion of the refrigerant from a gas portion of the refrigerant, and to transmit the gas portion to the compressor. Moreover, the pump is configured to pump the liquid portion from the separator to the evaporator, and the evaporator is configured to evaporate the liquid portion into an evaporated portion, and to transmit the evaporated portion to the separator.