

ABSTRACT

IMPROVED HEAT TRANSFER APPARATUS AND METHODS FOR SOLID-VAPOR SORPTION SYSTEMS

In a sorption reaction system comprising one or more first reactors (10) in which a refrigerant is alternately adsorbed and desorbed, and one or more second reactors in which a refrigerant is alternately desorbed and adsorbed, respectively, and having a cooling loop for directing heat transfer fluid to and from said reactors, a method of cooling an adsorbing reactor comprises directing liquid phase heat transfer fluid having a phase change from liquid to gas at a temperature at or below the temperature of adsorption to an adsorbing reactor in heat exchange exposure to the adsorbent utilizing vaporized heat transfer fluid for driving the liquid heat transfer fluid in the cooling loop. The refrigerant may be used as a heat transfer fluid. The invention includes apparatus for carrying out the method.

FIGURE 7