

Extraction of Water from air using Adsorption Refrigeration system

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Water, precisely fresh water is essential for drinking. However, due to ever increasing population of the world, as well as the pollution caused by people, there is a huge scarcity of pure drinking water. The atmosphere contains a large quantity of water in the form of vapor and this endless source of water can be recovered for general drinking purpose. A new innovative method available for extracting water from air is Adsorption Refrigeration (AR). Adsorption refrigeration is clean energy and uses environment friendly refrigerants. Moreover, adsorption refrigeration systems can be driven by low temperature heat source. The present work is focused towards the design and development of refrigeration system for producing water from air for 12 hours on the working principle of adsorption system by using Activated carbon and ammonia selected as working pair. Amount of water collected from the system depends upon the atmospheric conditions (like DBT, DPT, RH) and the amount of air blown on the evaporator. The location selected for installing our project is Pune, Maharashtra. The principal feature of the water obtained by use of this method is the absence of harmful microorganisms and bacteria in it. At the same time, the water obtained from this process has certain trace elements which are necessary. This method used for extracting water from air are much effective than other methods as they do not use ground water, but atmospheric air.

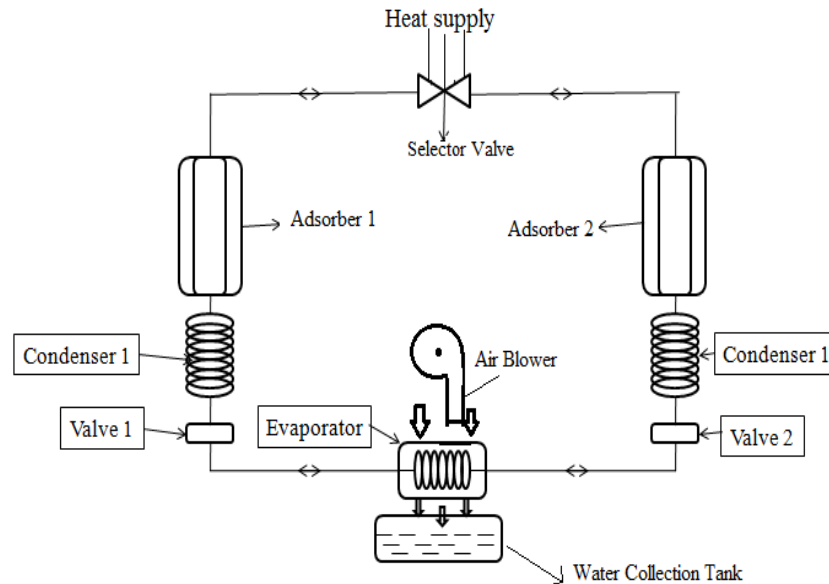


Fig. AR system in extracting water from air