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GENERATING OF FRESH WATER USING VAPOUR ABSORPTION REFRIGERATION SYSTEM FROM THE HUMIDITY IN THE AIR

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Abstract

In vapour absorption Refrigeration system, it generates fresh drinking water and also extracts water from humid ambient air by using Cooling Condensation process offers the possibility of using heat to provide cooling. In this method refrigerant circulates through a condenser and an evaporator coil which cools the air surrounding it, lowering the air's dew point and causing water to condense. A controlled-speed fan pushes filtered air over the coil. The resulting water is then passed into a holding tank with purification and filtration system to keep the water pure. For this purpose heat from a conventional boiler can be used or waste heat and solar energy. When the latter systems are used absorption systems minimize also the adverse effects of burning fossil fuels and thus protect the environment. Absorption systems fall into two major categories, depending on the working fluids. These are the ammonia-water systems, in which ammonia is the refrigerant and lithium bromide-water systems in which water vapor is the refrigerant. The future trends of research in this area would be on other refrigerant pairs which will be more effective.

Keywords : Absorption systems, ammonia systems, lithium bromide systems, solar energy