

Solar Powered Absorption Refrigerator

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This study examines the possibility of using a solar collector to power an absorption refrigerator for cooling of food or medicine in regions with little to no access to electrical power. The study attempts to find the optimal configuration of the solar collector and absorption refrigerator pair. This is done by setting up a mathematical model for the system and iterating the model to find the optimal point of operation. It is found that the most efficient conversion of solar power to cooling power is achieved with a driving temperature of 100 degrees Celsius at a pressure of 0,313MPa. The efficiency at this point was found to be 11%. Furthermore we have tried to compare the mathematical model with a practical experiment. Due to measurement uncertainties the comparison remains inconclusive.