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A NEW TOOL USING SIMULATION AND OPTIMIZATION OF SOLAR ADSORPTION COOLING TECHNIQUE

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ABSTRACT

Cooling systems are transforming into an indispensable part of our life with rapid increase in global warming and ozone layer depletion. Solar-powered adsorption cooling system is real and exciting alternative in future and finds more suitable in remote off-grid areas. In this paper describes a new perspective about adsorption refrigeration studies, a brief thermodynamic study of the system is carried out and effect of operating parameters such as mass concentration ratio, temperature, pressure ratio and refrigerating effect on performance of the system is numerically analyzed. The impact of mass concentration ratio on performance of the system is highly significant than the other parameters considered for simulation. Each operating conditions has a unique optimized value of maximum and minimum mass concentration ratio. Applying very old classic methods in the new software platform put forth wonderful results. Invention of Adsorption Technique is a very old classical phenomenon Application of Visual Studio Ultimate 2012 version of Dot Net services to various adsorption equations by Providing various variable data input put forth wonderful result to the modern scientific eco friendly Environment The main conclusion are that the performance of the system is very sensitive to the mass concentration ratio of adsorbent and the adsorbate with COP, are optimized based on the capacity. In this system equation are solved with micro level intervals and accurate answers were obtained**.**

KEYWORDS: Solar, Adsorption Refrigeration, Simulation, Optimization, Concentration Ratio