



Solar-Powered Absorption Cooling and Supermarket Refrigeration Systems

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SPS Mrz 2014, 2014. Taschenbuch. Book Condition: Neu. 220x150x7 mm. This item is printed on demand - Print on Demand Neuware - This book consists of two different research problems. In the first one, the aim is to model and simulate a solar-powered, single-effect, absorption refrigeration system using a flat-plate solar collector and LiBr-H₂O mixture as the working fluid. The cooling capacity and the coefficient of performance of the system are analyzed by varying all independent parameters, namely: evaporator pressure, condenser pressure, mass flow rate, LiBr concentration, and inlet generator temperature. The cooling performance of the system is compared with conventional vapor-compression systems for different refrigerants (R-134a, R-32, and R-22). The cooling performance is also assessed for a typical year in Tampa, Florida. In the second problem, a numerical model is developed for a typical food retail store refrigeration/HVAC system to study the effects of indoor space conditions on supermarket energy consumption. Refrigerated display cases are normally rated at a store environment of 24C (75F) and a relative humidity of 55%. If the store can be maintained at lower relative humidity, significant quantities of refrigeration energy, defrost energy and anti-sweat heater energy can be saved. 112 pp. Englisch.

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