

## **A STUDY OF SOLAR ENERGY STORAGE USING SUGAR MIXTURE**

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This study is focus on solar energy storage technology using all-glass evacuated tubular collector to collect energy from solar. The advantage of this technology is lower heat loss during time of collecting energy. The solar collector is installed at the facility in Bangkok Thailand. Five parameters which are temperature of water, solar radiation, air speed, ambient temperature and %RH on each day have been collected during experiment. The phase change materials (PCMs) are also installed for storing energy from the solar collector. The advantage of PCMs is good energy storage because it store energy as a latent heat. In this study, sugar mixtures are used as PCMs since it has high specific heat and high latent heat. The sugars studied are sucrose, fructose, glucose, and sugar alcohol are xylitol, and erythritol. The sugar mixtures study in melting temperature range of 80 to 100 degree Celsius. In this study, the eutectic temperature of two and three components are calculated and compared with the experiment to find the phase change material suitable for the temperature range of interest.