

Abstract

The solar dryer with PCM thermal energy storage is designed to allow sunlight shine into the dryer directly, of which temperature and thermal can be controlled.

The study will show the comparative of inside temperature between the solar dryer with PCM thermal energy storage and solar dryer with installed insulator in case of no load on January 2009. The result show that at 08.00 to 16.00 hrs, the solar dryer with PCM thermal energy storage has highest temperature but not over at 55 degree, and average temperature. is lower than the installed insulator dryer about 5 degree. Beteen 16.00 – 19.00 hrs, the temperature of both model has decreased as usual by average temperature in the solar dryer with PCM thermal energy storage is lower than the other about 3 degree. After dawn, temperature in the solar dryer with PCM thermal energy storage will decrease slower than the other. In addition, the solar dryer with PCM thermal energy storage has higher average temperature than other about 5 degree and 11 hours long usage. Thus, the result of the study is shown that the temperature in solar dryer with PCM thermal energy storage can be controlled temperature in solar dryer and longer period usage.

Keyword: Solar Dryer / Phase Change Material