

The objective of this research is to study the application of local materials in solar water heater for domestic use .The materials which are rice husk,coconut fibre and microfibre were used as the storage tank insulators and test were run of two different flow rate 30 and 40 litres per hour. Thus the results were compared .The open loop single-pass solar water heating system was constructed and tested . The collector is of 1 x 2 square metre in area, using dull black

painted zinc plate and copper tube. The plate was 0.45 mm. thick and copper tube was 1.25 cm. in diameter. The collector was single glazed cover and insulated by 5 cm. thick rice husk. There storage tank of 209 litres oil drum were insulated with microfibre , coconut (fibre and rice husk were used. The initial cost systems was 3,923 bahts for the system which used microfibre as the storage tank insulator , and 3,823 bahts for the systems which used coconut fibre and rice husk as the storage tank insulators. The result of the test at the flow rate through the collector of 30 and 40 litres per hour showed that the average solar collector efficiency for each case were 38.10 % and 47.49 % , respectively. The comparison of three insulations of a storage tank using microfibre , coconut fibre and rice husk showed that rice husk was the best. From the economic evaluation, the solar water heating system using rice husk for insulator of storage tank is recommended.