

## **ABSTRACT**

*In this research , a solar water heating system where storage tanks in the system is wrapped with insulation material. This test aims to determine the effect of insulation material on heat transfer in storage tank for solar water heating system. Insulation materials used include Armaflex, Foam, Ceramic Fiber, Glasswool, Cotton, Kapok, Plasticine, Polyfoam, Rockwool, and Styrofoam. The fluids in this solar water heater system are distributed with the help of an aquarium pump. The discharge used to flow the fluid is 150 ml/min, 300 ml/min, and 450 ml/min. From the research results, storage tanks with Armaflex and Rockwool insulation materials have a total heat loss at least than other insulation materials. At a discharge of 150 ml/min, the total heat loss in storage tank with Armaflex and Rockwool insulation materials is 807,429 J and 705,579 J. At discharge of 300 ml/min, the total heat loss in storage tank with Armaflex and Rockwool insulation material is 2,067,534 J and 2,032,464 J. At a discharge of 450 ml / min, the total heat loss in storage tank with Armaflex and Rockwool insulation materials is 2,942,121 J and 3,153,024 J.*

**Keyword** : *storage tank, heat loss, insulation material*