

## An Integral Solar Water Heater

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**Abstract:** *The utilisation of solar energy for water heating is one of the simplest and most direct applications. Consequently, considerable work has been carried out on the design, fabrication and testing of solar water heaters. In the conventional solar water heater, utilising separate solar energy collector and storage tank and employing the thermosyphon effect, the cold water outlet from the storage tank should be higher than the hot water outlet from the collector. Design and fabrication concepts have been towards producing the solar energy collector element more economically and towards greater efficiency of solar energy collection and storage. A novel design of a solar water heater in which the collector and storage tank are constructed as one unit is described. Tests indicated that the daytime collector performance was quite satisfactory and the night time losses were acceptable.*

**Keywords:** *Water heater, thermosyphon effect, solar energy, energy collection and storage*