

48. DESIGN AND FABRICATION OF SOLAR FLAT PLATE COLLECTOR FOR WATER DESALINATION

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In many parts of our country, the availability of adequate drinking water is a significant problem. This does not imply that the water is not abundant in our country, but rather water available is usually not potable. Solar desalination is one of the promising fields in the application of solar thermal energy which tries to satisfy this demand in many places of our country of water scarcity. Solar desalination plant coupled with flat plate collector is used for small scale domestic purpose water desalination application. Saline water is heated by solar radiation directly inside the pre heater and solar flat plate collector. The generated steam along with heated water is passed into solar still which uses multistage flash distillation system. The heated water flashes into steam inside solar still due to low pressure created by vacuum pump. The steam is condensed and collected as pure water. Direct steam generation increases thermodynamic efficiency of solar desalination system. Solar desalination system is a viable option to meet the needs of rural and urban communities.