

Overview of the solar desalination systems

[Environment](#), [Ecology](#)



The basin of the solar still is filled with brackish water and the sun rays are passed through the glass cover to heat the water in the blackened inner surface of basin and because of temperature difference between water and glass surfaces water gets evaporated. As the water inside the solar still evaporates, it leaves all contaminates and microbes in the basin. The purified water vapour will condensate on the inner side of the glass runs through the lower side of the still and then gets collected in a closed container which is used as drinkable water.

Many solar desalination systems were developed in years by using the above principle of solar still in the world. So many works done on solar still, on this work solar still is divided in two parts: (i) passive solar still, (ii) active solar still.

In a passive solar still, the solar radiation is received directly by the basin water and is the only source of energy to raise the water temperature and consequently, the evaporation leading to a lower productivity. This is the main drawback of a passive solar still.

Later, in order to resolve the problem of lower productivity, many research work will go on or done on the conventional (passive) solar still and active solar still. This review extends to Comparative Study to optimize the height for conduction path of multilayer absorber type solar still.

Improvements of Cover plate of Solar Still

The cover plate supports at the top of the solar still to receive the radiations of the sun and directed to the basin to evaporate the water. So if

improvement is done in cover plate so due to incident of maximum radiation, productivity of solar still is increased.

Improvements in Basin of Solar Still

Basin of solar still is a case in which brackish water is stored on which solar radiations are incident and brackish water is converted in to potable water. It should have good absorptance but minimum Reflectance.

Classification of Active Solar Distillation

The solar distillation systems are mainly classified as passive solar still and active solar still. The numerous parameters are affecting the performance of the still such as water depth in the basin, material of the basin, wind velocity, solar radiation, ambient temperature and inclination angle. The productivity of any type of solar still will be determined by the temperature difference between the water in the basin and inner surface glass cover. In a passive solar still, the solar radiation is received directly by the basin water and is the only source of energy for raising the water temperature and consequently, the evaporation leading to a lower productivity. This is the main drawback of a passive solar still. Later, in order to overcome the above problem, many active solar stills have been developed. Here, an extra thermal energy is supplied to the basin through an external mode to increase the evaporation rate and in turn improve its productivity.