

Lecture Notes in Mechanical Engineering

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Solar Distiller Unit Loaded with Nanofluid—A Short Review

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Abstract

The contemporary issue of potable water shortage can be addressed by providing fresh water from a solar distiller unit, which solely works on solar energy. This method of solar water desalination is the most economical and user friendly. The daily yield of passive solar still varies from 1 to 3 kg/m² and the issue of low potable water production of passive solar still can be overcome by active solar still. The daily yield of active solar still varies from 4 to 15 kg/m². The production of potable water for active solar still can further be improved by using nanofluid. In recent years, the use of nanofluid in solar desalination unit has become popular due to enhanced thermophysical characteristic of nanofluid as compared to the base fluid such as water, oil, etc. The use of nanofluid in active solar still reduces the pumping power requirement due to reduced viscosity. The production of potable water for solar still has been found to increase if nanofluid is used due to improved thermal conductivity and absorptivity of nanofluid. In this work, nanofluid-loaded solar desalination units have been reviewed and the future scope has been presented.

Keywords

Nanofluid

Solar still

Potable water production



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