

Solar Aided Vacuum Desalination of Sea-Water

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Abstract : As part of planning to address shortfalls in fresh water supply for the world, Sea water can be a huge source of fresh water. But Desalinating sea water to get fresh water could require a lots of fossil fuels. To save the fossil fuel in terms of save the green world but meet the up growing need for fresh water, a very useful but energy efficient method needs to be introduced. Vacuum desalination of sea water using only the Renewable energy can be an effective solution to this issue. Taking advantage of sensitivity of water's boiling point to air pressure a vacuum desalination water treatment plant can be designed which would only use sea water as feed water and solar energy as fuel to produce fresh drinking water. The study indicates that reducing the air pressure to a certain value water can be boiled at very low temperature. Using solar energy to provide the condensation and the vacuum creation would be very useful and efficient. Compared to existing resources, desalination is considered to be expensive, but using only renewable energy the cost can be reduced significantly. Despite its very few drawbacks, it can be considered a possible solution to the world's fresh water shortages.

Keywords : desalination, scarcity of fresh water, water purification, water treatment

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