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Experimental Study on Modified Double Slope Solar Still and Modified Basin Type Double Slope Multiwick Solar Still

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Abstract : Water is essential for life and fresh water is a finite resource that is becoming scarce day by day even though it is recycled by hydrological cycle. The fresh water reserves are being polluted due to expanding irrigation, industries, urban population and its development. Contaminated water leads to several health problems. With the increasing demand of fresh water, solar distillation is an alternate solution which uses solar energy to evaporate water and then to condense it, thereby collecting distilled water within or outside the same system to use it as potable water. The structure that houses the process is known as a 'solar still'. In this paper, ‘Modified double slope solar still (MDSSS)’ & 'Modified double slope basin type multiwick solar still (MDSBMSS)' have been designed to convert saline, brackish water into drinking water. In this work two different modified solar stills are fabricated to study the performance of these solar stills. For modification of solar stills, Fibre Reinforced Plastic (FRP) and Acrylic sheets are used. The experiments in MDSBMSS and MDSSS was carried on 10 September 2015 & 5 November 2015 respectively. Performances of the stills were investigated. The amount of distillate has been found 3624 Ml/day in MDSBMSS on 10 September 2015 and 2400 Ml/day in MDSSS on 5 November 2015.

Keywords : contaminated water, conventional solar still, modified solar still, wick
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