

A FULLY SOLAR-POWERED STANDALONE MEMBRANE DISTILLATION SYSTEM FOR FRESH WATER AND POWER SUPPLY

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A novel fully solar powered stand-alone membrane-based desalination system is developed to provide flexible fresh water and DC/AC power for remote households without reliable infrastructure, such as offshore islands and remote inland communities. In the system, a solar PV/T array is installed to provide both thermal energy and DC power respectively together with a smart power station and phase change material (PCM) thermal storage tank; in addition, a membrane-based desalination technology is adopted with a novel membrane module.

NOVEL FEATURES

- * Presents a standalone membrane-based desalination system that is environmentally-friendly
- * Produces high purity freshwater with the use of the hydrophobic membrane

