

Solar-Powered Desalination and Water Purification System

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Abstract: *Approximately 71% of the Earth's surface is water, with about 2.5 % being freshwater. Most of the surface inhabitants of Earth is shielded by way of seawater that also includes dissolved salt. The salt concentration in seawater renders it harmful to human beings due to the fact that the human body cannot eliminate the salt obtained from it. The need for pure water is on the rise as a result of the increasing pressure on the global population. This simple sun hybrid device allows turbidity and chemical and pathogenic contaminants to be removed from water sources in the lowest-cost and most rapid way possible. This study presents an actionable model for water treatment and proposes intelligent environments that can manage water treatment plants. The system in question gathers records and analysing to provide the most efficient technique for water desalination operations. The concluding section of this paper provides views regarding the distinct antifouling techniques that have recently gained more attention, with specific emphasis on floor change of membranes. The sun-powered totally RO water filtration system shall comprise solar panels, a pre-treatment procedure, a reverse osmosis membrane, a post-treatment procedure, and a water storage tank for the purified water. The pre-remedy process will remove any large particles, sediment, and impurities, whereas the reverse osmosis membrane will remove dissolved minerals and contaminants.*

Keywords: Desalination, Reverse Osmosis, Purification, Solar PV, Sedimentation

