Low Cost Desalination by Solar Thermal Evaporation and Radiative Cooling

UA ID Technology #ua18-074

Title: Low Cost Desalination by Solar Thermal Evaporation and Radiative Cooling

Invention: This technology is a desalination system that allows for the collection of clean water and the production of valuable products like salt materials.

Background: As populations increase we are seeing sources of high quality, fresh drinking water decrease. Desalination processes provide freshwater when other sources and treatment procedures are uneconomical or not environmentally responsible. Desalinated seawater is produced primarily for municipal/potable use and for agricultural irrigation but is also used extensively in many other applications where high quality water is required.

Applications:
- Pharmaceuticals
- Semi-conductors
- Hard disk drives

Advantages:
- Low-cost
- Provides effective convention airflow driven by chimney effect
- Condensation forms from moisture in humid air due to radiative cooling at the chimney wall
- Salts produced following desalination can be collected to make valuable products

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