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Continuous-Flow Solar Ultraviolet Disinfection System for Drinking Water

An inexpensive, energy-independent solar UV radiation system continuously disinfects water for reliable, predictable, and facile decontamination.

A major health concern in developing countries around the world is water quality. Water can be contaminated with disease-causing pathogens or with harmful chemicals. Technologies used in developed countries are often not practical for developing nations due to cost and energy requirements. Solar UV radiation inactivates pathogens in a water supply by causing damage to nucleic acids and proteins so that the cell cannot replicate and cause an infection. The empirical design of current technologies still leaves uncertainty about the quality of the disinfected water. Also, existing disinfection systems that use a constant-flow design require electrical energy to generate artificial UV radiation, which is not practical for developing nations.

Researchers at Purdue University have developed a solar UV radiation-based system to disinfect water continuously. Water is pumped through a UV-transparent tube that is positioned in a solar concentrator. Controlled flow of water through the irradiated area allows for reliable and predictable performance.

To view a video related to this technology, click on this link: http://www.youtube.com/watch?v=mldIzgpRvdo

Advantages:

-More reliable and predictable decontamination

-No power required

-Inexpensive and facile

Potential Applications:

-Clean water

Technology ID

65920

Category

GreenTech/Water & Resource Management

GreenTech/Environmental Remediation & Pollution Control

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Intellectual Property:

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