

An Apparatus For Purifying Water

Application Number: 202111052858

Inventors: Dr. Rahul Vaish, Pushpendra Kumar

ABSTRACT

An apparatus (100) for purifying water is disclosed. The apparatus comprises a container having a volume therein to store water and a plurality of copper plates. A piezoelectric pulse generator (110) is connected to the plurality of copper plates such that a first voltage terminal (112) is connected to a first set of copper plates (106) and a second voltage terminal (114) is connected to a second set of copper plates (108). A push button (116) is adapted to operate the piezoelectric pulse generator (110). Upon pressing the push button (116), a voltage of at least 1 kV is generated between the first terminal and the second terminal. The generate voltage creates an electric field between the first set of copper plates (106) and the second set of copper plates (108) to disinfect the water in the container.

KEY APPLICATION AREAS

1. Drinking water purification and disinfection.
2. Portable and point-of-use water treatment.
3. Emergency and disaster relief water purification.
4. Rural and off-grid water supply.
5. Chemical-free water treatment.
6. Public health and safe drinking water systems..

POTENTIAL USE

1. Portable hand-powered water purifier for households, travelers, and remote communities.
2. Chemical-free microbial disinfection of drinking water using piezoelectric pulsed electric fields (irreversible electroporation).
3. Emergency and disaster-response water purification where electricity and chemicals are unavailable.
4. Off-grid rural water treatment with a low-cost, energy-efficient device.

5. Disinfection of bacteria, viruses, and other microorganisms without producing carcinogenic by-products.
6. Water purification for fixed installations such as water tanks and community storage systems, in addition to portable use.