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Wearable Ozone Generating System for Treatment of Infected Dermal Wounds

Portable ozone generator with disposable dressings that kills bacteria and signals tissue repair.

Dermal wounds are common in an aging population, diabetic patients, and persons with obesity to name a few, and many bacterial infections are gaining resistance to currently available antibiotic treatments. Recent scientific discovery indicates that ozone can not only topically treat wounds but also signal tissue regeneration and repair. Researchers at Purdue University have developed a new wearable ozone generating system for treatment of infected dermal wounds. They have created fine-tuned materials to fabricate disposable semipermeable wound dressings and have connected these through a flexible tube to a portable generator that produces about 90-130 ppm of ozone. Technology has been validated In in vitro by testing for cytotoxicity on human fibroblast cells; no signs of adverse reaction were observed and the device was effective in treating both Pseudomonas aeruginosa and Staphylococcus, two of the most common types of bacteria found in wound sites.

Advantages:

-Accurate

-Reliable

-Fast Acting

-Antibacterial

Potential Applications:

-Wound Treatment

-Infection Treatment

Technology Validation:

Technology ID

2020-RAHI-69057

Category

Digital Health & Medtech/Remote Patient Monitoring & Telehealth

Digital Health & Medtech/Wearable Health Tech & Biosensors

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In vitro cytoxicity testing with two common types of bacteria.

Recent Publication:

"Wearable and Flexible Ozone Generating System for Treatment of Infected Dermal Wounds"

Frontiers in Bioengineering and Biotechnology

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NATL-Patent, 2023-01-20, United States

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