Cold Atmospheric Plasma Device Driven by DC Voltage

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Technology description

Background

Non-equilibrium atmospheric plasma jets (NEAPJ) are widely used in the fields of sterilization and disinfection without chemical damage to tissue, minimally-invasive surgery, cancer treatment, drug delivery, wound healing, cellular modifications, bioengineering, dermatology, cosmetics, etc. Conventional NEAPJ uses AC voltage or pulsed DC power supplies, which cause electromagnetic interference (EMI) and high ground leakage currents. There is a need for an NEAPJ without such problems.

Technology Summary

Researchers at Purdue University have developed a new device for generating cold plasma jets that uses pure DC voltage as opposed to AC voltage or pulsed DC power devices. Using a pure DC voltage reduces the problems caused by EMI, such as problems with medical monitors and medical devices. When EMI causes such devices to malfunction, it puts the patient at risk.

Application area

Sterilization and disinfection of tissue wounds
Medical applications

Packaging and preservation of food

Advantages

Reduces electromagnetic interference and high ground leakage currents
Does not damage tissue

Institution

Purdue University

Inventors

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