J-PLASMA™

Understanding the New J-Plasma Technology

Bovie® MEDICAL CORPORATION

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Introduction

Overview

Currently J-Plasma is cleared by the FDA for cutting and soft tissue coagulation. The clearance allows the J-Plasma device for use in a multitude of specialties and a wide range of procedures. This potential breakthrough and innovative technology can be utilized in laparoscopic surgery and in open procedures combining multiple functions permitting the surgeon to cut, coagulate and dissect with a single device.

Objectives

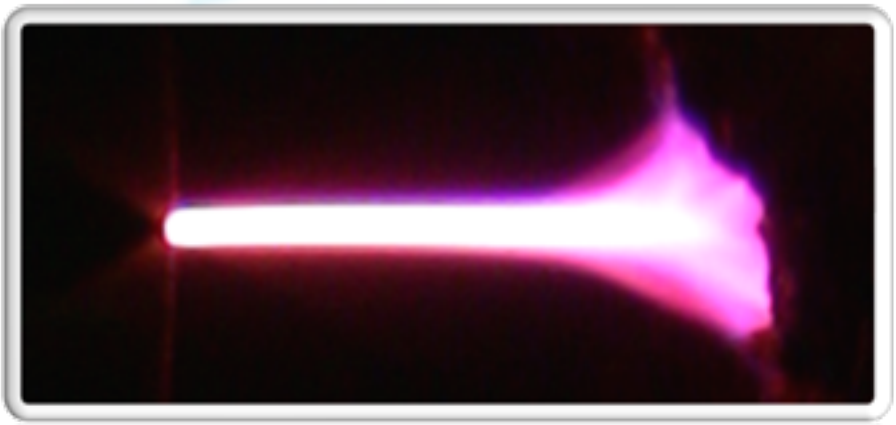
- Introduce the healthcare field to what could be the promising future of surgery
- Develop a better understanding of what J-Plasma is and how it works
- Inform readers of pending patents

What is J-Plasma?

J-Plasma represents a potential breakthrough in plasma surgery.

The J-Plasma technology uses minimal electricity flowing to the surgical site, in conjunction with Helium gas to produce a plasma.

The effect is an inert gas plasma, which minimizes damage to surrounding tissue. Additionally, without a net flow of electricity around the body, a return electrode is not needed.

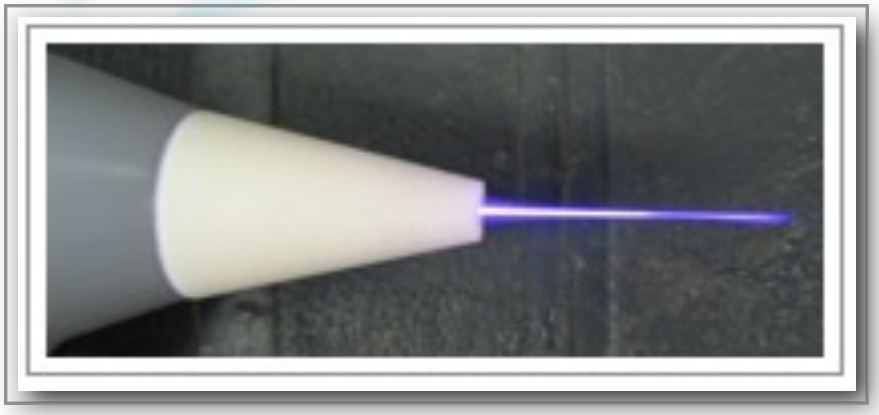


How it Works

The plasma is formed by simply passing a gas, such as helium, over a uniquely designed structural point that is electrically energized, producing our luminous plasma stream. In the current configuration, the uniquely designed structural point is actually a custom designed retractable surgical blade.

The blade can be extended and utilized like a standard scalpel for incisions, biopsies, and delicate dissection.

The extended blade can also be energized while helium is flowing to provide a plasma enhanced electrosurgical effect during cutting. This speeds the cutting action and produces virtually no eschar, unlike standard electrosurgical devices.



When the blade is retracted, the device can be used for blunt dissection, or coagulation when the plasma is activated.

The Future of Plasma Surgery

What does J-Plasma mean for patients and surgeons?

The J-Plasma device should result in reduced operating time and a more effective surgical procedures, due to it's multiple functions and minimal tissue damage.

Early lab tests point toward a cleaner, smoother incision with less smoke, odor, eschar and collateral tissue damage.

These outcome results might have possible earlier patient recoveries with reduced scarring normally associated with standard electrosurgery procedures.

Top Features

Ease of Use

Single push button hand activation (foot pedal optional) for both cutting and coagulation.

Increased Modality

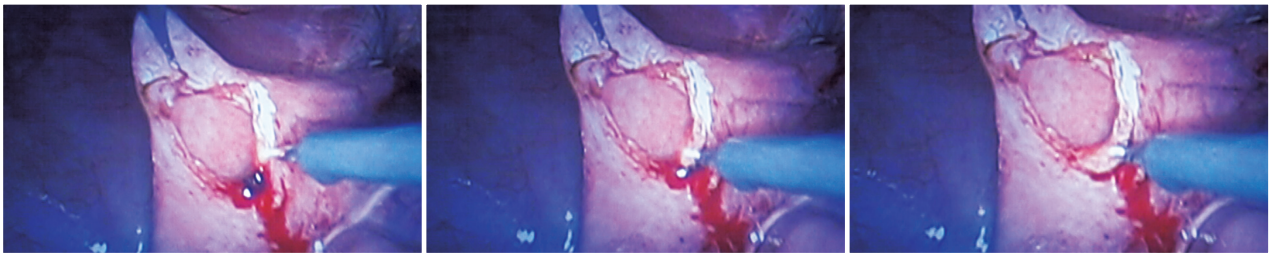
J-Plasma combined with its retractable blade feature allows the surgeon to excise tissue “paint” or spot coagulate with a single device.

Controlled Coagulation

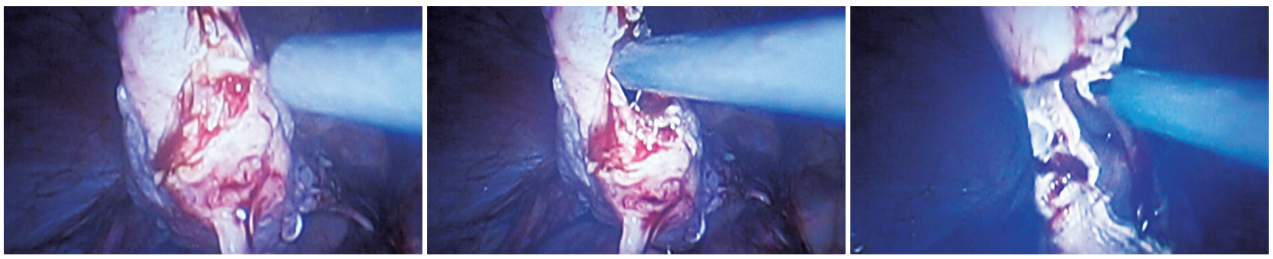
The J-Plasma stream is limited to a maximum of 15mm in length, thus eliminating “pass through” as demonstrated by some lasers.

Retractable Cutting Feature

J-PLASMA LAPAROSCOPIC COAGULATION



J-PLASMA LAPAROSCOPIC CUT



Bovie Medical Corporation's new open and laparoscopic J-Plasma hand piece with retractable cutting feature is used for soft tissue coagulation and cutting during surgery.

The distinctive blade design of the hand piece provides the option to retract or extend the surgical blade at controlled increments, providing multiple modes of operation in a single instrument.

In the extended configuration, the surgical blade can be used without energy or plasma, similar to a scalpel for incisions and other cutting procedures.

When retracted, the device can be used to form the J-Plasma stream for coagulation or blunt dissection. A combination of the J-Plasma stream with the blade extended can provide an enhanced cutting capability with minimal impact on surrounding tissue.

Patents

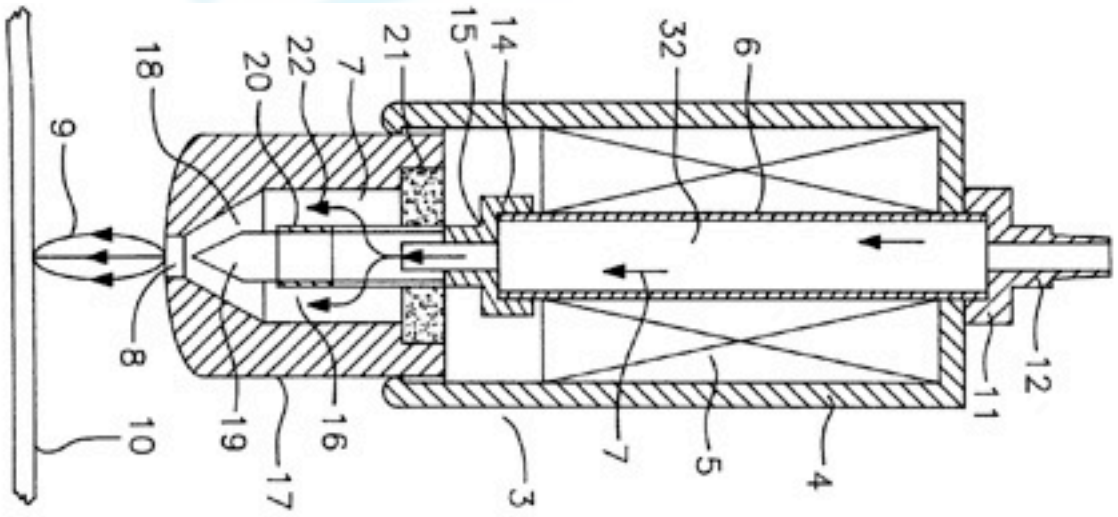
Bovie has four patents granted:

- **#5,909,086:** Plasma Generator for Unipolar Plasma" by Kim, et al., awarded June 1, 1999

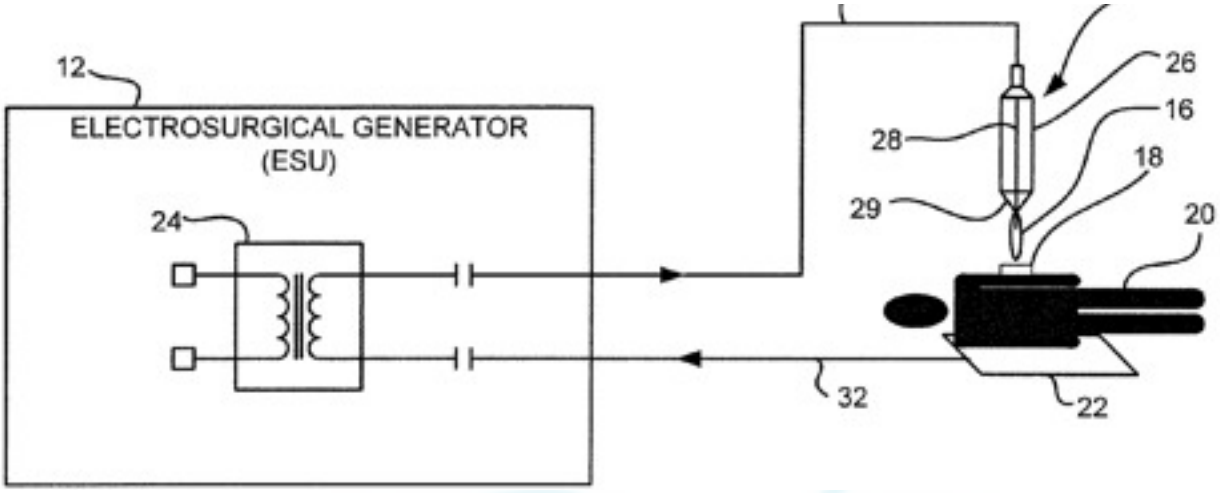
- **#6,099,523:** "Cold Plasma Coagulator" by Kim, et al., awarded August 8, 2000;

- **#7,316,682:** Electrosurgical Device to Generate a Plasma Stream" by Konesky, awarded January 8, 2008

- **#8,057,468:** "Method to generate a plasma stream for performing electrosurgery*"* by Konesky, awarded November 15, 2011



Patents (continued)



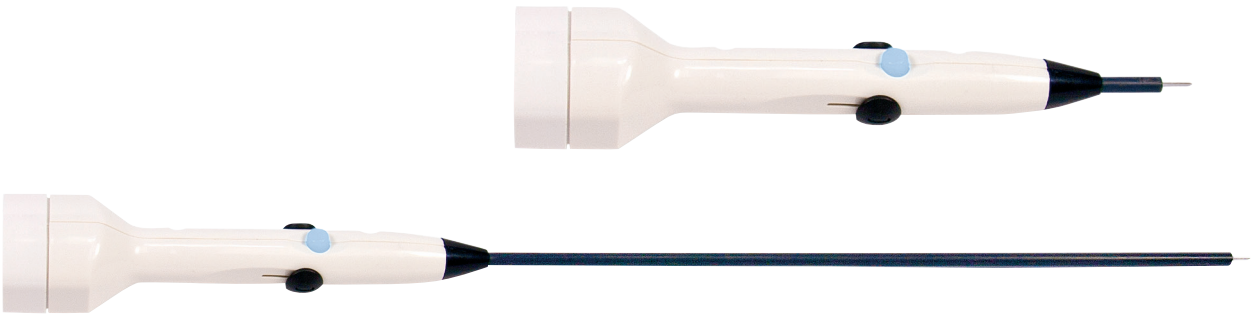
... And five more pending:

- **#61/411,174:** "Electrosurgical Apparatus with Retractable Blade" by Rencher, filed November 8, 2010;
- **#61/244,911:** "Electrosurgical Apparatus to Generate a Pulsed Plasma Stream and Method Thereof" by Konesky, filed September 23, 2010;
- **#61/298,982:** "Electrosurgical Apparatus to Generate a Dual Plasma Stream and Method Thereof" by Konesky, filed January 28, 2011;
- **#12/006,680:** "Electrosurgical device to generate a plasma stream" by Konesky, filed November 12, 2011;
- **#"61/645,646:** "Cold Plasma Jet Hand Sanitizer" by Konesky, filed May 11, 2012.

Conclusion

In January of 2012 Bovie received FDA clearance to market J-Plasma for cutting and coagulation of soft tissue in open and laparoscopic surgical procedures. J-Plasma has impressed along the way, and we look forward to seeing how this new device impacts surgery!

These are very exciting times at Bovie Medical Corporation.



About Us

Bovie Medical is setting the standard for surgi-center and hospital-based electrosurgical generators and accessories with a range of "state of the art" models: the Aaron 940™, the Aaron 950™, the Aaron 1250™, the Aaron 2250™, and the Aaron 3250™ along with the IDS-200™, IDS-300™, IDS-400, ICON Gi™, and ICON-GP. This full line is the most complete offering of any USA manufactured electrosurgical generator product. The feature-packed generators are designed from the ground up to be extremely reliable, and are UL and Canadian Standards compliant.

Over the past decade, we have expanded our manufacturing capabilities to include a full line of disposable electrosurgical electrodes in blade, ball, needle, loop and laparoscopic form plus PTFE coated electrodes and tungsten needles. The reusable ES pencils, with a full compliment of reusable electrodes and bipolar forceps, enhance our ever-expanding line of products.

In addition to electrosurgery, Bovie Medical is the number-one producer of battery-operated cauteries in the world. Its product lines, distribution channels, and renowned industry reputation continue to grow.

The company now also manufactures a line of replaceable battery and tip cauteries, known as Change-A-Tip™. We manufacture a variety of specialty products, such as nerve locators, lighted stylets, and corneal rust ring removers, the bulk of which follow the battery operated, tubular manufacturing process.

Bovie Medical continues to improve and expand its product offerings and services, as well as continuing its excellent record of support to existing customers.

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Sources:

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Blog Resources:

1. http://ow.ly/a5lWh
2. http://ow.ly/a5m0z
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