airplasma® technology

the future of surgery

Torino - Italy
**plasma**
the fourth state of matter

In physics the plasma is an **ionized gas**, consisting of a set of electrons and ions globally neutral. The term “ionized” indicates that a significantly large fraction of electrons has been ripped from their atoms.

As such, the plasma is considered **the fourth state of matter**, which therefore differs from the solid, liquid, and gaseous states.

In nature the plasma is present in the lightning and in the aurora borealis.

Industrial applications today are various, from processing of polymers to the production of medical implants, from creation of packaging to metal processing.

**airplasma®**
the future technology

Airplasma® is a newly developed technology that allows to **create plasma energy directly from the air**, so without using other inert gases (**Argon** or **Helium**).

Through an electronic method it is possible to obtain the process of **air ionization**. Initially neutral, the air is ionized by transmitting inside it an electromagnetic high-frequency and high-voltage boost through an electronic means.

In this way the air insulating power is eliminated, which is thus transformed into an **ideal conductor of energy**.

The generated plasma is visible in the form of a glow (**glow**).

The energy transition from the devices with Airplasma® technology to the tissue occurs in a natural and spontaneous way through the air and without temperature peaks.

From this phenomenon derive innumerable benefits that allow to radically innovate the traditional techniques used in surgery.

Innovation is also certified by the **patent** issued by the **World Intellectual Property Organization** and globally extended.
the application of airplasma® today

Onemytis® veterinary device

®

airplasma® electrodes

the right working tool

The airplasma® technology is applied in veterinary surgery with Onemytis® device.

Devices with airplasma® technology can answer to all the most

fully built.

and many more.

general surgery
dermatology
neurology
stomatology
oral surgery
oncology
orthopedics
reproduction
ophthalmology

FIELDS OF APPLICATIONS

airplasma® innovation

the beginning of a new Era

SCALPEL
cold cutting
absence of coagulation
high precision and handling
high cellular crushing

ELECTROCAUTERY
only coagulation action through tissues carbonization
use on minor haemorrhages
high operating temperature (> 100°C)*
tissue remains and scales on the electrode

ELECTROBISTURI AND RADIOBISTURI
cutting or coagulation actions via diathermy
high radio-electric invasiveness in the patient
high operating temperature (≥100°C)*
risk of burns in the adjacent area of the return plate

LASER
ablation and coagulation actions
limited cutting precision with extended necrotic area
high operating temperatures (≥85°C)*
need for specific individual protections

ULTRASOUND SCALPEL
cut or coagulation through high frequency oscillating blade
extended necrotic area
high operating temperatures (≥150°C)*
mainly used in the laparoscopic technique

PLASMA COAGULATORS
diathermic and ablative action on target and adjacent tissues
high radio-electric invasiveness
average operating temperature (60°C)*
need for supplies of inert gases (Argon or Helium)

AIRPLASMA®
combined action of ablation, cutting and coagulation
low invasiveness due to the absence of return plates
almost completely absent necrotic area
operating temperature of -50°C
no need of protections for operators and patients
no use of inert gases

* the values of the above-written technologies can vary according to brand and model
**airplasma® advantages**

**unparalleled performances**

- **DISSIPATION TEMPERATURE OF ~ 50°C**
  - allows the immediate vaporization of tissue while assuring at the same time the haemostasis of capillary vessels

- **REDUCED THERMAL DAMAGE**
  - with reduction of heat generation there is respect of the target tissue and the surrounding ones

- **LOW INVASIVENESS**
  - there is no input of electrical energy in the body of the patient guaranteeing the total absence of diathermy

- **REDUCTION OF PAIN PERCEIVED**
  - the delicacy of the intervention and the low temperature reduce the pain perceived by the patient

- **REDUCED NEED FOR SEDATION**
  - the respect for the tissues (target and not) allows to limit the sedation of the patient

- **REDUCED HEALING TIME**
  - the reduced cell necrosis facilitates the healing and doesn’t lead to the formation of keloids

- **ABLATION, CUTTING AND COAGULATION**
  - with the airplasma® technology ablation, cutting and coagulation are simultaneously done

- **HIGH PRECISION**
  - the precision in operating is comparable to the one of a scalpel

- **OZONE CREATION**
  - the creation of ozone during the ionization process allows the sterilization of the operating tissue

- **EASY AND SAFE TO USE**
  - the absence of return plates, of inert gases and of individual protection systems increase the speed of operation and the safety of both operator and patient
In physics, the plasma is an ionized gas, consisting of a set of electrons and ions globally neutral. The term "ionized" indicates that these particles have gained or lost electrons from their atoms. As such, the plasma is considered the fourth state of matter, which therefore differs from the solid, liquid, and gaseous state. In nature, the plasma is present in the lightning and in the aurora borealis. Industrial applications today are various, from processing of polymers to the production of medical implants, from creation of packaging to metal processing.

Airplasma® is a newly developed technology that allows to create plasma energy directly from the air, so without using other inert gases (Argon or Helium). Through an electronic method, it is possible to obtain the process of air ionization. Initially neutral, the air is ionized by transmitting inside it an electromagnetic high-frequency and high-voltage boost through an electronic means. In this way, the air insulating power is eliminated, which is thus transformed into an ideal conductor of energy. The generated plasma is visible in the form of a glow (glow). The energy transition from the devices with Airplasma® technology to the tissue occurs in a natural and spontaneous way through the air and without temperature peaks. RPY RADICALLY INNOVATE THE TRADITIONAL TECHNIQUES USED IN SURGERY. PATENT ISSUED BY THE WORLD INTELLECTUAL PROPERTY ORGANIZATION AND GLOBALLY EXTENDED.

The first surgical applications of Oneyonis®, are in dermatology, plastic and aesthetic surgery and aesthetic medicine, and also in general surgery. The most frequent cases of use are the removal of malignant and benign neoplasms, seborrheic formations, moles and any other type of neoformations. Excellent results are obtained with blepharoplasties, tensioning of tissues, elimination of skin spots.

The scientific experimentation first confirmations of Oneyonis®

Oneyonis® has been tested at the “Molinette” Hospital of Turin. The study lasted 8 months. 7 doctors of the surgical dermatology section have been involved and 42 treatments were performed on 30 patients. The study demonstrated the efficacy of Oneyonis® on benign skin lesions, its ease of use and relatively short learning time for its efficient use. Medical investigators have found no adverse events, and have noticed how the little pain perceived by patients during the treatment, and the absence of special protections to adopt, allow the outpatient use of Oneyonis in relative safety.

FIELDS OF APPLICATIONS
- dermatology
- plastic and aesthetic surgery
- aesthetic medicine
- general surgery
- stomatology
- maxillofacial
- otolaryngology

OPERATIVE TECHNIQUES
- digestive system
- thoracic surgery
- gynecology
- urology
- orthopedics
- ophthalmology
- neurosurgery

first applications
beauty treatments

traditional
- endoscopy
- laparoscopy
the application of airplasma® today
Onemytis® veterinary device

The airplasma® technology is applied in veterinary surgery with Onemytis® device.

It is a comprehensive tool that allows to perform a wide range of surgical operations on many different types of animals.

FIELDS OF APPLICATIONS

- general surgery
- dermatology
- neurology
- stomatology
- oral surgery
- oncology
- orthopedics
- reproduction
- ophthalmology

airplasma® electrodes
the right working tool

Devices with airplasma® technology can answer to all the most specific needs thanks to the wide choice of electrodes specifically built.

and many more.