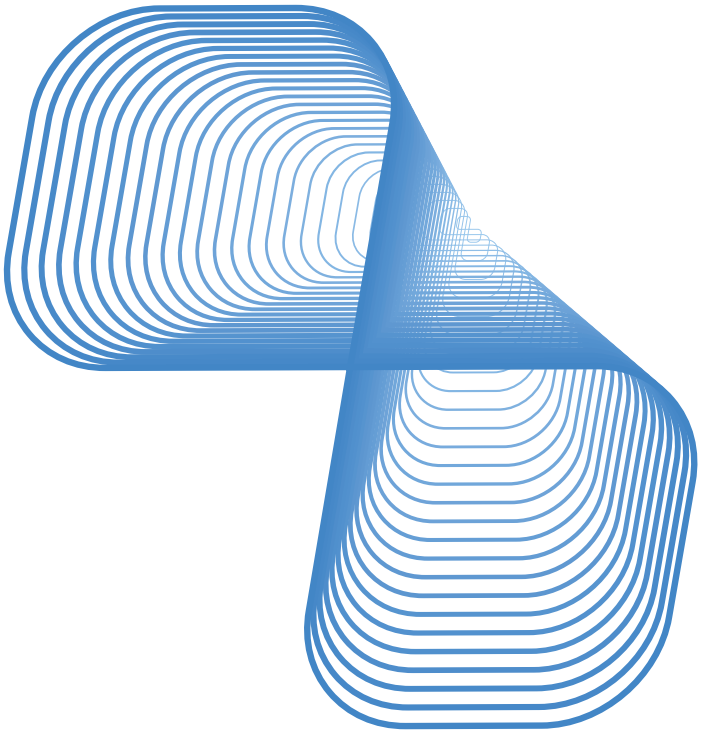
airplasma® technology

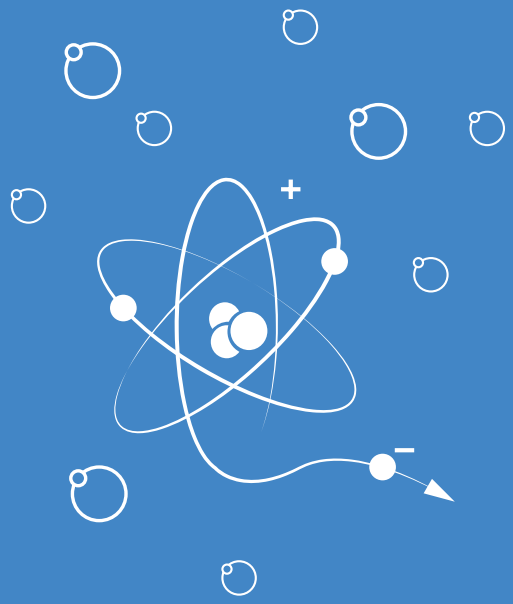


the future of surgery

OTECH® INDUSTRY

Torino - Italy

plasma
the fourth state of matter



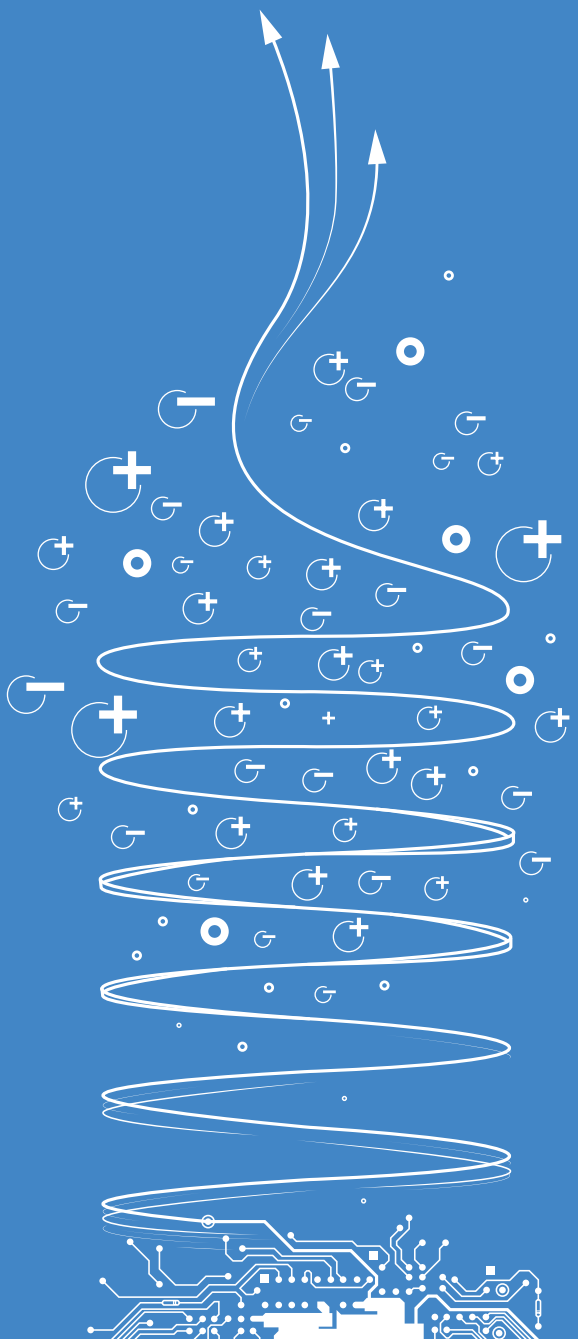
In physics the plasma is an **ionized gas**, consisting of a set of electrons and ions globally neutral. The term "ionized" indicates that a significantly large fraction of electrons has been ripped from their atoms.

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.

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

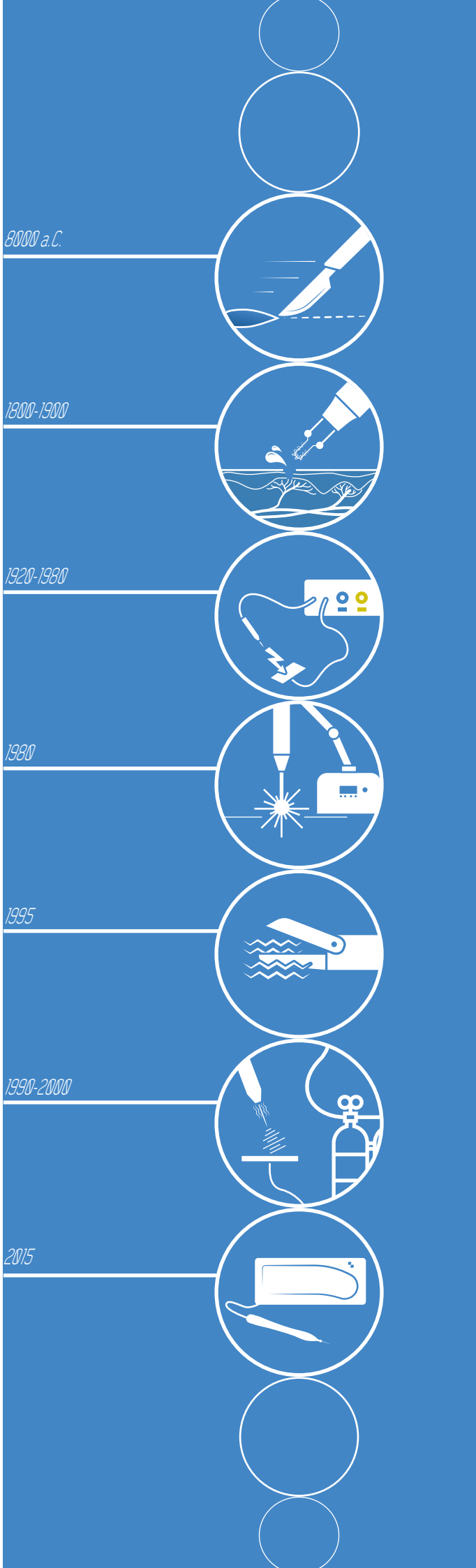
PLASMA COAGULATORS

- diathermic and ablative action on target and adiacent 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

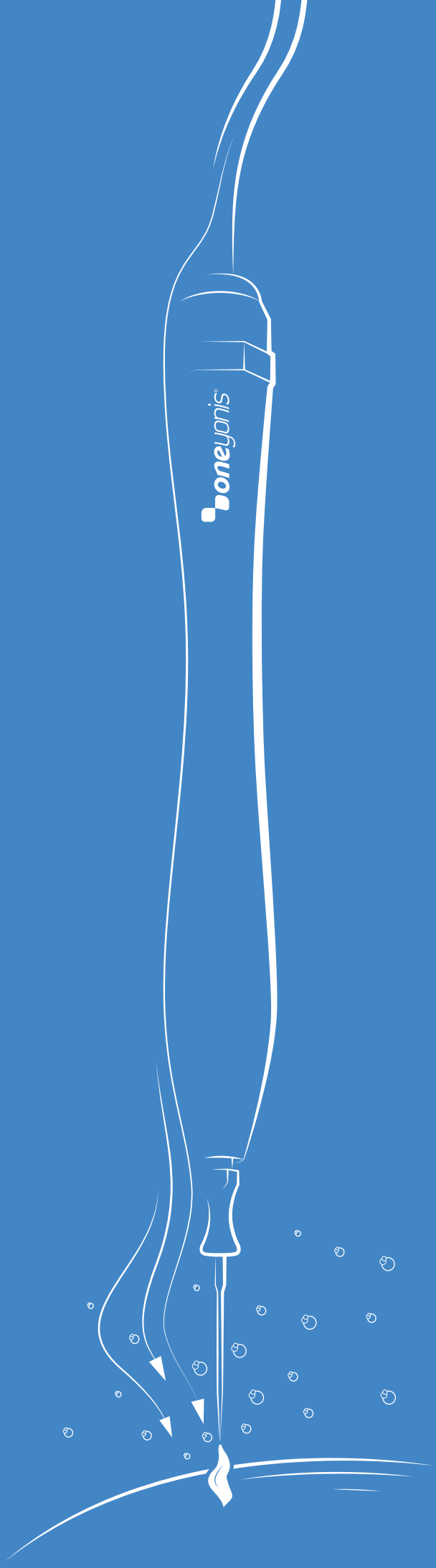
REDUCED HEALING TIME
the reduced cell necrosis facilitates the healing and doesn't lead to the formation of keloids

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



airplasma® application
Oneyonis® device

FIELDS OF APPLICATIONS

dermatology

plastic and aesthetic surgery

aesthetic medicine

general surgery

stomatology

maxillofacial

otolaryngology

digestive system

thoracic surgery

gynecology

urology

orthopedics

ophthalmology

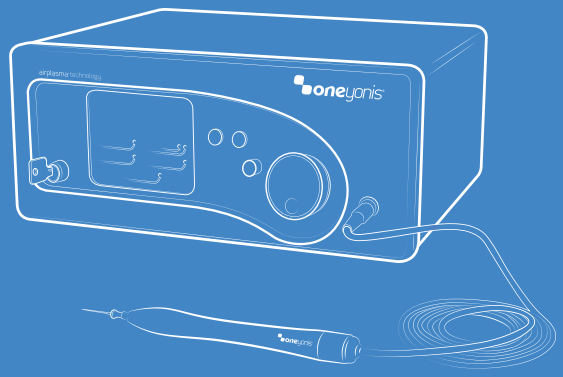
neurosurgery

OPERATIVE TECHNIQUES

traditional

endoscopy

laparoscopy



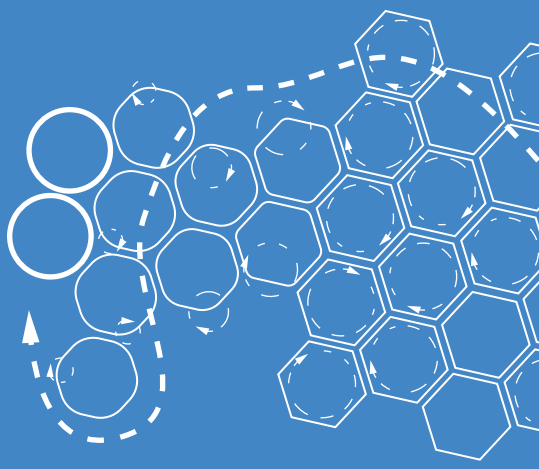
Oneyonis®
il dispositivo airplasma®

first applications
beauty treatments

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.



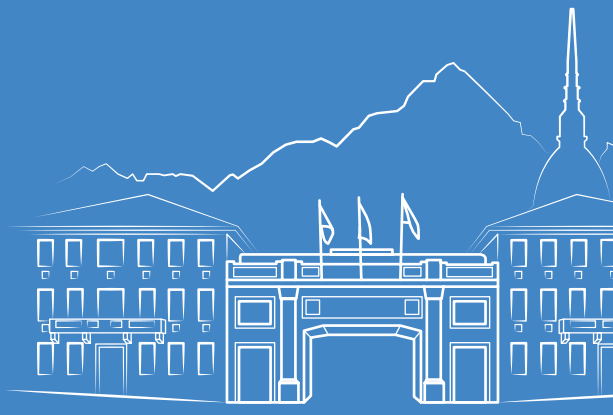
the scientific experimentation
first confirmations of Oneyonis®

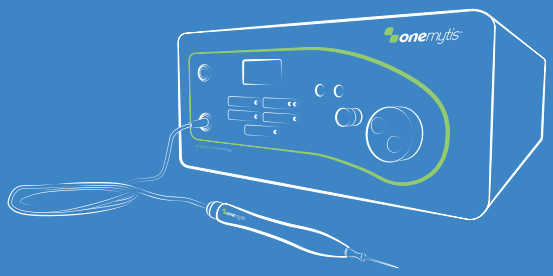
Oneyonis® has been tested at the **"Molinette" Hospital** of Turin.

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.





Onemytis®
the veterinary airplasma® device

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

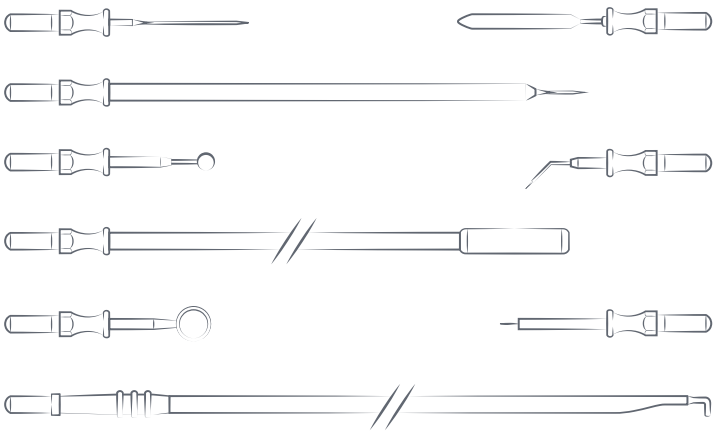
orthopedics

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.

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