

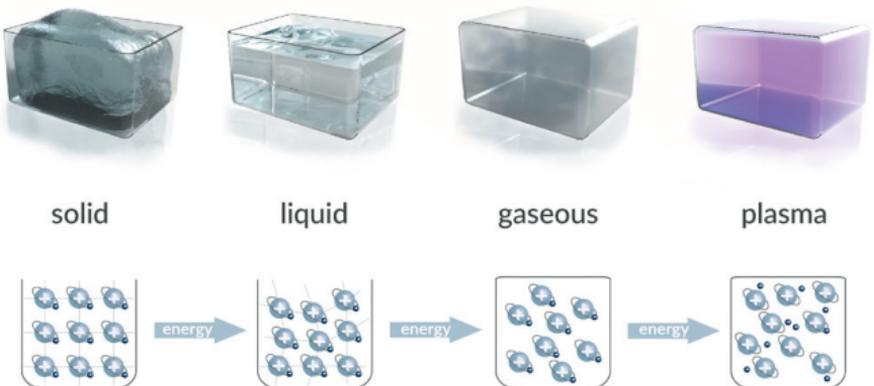


# neoplas tools

MEDICAL PLASMA

## What is plasma?

Plasma is the fourth aggregate state of matter, following solid, liquid and gaseous. Water is a good example for demonstration: Ice, for instance, is in a solid state of matter. If we add energy in the form of heat, the ice will melt into water. If we add further energy to this meltwater, the state of matter will change from liquid to gaseous – steam is generated. If even more energy is added to this gas, an ionized gas is generated. This means that plasma is a gas in an excited state.



plasma; 99 % of visible matter consist of plasma – it's about time we use it

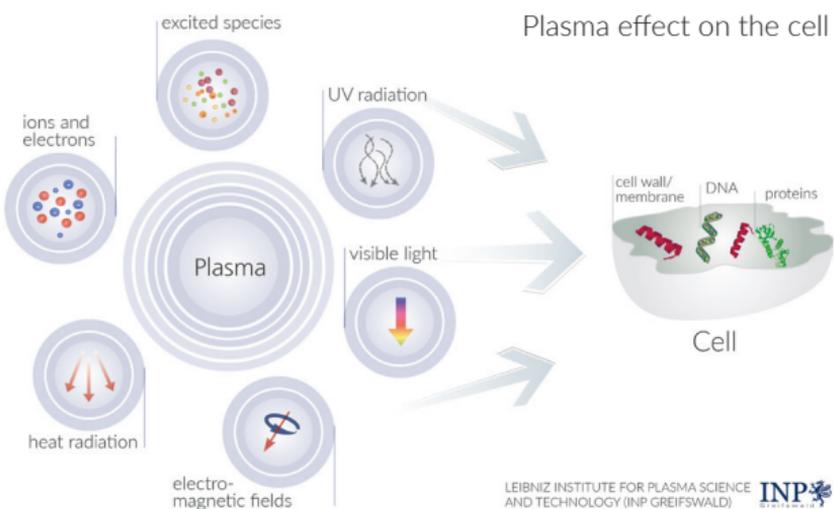
More than 99 % of the matter in space that is visible to men is in the plasma state. Northern lights, solar winds and flashes of lightning are natural plasmas. Energy-saving lamps and plasma TV represent technical applications of plasma. This means that the shape, size and temperature of a physical plasma are highly variable and can be adjusted as required.

## Physical plasma in medicine

Plasma devices with hot plasmas at around 70 °C (158 degrees Fahrenheit) are used in gastroenterology and surgery, e.g. to arrest internal hemorrhages endoscopically or as a tool in liver resections or polypectomies.

Plasmas for direct therapeutic applications on the human body are considerably cooler with temperatures around the body temperature mark. It has been demonstrated in numerous scientific studies that cold physical plasma has a strong antibacterial and anti-inflammatory effect, and that it supports wound healing. The device combines several active components such as heat, UV radiation and electric fields.

Cold plasma is especially suitable for the support of wound management in badly healing, chronic wounds, as it kills even multi-resistant microorganism and supports wound healing by stimulating tissue regeneration. Today the medical application of cold physical plasma has developed into an important new treatment method.



Research is continuously working on the further development of plasma sources and their application in other areas of indication.