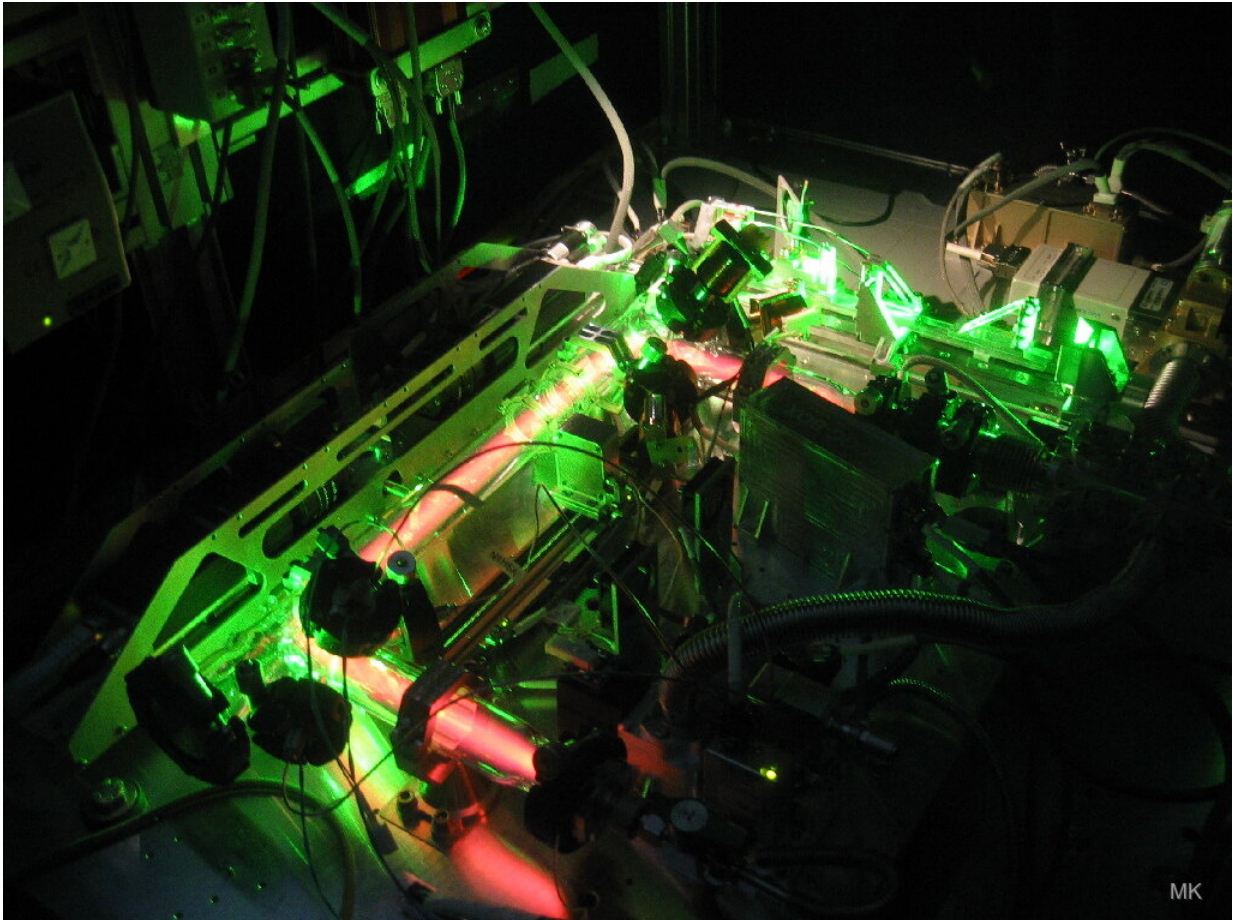


Image: Cold plasma tested on ISS

April 10 2019



Credit: Max Planck Institute for Extraterrestrial Physics

Low-temperature plasma – electrically charged gas – that was originally tested aboard the International Space Station is now being harnessed to kill drug-resistant bacteria and viruses that can cause infections in

hospital.

Professor Gregor Morfill of Germany's Max Planck Institute for Extraterrestrial Physics made use of the ISS to investigate complex three-dimensional plasmas that Earth gravity would have flattened. His very first plasma chamber was installed aboard the Station back in 2001, by cosmonaut Sergei Krikalev. The latest fourth-generation follow-on is still running on the ISS to this day.

Plasmas are usually hot gases but Prof. Morfill's team developed a method of generating room temperature 'cold plasma'. Exposure to this forms small holes in the membranes of bacterial cells and destroy their DNA, while human cells are not so easily damaged.

So the idea was born to make use of cold plasma against bacteria in infected wounds without harming the patient. Initial treatment was for infected chronic wounds such as leg ulcers. Initial [clinical trials](#) showed significant reduction in bacterial burden of infected wounds, supporting healing and [pain relief](#).

As a next step, new company terraplasma medical was set up to develop a smaller portable, battery-driven cold plasma [medical device](#). The company has been supported through ESA's Business Incubation Centre Bavaria.

Starting this May, this 'plasma care' device will be evaluated in a medical trial across multiple German healthcare institutes.

Provided by European Space Agency

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