



GREEN PLASMA SAFE: a solution for the management of contaminated waste during the Covid-19 emergency

IRIS, based in the industrial district of Turin, is a solid SME specialized in the development of **cutting-edge technological processes**. Founded in 2012, it immediately invested in two directions:

- in the development of industrial **applications of laser and plasma technologies**, mainly intended for the industrial sector
- in **small-scale circular economy solutions** for the recovery of resources, water, energy and raw materials.

The device **GREEN PLASMA SAFE** is part of this second area of investigation. It born from a project path at European level which has seen IRIS in the front line alongside the most important research institutes. The treatment, **based on the thermochemical conversion, was born with the aim of treating waste in isolated places** (shelters, small mountain communities, boats, off-grid contexts, etc.). Additionally, it's under studying the application on plastic **recovery boats from the oceans**, treating the marine litter on board without having to bring it back to shore. This will improve waste management in terms of time and costs (claim-h2020project.eu, project funded by the European Commission).

The solution proposed for the treatment of contaminated waste is therefore the adaptation of this **system conceived, designed and patented by Iris which is based on the thermal plasma technology**. It allows the treatment on a small-scale of non-recoverable and special waste. Thanks to the high temperatures reached (up to 5000 ° C) and the absence of oxygen, **the organic waste fraction turns into gas which, after being filtered and purified from any harmful molecules, can be converted into heat and electricity (that can be used to power an electric vehicle, for example)**.

In this moment of **emergency linked to Covid-19, the treatment of contaminated waste is a topic of primary importance**, above all because temporary hospitals have arisen, while in the existing ones an excessive load

remains. In addition, hundreds of thousands of people are in home hospitalization, in quarantine or self-isolation, forced to use, and then dispose of gloves, masks, gauze and infected material. Also, in this case, the incorrect management of any material, that came into contact with the virus, could lead to a further source of contagion and pollution. This is what it's meant and we want to be avoid in any way.

The solution proposed by IRIS provides for the **creation of a small mobile unit that can intervene where necessary**, moved according to needs. Afterwards, this model can be replicated to ensure the presence of a greater number of units in the area, extending the system to other cities as well.

GREEN PLASMA SAFE allows to treat paper, gloves, masks, gauze, compostable, plastic and undifferentiated. Separate treatment is required for glass and metal after disinfection.

*“We have always been committed to the development of technologies that can be at the service of the environment and society – **comments Manuel Lai, founder of IRIS** - capable of interpreting and meeting contemporary challenges, especially on the issues of the transition to the circular economy. In this moment of emergency and radical changes - continues Lai - we want to give our contribution by making available the technology that we developed”.*

GREEN PLASMA SAFE intends to offer an effective and modular solution to deal with the current situation, but it arises above all as an **innovative concrete technology for the treatment of waste also when the emergency will be over**. In the future the problem of disposal will remain one of the themes more urgent for the health and protection of the planet, especially in small towns, isolated communities, accommodation facilities far from urban areas and in all those contexts where raw materials and energy can be recovered with a view to circular economy without harmful emissions.

<https://www.irissrl.eu/>

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