



Medical Technology and Devices

Problem

The Covid-19 virus has already caused more than 124 million infected and 2.7 million deaths. An effective solution to controlling and eradicating airborne pathogens and the transmission of infections is the usage of Personal Protective Equipment (PPE) such as face masks. However, the pandemic has also revealed some of the issues with traditional face masks: (1) they are single-use and environmentally unsustainable, (2) they provide limited protection to the wearer and others due to the material limitation on the filtration efficiency and poor mask sealing to the skin, (3) they compromise breathability, and (4) they do not sterilize the unfiltered air exhaled by the wearer.

Technology

This technology is a highly breathable face mask that completely sterilises inhaled and exhaled air using UV-C light.

The transparent face mask comprises of a sterilisation chamber having an inner surface and configured such that gas inhaled and exhaled travels through the chamber when the mask is in use. This sterilization approach has been demonstrated to be effective for a range of microorganisms such as viruses, microbes, fungi, bacteria, etc.

Benefits of such a device include:

- Complete sterilization of incoming and outgoing air
- Excellent breathability
- Reuseability and lower environmental impact

Inventors

This technology was developed by A. Prof. Stefano Palomba.

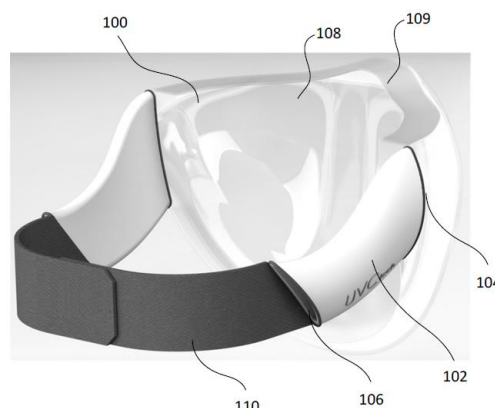
Intellectual Property Status

This technology is the subject of an Australian provisional patent application (2023900056).

Commercial Opportunity

This technology represents an opportunity in the growing PPE market (CAGR 6.7%). Potential users of such a device may include:

- Health sector, where nurses and surgeons need to use PPE routinely.
- The food processing sectors where PPE are used routinely
- Biotech industry and the level 4 research biolabs, including research labs in universities and research institutes.
- General consumers who are more susceptible or concerned about transmissible pathogens.



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