

Brinter and LED Tailor partner to implement an automatic photon disinfection system in the 3D bioprinter chamber

LED Tailor's blue-light based Spectral Blue[®] disinfection system kills all unwanted forms of viruses and bacteria inside the Brinter bioprinter, reducing the need for cleanrooms.



Bioprinting startup Brinter has today announced a partnership with LED Tailor to introduce a new disinfecting blue light feature embedded in its multi-material 3D bioprinting solution Brinter[®]. The system enables the safe production of e.g. tissue models and drugs, and minimizes the need for separate cleanrooms, making bioprinters more portable and safe.

Brinter is a modular bioprinter that is able to print multi-material and highly complex tissue structures in 3D, providing advanced features needed for bioprinting. The device can print both stiff and soft materials, including but not limited to liquids and hydrogels with living cells, bio-paste, metal with binder material, and thermoplastics, while being easy to set up in a lab in minutes.

Blue light is a part of the visible light spectrum, from 400 nm to approximately 500 nm wavelength. Disinfecting blue light, while being completely safe for human beings, kills all forms of bacteria, yeast, and mold. Opposite to UV-light (100–400nm), visible blue light does not deteriorate materials or cause other hazardous effects.

The discovery that all microbes contain blue light-sensitive compounds inside their cells as a part of their natural metabolism has been the key to creating this effective disinfection system. When these light-sensitive compounds are exposed to specific wavelengths of disinfecting blue light with certain

light intensity, a destructive chemical reaction starts. The end products of the reaction are reactive oxygen radicals inside the microbial cell. Reactive oxygen species (ROS) are molecules containing a very reactive oxygen component, which has the ability to cause damage to any structure inside the microbial cell and destroy it from the inside.

“Our photon disinfection innovation is an automatic and sustainable solution to microbe problems. The system enables safe bioprinting, production of food and beverages, restrains epidemics and answers the needs of cleanrooms. Our solutions improve the safety and vitality of employees and reduce microbiological and chemical risks in healthcare and industrial sites,” says **Harri Rautio**, CEO at LED Tailor.

“The partnership with LED Tailor makes Brinter the first 3D bioprinter in the world using blue light disinfection technology that can be utilized both inside and outside of the device to clean the environment around the bioprinter,” says **Tomi Kalpio**, CEO at Brinter.

Customers of the company include bio and pharmaceutical companies like Nanoform, as well as research organizations like VTT, BEST group at the University of Glasgow, Johannes Gutenberg University of Mainz, the University of Oulu, University of Turku, Åbo Akademi, Tampere University, and the University of Helsinki.

To date, Brinter is currently active in over 10 countries, including the USA, Germany, India, and the UK. Last month, the company recently launched its new entry-level model, Brinter Core.

About Brinter

Founded in 2020 via partial demerger in Turku, Finland, Brinter is a trailblazing Finnish bioprinting company providing comprehensive 3D bioprinting solutions and services for pharmaceutical, biotechnological and cosmetic industries, universities, and research facilities. Brinter is a modular multi-material bioprinting platform scalable from manual R&D to automated production. The company works with science and bioengineering organizations to integrate 3D bioprinting into their research, manufacturing, and treatment methods. The goal is to break through current technological limitations and improve people's quality of life. For more information, visit www.brinter.com.