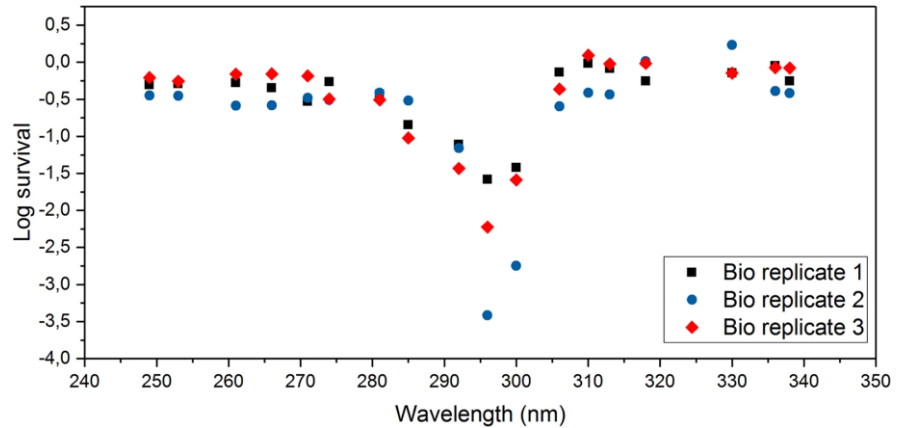


UV LED for disinfection

- A new technology for killing resistant bacteria



Value Proposition

The disinfection with UV light from mercury lamps is widely used for many years. Novel LED technology, however, gives new possibilities to kill bacteria very effectively. We develop at DTU Fotonik new UV LED systems at specific wavelengths for disinfection of specific bacteria in different ambient such as water, medical equipment and food products. In the future this LED technology may also be used to treat infections in humans and animals.

Business Opportunity/ Commercial Perspectives

There is a worldwide increasing awareness and concern about the antibiotic resistance, which prevents effective treatment of a large number of infectious diseases. The overuse of antibiotics is accelerating the bacterial resistance. There is a need to reduce the amount of antibiotics used for treatment and at the same time develop new methods for more effective treatment of infectious diseases. The new UV LED technology may be used to reduce the amount of antibiotics.

Technology Description

We have demonstrated in vitro that specific wavelengths in a narrow range around 296 nm are able to eradicate bacteria in the biofilm state more effectively than antibiotics. The investigated wavelength range was 249 nm to 338 nm with an approximate step of 5 nm. The experimental setup that may be used for investigation of biofilm eradication in a number of applications.

Development Phase/Current State

DTU Fotonik is working on UV LED for disinfection in a number of applications such as pig farms, egg industry and dental applications. We have tested the efficiency of UV irradiation treatments to eradicate *P. aeruginosa* biofilms grown for 24 h in the wavelength range 249 nm to 338 nm with an approximate step of 5 nm. It was shown that the log survival of the biofilm was remarkably reduced in the wavelength range 292–306 nm.

The inventors

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Seeking

- Research Collaboration