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New methods and equipment for processing and disinfection of surfaces

While the antimicrobial properties of ultraviolet light from mercury lamps with a wavelength of 254 nm are well known, the pandemic has prompted research into other ultraviolet light wavelengths. Cold atmospheric pressure plasma applications in disinfection, surface treatment, coating, and biostimulation are also promising. Our goal is to study different methods, such as UV-A, UV-C, plasma, and ozone to find the optimal operation modes to develop technologies for various applications, for example, surface disinfection, creation of protective coatings, stimulation of grain germination, etc.

We studied the effects of UV-A and UV-C light sources on several bacteria and viruses such as E.Coli, Semliki Forest virus, etc. A prototype equipment for disinfection with UV light and ozone was created, for whom the mapping of UV light intensity was performed. Additionally, a prototype and technology for surface processing with cold atmospheric plasma was developed.

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