

Ozone: A powerful weapon to combat COVID-19 outbreak

By Zhou Muzhi

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4. Using ozone to kill novel coronavirus

For more than 100 years, ozone, considered a killer of virus in the nature, has been widely used by people for disinfection, sterilization, deodorization, disintoxication, storage, and bleaching thanks to its strong oxidability.

And because of this, ozone should be adopted as a weapon in the global fight against COVID-19. It has three following attributes.

Full coverage. Ozone created by ozone generators or electrostatic air purifiers can reach every corner of the environment, which can overcome the problem that ultraviolet sterilization can only go straight up and down, leaving some places unsterilized.

High detergency. Oxidizing bacteria and virus is how ozone works, with no poisonous residue. On the contrary, the chemical disinfectant we use now is not only harmful to human body, but also will cause secondary population of poisonous residue. During the current epidemic, the overuse of disinfecting water has been a serious problem that we should pay attention to.

Convenience. Ozone can be produced by simple equipment. The equipment, large or small, can be used for a single room, a large public space, or public transportation modes such as buses, high-speed railways, ships and airplanes.

The effectiveness of ozone in treating bacteria and virus is not only related to its concentration, temperatures, humidity and exposure time, but also related to the strains of bacteria.

According to results of the experiment on how ozone kills SARS virus conducted by the national P3 laboratory headed by Professor Li Zelin, ozone is effective in killing the SARS virus inoculated on green monkey kidney cells, realizing a killing rate of 99.22%. The virus found in Wuhan and SARS virus both belong to the coronavirus. Researchers found that the novel coronavirus is 80% similar to the SARS virus in their genome sequences. It is reasonable to predict that ozone is equally effective in preventing and controlling the new coronavirus.

Ozone, though highly effective for sterilization and disinfection, will cause discomfort, or irritate mucous membranes, when it reaches a certain concentration level. Therefore, it is mainly used in unmanned environment.

If ozone can be used in a human environment to kill the new coronavirus and clean air, it will be a blessing to use it in crowded hospitals, factories, public spaces, closed public transportation, and indoor homes.

Whether ozone can take effect heavily depends on our ability to control its concentration levels. The volatile gas is easy to produce, but difficult to be controlled at a certain level, because of the cost of ozone sensors. Without the real-time test of sensors, it is out of the question to control its concentration.

If ozone can be controlled under a safe level by cheap and effective measures, ozone can be more easily used by people, which will lead to its use in human environment. Therefore, how to dramatically reduce the cost of ozone sensors is the challenge to be addressed at the moment.

Amid the epidemic, it is suggested that we can reasonably heighten standards for indoor ozone levels and try using ozone for disinfection and sterilization in human environment. Fortunately, Zhang Yue has donated ozone-generating purifiers to Huoshenshan Hospital and cubic hospitals, hoping this equipment can play a role in protecting medics' lives and saving infected patients.

The relationship between ozone and microorganism demonstrates the exquisite balance on living bodies on earth. On the one hand, without the protection of the ozone layer, bacteria and virus cannot be found on earth, and on the other hand, ozone with strong oxidability will kill bacteria and virus. People's knowledge of ozone is still far from enough. We should abandon the prejudice of ozone, the over vigilance of ozone, try to solve the puzzle of ozone, and fully explore the characteristics of ozone for human use. We must secure the help of ozone at the time of the new coronavirus epidemic. We must work together to make good use of ozone to defeat the epidemic.

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