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Developing The Industry 4.0 Ozone Generator Controlling System for In-Patient room Sterilization

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Abstract

This study aims to develop the Ozone generator-controlling system for sterilization in In-Patient room. Nowadays, there are many methods that the hospital uses for sterilizing the In-Patient room such as ultraviolet light, manual cleaning and disinfection, hydrogen peroxide vapor, and Ozone sterilization. Using ozone sterilization is one of the most effective ways. However, after the ozone is generated by the ozone generator, it is difficult to maintain the concentration of the ozone in the air, especially, the ozone concentration levels that each generator produces. Therefore, developing the ozone controlling system by using sensors to indicate the level of ozone concentration can accurately control the amount of ozone generated. Under the circumstances of Industry 4.0, the controlling system was digitalizing developed by Raspberry pi. The system was validated in the real experiments by monitoring the amount of ozone concentration in parts per million units which are controlled by the Ozone controlling system. Ultimately, it innovates the better sterilization method for the hospital In-Patient room.

Keywords
Ozone controlling system, In-Patient room sterilization, Raspberry pi, Industry 4.0

Biographies
Chutitad Singkarin is a high school student at Salem Academy Christian school in Salem, Oregon, USA. He is in his senior year. His STEM project relates to Ozone controlling system for sterilization. His research areas of interest are industry 4.0, digital manufacturing, and robotics.

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