

Active Oxygen Detection for Sterilization Processing Using Silver Thin Film

Kiyoshi Yoshino*, Hiroyuki Matsumoto, Mitsuo Hayasaka, Tatsuyuki Iwasaki,
Shinobu Kinoshita, Kazutoshi Noda¹ and Satoru Iwamori²

Research and Development Division, Iwasaki Electric Co., Ltd.,
1-1 Ichiryuma-cho, Gyoda City, Saitama 361-8505, Japan

¹Research Institute for Environmental Management Technology,
National Institute of Advanced Science and Technology (AIST),
16-1 Onogawa, Tsukuba City, Ibaraki 305-8569, Japan

²Faculty of Engineering, Tokai University,
Kanagawa, 4-1-1 Kitakaname, Hirastuka City, Kanagawa 259-1292, Japan

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In this study, the quantification of active oxygen species (AOS) has been investigated using silver (Ag) thin films prepared on a glass substrate as an AOS-sensing detector. On the basis of the determined values, inactivation tests of microorganisms were performed under active oxygen atmosphere in an ultraviolet (UV) lamp system. From the results, it was confirmed that the formation of silver oxide (Ag₂O) derived from surface oxidation by the active oxygen influence was successfully quantified as an AOS level by inductively coupled plasma optical emission spectroscopy (ICP-OES). It was also verified that AOS exposure was an effective method for the inactivation of microorganisms.

*Corresponding author: e-mail: yoshino-kiyoshi@eye.co.jp