

Abstract Submitted  
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**Treatment of Second Order Structures of Protein on Medical Equipments Using Oxygen Plasma** NOBUYA HAYASHI, SATOSHI KITAZAKI, MASAOKI GOTO, Saga University, YOSHIHITO YAGYU, Sasebo National College of Technology, AKIRA YONESU, University of Ryukyus — Removal of proteins from the surface of medical equipments are attempted using an RF plasma. Oxygen gas is introduced into a vacuum chamber with dimensions of 450 mm in length, 200 mm in diameter and 20L of capacity. When an RF power (13.56 MHz, 60W) is applied to an ICP type antenna, oxygen radicals (atomic oxygen and excited oxygen molecule) are produced below the antenna. The characteristics of removing protein from the medical equipments was investigated using casein and heat-resistive keratin proteins. Initial concentration of the proteins on a CaF<sub>2</sub> substrate is several mg/cm<sup>2</sup>. The treatment effect of proteins is determined by the peak height of chemical bonds in amide and second order structures appeared on FTIR spectra. The second order structure of a protein such as alpha-helix and beta-sheet are decomposed with the treatment period. Complete treatment of proteins including the second order structure requires several hours avoiding the damage to medical equipments.

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