Ⅳ　他誌掲載論文抄録

銀系抗菌加工陶磁器製品の ATP 法による迅速抗菌力試験

Application of ATP method on Antibacterial Activity Test of the Porcelain Product treated by Silver Antibacterial Agent.

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In order to establish efficiently the antibacterial activity test on the surface of porcelain products treated with silver antibacterial agents, we studied applying the luciferin-luciferase bioluminescence reaction method(the ATP method) to the film contact method, which is usually used as a standard method to estimate inorganic antibacterial activity. On the film contact method, the ATP method was tested using *Escherichia coli* ATCC8739 in comparison with the dilution plate method, which has been used as a conventional method to mesuring viable counts. There was in the high correration (r^2=0.9075)between the two methods by viable counts over 10^4, which had been lower ditection limit of the ATP method. the ATP method had high quantitativity at the sumples negatived by antibacterial activity, and it was superior in simplicity and promptitude to the dilution plate method, and then there was no significance in dicision of antibacterial activity between the two methods. It was concluded that application of the ATP method for the film contact method are effective for evaluating the antibacterial activity of antibacterial treatment porcelain products by using jointly with the dilution plate method.

TEMPORAL TRENDS OF NON-SEA SALT SULFATE AND NITRATE IN PRECPITATION IN JAPAN : 1988 - 1998

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Abstract. Non-sea salt (nss) sulfate and nitrate in precipitation were examined based on precipitation chemistry data from 1988 to 1998 gathered at 18 sites of the Japan Environmental Agency Acid Deposition Monitoring Network. Trend analysis was conducted using a general linear least square model. Precipitation amounts were found to be decreasing at 12 sites and increasing 6 sites. Nss-sulfate concentrations were found decreasing at 17 sites and nss-sulfate depositions decreasing at 16 sites. Nitrate concentrations were found increasing at 15 sites and nitrate depositions increasing at 8 sites and decreasing at 10 sites. Nitrate to nss-sulfate ratio were found increasing at all sites. Regarding sulfate, volcanic activity in Japan is decline and anthropogenic emissions in Japan are decreasing due to reduction sulphur contents in light oil,

although anthropogenic emissions in neighboring countries (China and Korea) increased over the same period. Regarding nitrate, anthropogenic emissions in neighboring countries increased and anthropogenic emissions in Japan are increased slightly in the same period.

Key words: non-sea salt sulfate, nitrate, temporal trend, emission, volcano, Japan

SAITELLITE ANALYSIS OF VOLCANIC CLOUDS AND TRANSPORT OF ACIDIC SUBSTANCES FROM MT. ASO AND MT. SAKURAJIMA

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Abstract. Substantial amount of acidic substances in Japan are emitted from the volcanoes in Kyushu. The satellite images of volcanic clouds provide not only a clue to understand the transport of these substances, but also the atmospheric diffusion of air pollutants in free atmosphere in a large scale. Here we report the analysis of volcanic clouds in the NOAN/AVHRR images in connection with the mountain top measurement of atmospheric qualities during August-November 1989 at Unzen-Nodake, supplemented with the video records of volcanic activities at the sources. We confirmed that many high concentration events of sulfur-dioxide were the results of the transport of volcanic gas from Aso and Sakurajima volcanoes, 77 km and 1 35 km away from the measuring station, respectively.

Key words: plume dispersion, satellite image, sulfuric aerosol, volcanic gas