



(试题内容)

Investigations of the chemistry of secondary aerosol formation using thermal desorption particle beam mass spectrometry. Tobias, Herbert; Koopman, Peter; Lehmann, Paul J. Department of Environmental Sciences, Department of Chemistry, and Air Pollution Research Center, University of California, Riverside, CA, USA. Meas. Toxic Relat. Air Pollut., Proc. Spec. Conf. (1998), 2, 1010-1017. Abstract Understanding the effects of fine atm. aerosol particles on human health and the environment and developing strategies for controlling fine particle concns. will require much more information on aerosol chem. than is currently available. For this reason we have recently begun an exptl. research program which will aim to elucidate some of the fundamental chem. and phys. processes involved in the formation of secondary org., nitrate, and sulfate aerosol in the atm. A key feature of this research involves the development of a thermal desorption particle beam mass spectrometer (TDPBMS) that is capable of real-time, quant. chem. anal. of particles as small as approx. 0.02  $\mu$ m in diam., which will be used in conjunction with other tools for environmental chamber studies of aerosol formation chem. To date we have constructed, tested, and optimized the performance of this instrument. Results are presented demonstrating the anal. Capabilities of the TDPBMS for species identification and quantification. The results of preliminary environmental chamber studies of aerosol formation from reactions of selected volatile org. compds. with ozone are also shown.