

Development of a PTR-TOFMS for fast measurements of volatile organic compounds in air 2. Instrumentation and performance

Nobuyuki Aoki[1]; Satoshi Inomata[1]; Hiroshi Tanimoto[2]; Yasuhiro Sadanaga[3]; Jun Hirokawa[4]

[1] NIES; [2] NIES/AED; [3] Appl. Chem., Osaka Pref. Univ.; [4] Environmental Earth Science, Hokkaido Univ.

Measurements of volatile organic compounds (VOCs) in air are widely conducted by gas chromatographic methods, whereby time resolution is typically on the order of hours. Recent advancement of proton transfer reaction mass spectrometry has enabled us to measure VOCs continuously, and greatly improved our understanding of the role of VOCs in a variety of fields including urban and regional air pollution, aerosol nucleation, and atmosphere-biosphere interactions. In this study we are exploring its potential to achieve fast measurements of multi-organic species in air by combination of a proton transfer reaction ion source with a time of flight mass spectrometer. Detection principle, outline of instrumentation, and results will be presented.