



Optica Applicata 2005(Vol.35), No.2, pp. 395-402

## Rapid detection of trace chloroethylenes using laser mass spectrometry

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### Keywords

laser mass spectrometry, resonance-enhanced multiphoton ionization, time of flight mass spectrum, chloroethylenes

### Abstract

Laser mass spectrometry is a new chemical trace analysis method with high selectivity, sensitivity and speed. The mass-resolved resonance-enhanced multiphoton ionization (REMPI) spectra of chloroethylenes-trichloroethylene and tetrachloroethylene are firstly reported in the range 305.0-325.0 nm. The mass-resolved excited spectra and laser power index of fragment ions  $CCl^+$  are presented. The experimental results indicate that 310.8 nm is the suitable ionization wavelength for detection of trichloroethylene and 322.5 nm for the detection of tetrachloroethylene in this wavelength range. The detection limits of these two chloroethylenes of concentration range expressed in  $\mu\text{g/L}$  are presented.



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