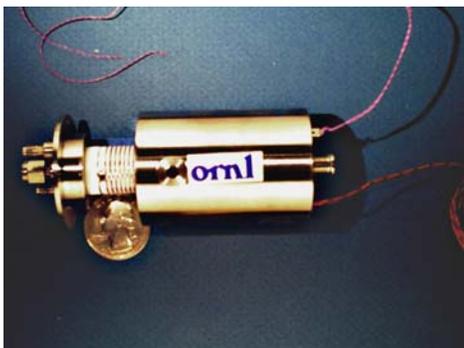




Micro Ion Mobility Spectrometer

Technical Concept



Micro ion mobility drift cell with 2.7-mm diameter by 35-mm long drift channel

The ion mobility spectrometer can achieve very high sensitivity for species that can be vaporized such as explosives, drugs, and CW agents because the measurements are made at ambient pressure with no rarification of the sample. Short drift channels permit a determination to be made in a few milliseconds making real-time measurements possible. These features combined with the potential for miniaturization of the device makes fieldable instruments based on ion mobility spectrometry especially attractive for monitoring and field measurements. Most portable ion mobility spectrometers rely on sample ionization by a radioactive beta particle source. We have shown, however, that miniaturization reduces the sensitivity with these sources because the interaction region

becomes smaller than the beta particle mean free path. We are using pulsed corona discharge ionization to circumvent this sensitivity problem and to simplify the ion gating circuitry.

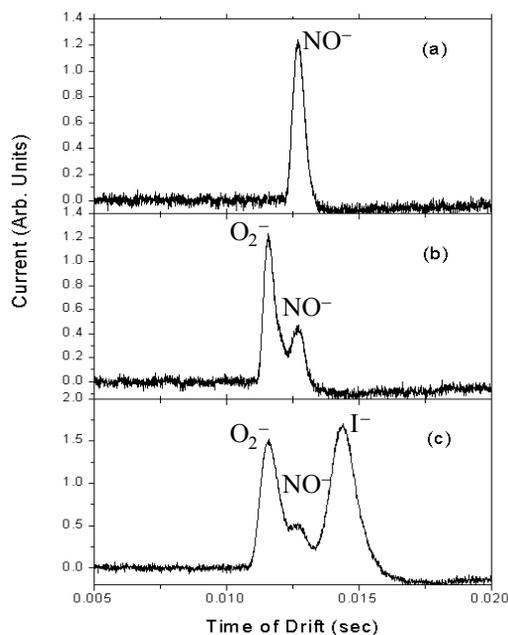
Highlights

- 2.7-mm diameter drift tube
- 35-mm long drift tube
- Pulsed corona discharge ionization
- Resolution of 15

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Resolution - 15



Ion mobility spectra showing resolution of different analytes