

# Forensic Science Applications of Ion Mobility Spectrometry

**REFERENCE:** Z. Karpas: Forensic science applications of ion mobility spectrometry; *Forensic Sci Rev* 1:103; 1989.

**ABSTRACT:** The potential of ion mobility spectrometry (IMS) as a sensitive method for detecting hidden explosives and contraband drugs has been recognized since the advent of the technique twenty years ago. The IMS performed extremely well in laboratory studies of single-component chemical systems, and detection limits of sub-part-per-billion were reported for explosive vapors. However, in order to overcome the problems encountered in monitoring vapors in the ambient atmosphere, special means were needed to increase the sensitivity and specificity of IMS instruments. It took over a decade until single purpose IMS instruments were developed. These portable (or even hand-held) instruments are presently being tested as monitors for detection and identification of drugs or explosives, with sensitivity and specificity that are unrivaled by other techniques.

**KEY WORDS:** Contraband drugs, detection, explosives, identification, ion mobility spectrometry, monitoring, narcotics.