

Rapid Analysis of Ecstasy and related Phenethylamines in Seized Tablets by Raman Spectroscopy

Raman spectroscopy with 785 nm light can be used to study samples of MDMA (N-methyl-3,4-methylenedioxyamphetamine) and related compounds (MDA, MDEA, MBDB, 2C-B and amphetamine sulfate), as well as pure standards of these drugs. At 785 nm we have found that the level of fluorescence background even in untreated samples is sufficiently low that there is little difficulty in obtaining good quality data with moderate 2 min data accumulation times. The spectra can be used to distinguish between chemically-similar variations on the drug, such as the geometrical isomers MDEA and MBDB. Furthermore, these differences can be found even in directly recorded spectra of samples which have been bulked with other materials, giving a rapid and non-destructive method for drug identification. The spectra can be processed to give unambiguous identification of both drug and excipients and the relative intensities of drug and excipient bands can be used for analysis. Finally, the simple nature of the measurements lends itself to automatic sample handling.