



# Detecting drugs from a fingerprint

## ► Detection of drugs in fingerprints

Academic: *Dr Mel Bailey*

Drug testing conventionally involves the collection of blood, urine or saliva. Mass spectrometry techniques developed in an IAA project have enabled a non-invasive, high throughput test that detects drug use from a single fingerprint.

The project, led by Dr Melanie Bailey, has demonstrated that by using a technique known as Desorption Electrospray Ionisation (or DESI), which involves carefully controlled spraying of a solvent onto a fingerprint slide prior to analysis, it is possible to determine whether a person has taken – rather than merely handled – cocaine. Someone who has taken the drug will excrete traces of

benzoylecgonine and methylecgonine, leaving chemical traces in their fingerprint residue.

Dr Bailey's original research into applying mass spectrometry techniques, funded by the IAA, has led to further collaboration between Surrey and researchers from the Netherlands Forensic Institute, the National Physical Laboratory, King's College London and Sheffield Hallam University.

With the drug-testing market worth several billions of pounds worldwide, the impact of the research could be far-reaching. Drug testing is used routinely by probation services, prisons, courts and other law enforcement agencies, but traditional testing methods have limitations. For example, blood testing requires trained staff; urine testing brings privacy concerns; and testing of bodily fluids can represent a biological hazard.



Dr Bailey, Dr Costa and team



**With the drug-testing market worth several billions of pounds worldwide, the impact of the research could be far-reaching**



Dr Bailey comments:

**“This research is exciting because it offers a new opportunity for high-throughput, non-invasive drug testing which – since it is based on a fingerprint – is more secure and harder to falsify than other methods.”**