UNIVERSITY OF AMSTERDAM

FORENSIC RESEARCH PROJECT

RESEARCH PROJECT

Title	: Chemical imaging of forensic traces in a multidisciplinary setting
Keywords	: Imaging, Forensic traces, Hyperspectral imaging, XRF
Forensic Expertise Area	: Forensic Chemistry
Department	: multidisciplinary
Institute/Company	: NFI
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SHORT DESCRIPTION

When forensic traces like gunshot residue, human biological stains, fingermarks, explosive residue and drug metabolites are not only chemically analysed but also chemically imaged new options for detection, visualization (exploiting the chemical contrast) and forensic interpretation (activity level!) emerge. The applicability and usefulness of chemical imaging in forensic science is amongst others determined by the sensitivity, resolution, scan speed and versatility of the equipment. Currently the techniques used for chemical imaging are mostly used independent and subsequently after each other, which has both practical limitations and limitations regarding data interpretation. Therefore, it would be beneficial to develop a multidisciplinary chemical imaging strategy that can image forensic traces using different techniques simultaneously. In this project the aim is to test multiple technique-trace combinations to investigate their combined potential, advantages and limitations regarding chemical imaging, and their added value for forensic casework. Specifically, you will look into the combination of alternate forensic light source imaging (crime-light ML Pro), hyperspectral imaging (e.g. Raman, Infrared, UV) and XRF imaging.

REQUIRED/RECOMMENDED EXPERTISE

We are looking for a motivated student who is capable of working independently, but also has the skills to coordinate and perform this research together with researchers from different disciplines within the institute. Basic understanding in forensic chemistry is required. Affinity with forensic trace investigation, chemical imaging and practical lab work is recommended.

REFERENCES

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