MASTER FORENSIC SCIENCE – RESEARCH PROJECT

Title	: Classification of container- and display glass with LA-ICPMS
Keywords	: Chemical Analysis, LA-IPCMS, Classification, Data analysis
Forensic Expertise Area	: Glass
Start Date	: 1 April 2026
Host Institute	: NFI
Department/Team	: Microtraces & Materials Group
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Short Description

In various crimes, glass traces can play an important role. Most of the time, glass traces originate from windows, but other types of glass are sometimes found as well. The NFI wants to gain more insight into the composition and variation of other types of glass to better understand them and to expand existing statistical models.

As part of this project, a large number of glass samples will need to be collected. This internship focuses on container glass and display glass from smartphones and tablets. After collection, the elemental composition of the glass samples will be determined, and based on the data a classification model will be developed.

During the internship, you will personally collect the glass samples and record the relevant information. You will then analyze the glass samples with LA-ICPMS according to existing protocols. The analysis results will be worked out and incorporated into a classification model. It is important that you can work accurately and have an affinity for data analysis.

Key References

1) J. Almirall et al. Interpol review of paint, tape, and glass evidence 2019 2022, FSI: Synergy 6 (2023) 100306. https://doi.org/10.1016/j.fsisyn.2022.100306.
2) O. Ovide et al. The analysis of glass from portable electronic devices and glass accessories using µ XRF for forensic investigations, Forensic Science International 343 (2023) 111550. https://doi.org/10.1016/j.forsciint.
3) K. von Wuthenau, T. Segelke, A. Kuschnereit, M. Fischer, Glass authentication: Laser ablation inductively coupled plasma mass spectrometry (LA ICP MS) for origin discrimination of glass bottles, Talanta 235 (2021).

Required/Recommended skills and expertise

- entrepreneurial
- analytical chemistry
- data analysis

Visuals

