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NICC, Department of Drugs and Toxicology

**Lic. Filip Van Durme, Mentor**

NICC, Department of Drugs and Toxicology



PhD in Pharmaceutical Sciences  
2023-2024

INVITATION to the public defence of

### Amorn SLOSSE

To obtain the academic degree of

**'DOCTOR OF PHARMACEUTICAL SCIENCES'**

### Profiling of seized cannabis samples using gas chromatography, statistical methodology and multivariate data analysis

The public defence will take place on

**Thursday, 16 November 2023 at 4:30 p.m.**

**In Auditorium Brigitte Velkeniers**

Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

[Campusplan](#)

## Summary of the dissertation

*Cannabis sativa* L. is undoubtedly the most used recreational drug worldwide because of its desired acute psychotropic effects, like relaxation, euphoria and altered perceptions. Overall, the significance of cannabis is rapidly growing in the scientific world with a global debate to permit the recreational use in several countries.

Many forensic studies have already been carried out, such as identification/quantification but research with regard to profiling of cannabis are scarce, although it remains the number one confiscated illicit drug.

The general aim of this thesis will be the development of a fit-for-purpose cannabis profiling method for the direct comparison of different herbal samples. This forensic tool could improve law enforcement investigation, resulting in additional information/evidence to be used in criminal cases. However, herbal cannabis consists of a variable and complex matrix, depending on many environmental conditions causing heterogeneity of the plant material. This makes it very challenging to develop a cannabis profiling approach.

Target and untargeted gas chromatographic profiles are used in combination with multivariate data analysis and statistical methodology.

All techniques will be compared on their capability to discriminate between different samples. The main focus was on the data handling part of the experiments where the influence of applying several preprocessing methods was studied which showed a tremendous improvement to distinguish seized marijuana. The ultimate goal was to properly define an acceptable threshold value to link confiscated samples.

## Curriculum Vitae

Amorn Slosse was born on the 4th of October 1991 in Kortrijk, Belgium.

She completed secondary school, math-sciences, in 2010 after which she started her academic career at the Vrije Universiteit Brussel (VUB). In 2016, Amorn graduated as a Master of Science in Pharmaceutical Care. Afterwards, she started a PhD at the VUB research group of Analytical Chemistry, Applied Chemometrics and Molecular Modelling under supervision of prof. Yvan Vander Heyden and prof. Debby Mangelings in collaboration with the Drugs & Toxicology department at the National Institute for Criminalistics and Criminology (NICC) under supervision of Lic. Filip Van Durme and dr. Nele Samyn.

During her PhD, she provided assistance in different educational courses and supervised two master student's theses.

Amorn has four peer-reviewed scientific publications as first author and is co-author of another ten publications. Her work was presented at various national and international scientific conferences as both oral and poster presentations.

Since 2019, she has a job at the NICC as a judicial expert in training and is member of a European project, named BorderSens where the main aim is to develop a handheld device for fast detection of illicit drugs during border controls.

At the end of this year, a whole new adventure will begin with the arrival of her baby daughter.