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PhD in Pharmaceutical Sciences 2017–2018

INVITATION to the Public defence of

Johan VIAENE

To obtain the academic degree of '**DOCTOR IN PHARMACEUTICAL SCIENCES**'

Quality Control of Traditional Herbal Medicines: Facing challenges in chromatographic-fingerprinting-based identifications through multivariate classification.

Monday 09 July 2018

in B017, 17:00

Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

How to reach the campus Jette:

<http://www.vub.ac.be/english/infoabout/campuses>

Summary of the dissertation

Traditional herbal medicines are gaining an increased interest in the Western world. Their application imposes appropriate quality control tools. An important quality control aspect is the proper identification of the raw materials. One strategy is to identify these materials via comparison with reference samples of (botanically identical) species. Various features can be used for this comparison, which can be visual, chemical or based on other aspects. In our research, chromatographic profiles or fingerprints were used, since they contain information on a multitude of compounds in the medicines. Objective comparison methods were developed using multivariate classification modelling tools. These are built using a representative set of samples from the species that need to be distinguished. Two challenging sample sets were used in this research project. In the first sample set, the number of representative samples was limited, aiming to develop models capable of distinguishing leaf samples from two plant genera and six species. In the second sample set, a distinction had to be made between samples from three groups, formed by the same or very closely related species, and/or different plant parts. In the first study already existing classification techniques were applied, in the second novel approaches were additionally developed. In both challenging situations models were created that successfully could distinguish the considered samples.

Curriculum Vitae

Johan Viaene was born in Ostend on 31 May 1983, but soon moved to the Brussels region. His love for plants was his drive to obtain a Bachelor in Landscape and Garden Architecture. Later, his focus of interest changed to the chemical aspects of medicinal plants. Luckily, he was given the opportunity to commit himself to study Pharmaceutical Sciences at the Vrije Universiteit Brussel.

He obtained his Master's degree in Drug Development in June 2012. Later that year he started his PhD research at the Department of Analytical Chemistry, Applied Chemometrics and Molecular Modelling, supervised by Prof. Yvan Vander Heyden, Prof. Bieke Dejaegher and Prof. Debby Mangelings. His research focused on the quality control of traditional herbal-medicine products, applying mainly chromatographic and mass spectrometric separation techniques combined with chemometric methods, required to process the obtained data. His work resulted in 21 co-authored publications, three book chapters, along with 27 poster- and 15 oral presentations. He was closely involved in cooperation with partners within and outside the VUB. In October 2017 he moved to New Zealand. He is currently working at the Embassy of the Kingdom of the Netherlands as a consular officer in Wellington. His PhD will open doors to plenty of career opportunities.