

PhD position in liquid chromatography-mass spectrometry

Vrije Universiteit Brussel (www.vub.ac.be) is an internationally oriented university in Brussels, the heart of Europe. Through tailor-made high-quality research and education, VUB wants to contribute in an active and committed way to a better society for tomorrow.

The PhD student will be working in the Eeltink research group in the Department of Chemical Engineering at the Vrije Universiteit Brussel. The main research themes of the Eeltink group are *i*) Advancing fundamentals of separation science, *ii*) design and development of functionalized monolithic nanomaterials, *iii*) Realizing novel concepts via microfluidic solutions, and *iv*) Developing UHPLCⁿ-MS/MS workflows in support of post-genomic biotechnology and medical diagnostics.

PhD research project: Recent studies in the field of proteomics have demonstrated that over 80% of proteins exert their function as part of larger assemblies. The PhD project aims at realizing novel comprehensive multi-dimensional-dimensional liquid-chromatography workflows that maintain protein conformation during analysis, allowing for unprecedented separations, targeting profiling and regulation of biomolecular-interactions networks. The key objectives are:

- Development and performance characterization of novel column technologies for high-resolution protein separations, maintaining protein 3D conformation during analysis.
- Establishing native high-resolution 1D-LC-MS methods (HIC, IEX, and SEC) coupled directly to (ion-mobility) mass spectrometry.
- Development of comprehensive two- and three-dimensional LC workflows protocols for unravelling of biomolecular interaction networks

Results will be presented at conferences and published in international journals. The PhD student is expected to complete the PhD thesis within 4 years. In addition, the PhD student will contribute to the education program of the university.

Admission requirements: Applicant must hold a master's degree in the field of (analytical) chemistry or (bio)chemical engineers with interest in analytical science. Previous experience in the field of separation science as well as a broad interest in analytical sciences will be important selection criteria, as well as motivation, independence, and creativity. The successful candidate has excellent English communication and writing skills. After initial selection via a conference call, the candidate should be able to come to Brussels for a lab visit and interview.

Application procedure: Interested applicants should send an application letter, a brief description of research ideas relevant to the project, your curriculum vitae, grade list, and two recent letters of recommendation as a single pdf via E-mail to:

Prof. dr. S. Eeltink
Department of Chemical Engineering
Vrije Universiteit Brussel
Pleinlaan 2, B-1050, Brussels, Belgium
E-mail: seeltink@vub.be