

PhD position (f/m) Analytical Chemistry / Liquid Chromatography

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 at the Department of Chemical Engineering at the Vrije Universiteit Brussel and will be supervised by Prof. S. Eeltink (promotor) and Prof. K. Broeckhoven (co-promotor).

Goals of the PhD project: The project aims at shifting the limits of speed and separation performance in ultra-high-pressure liquid chromatography (UHPLC) and supercritical chromatography (SFC). A comprehensive study will be conducted to scout the dispersion characteristics, injection principles, and effect of thermal effects on performance and retention of the current-state-of-the-art UHPLC system. In addition, the possibilities for method speed-up (going from conventional LC to UHPLC applying maximum system pressure in combination with ballistic gradients) will be explored. Furthermore, the boundaries of an in-house built extreme-pressure LC will be investigated. Finally, the project aims at probing the possibilities of SFC to realize very-high-speed separations. A fundamental aspect will be the investigation of injection principles in combination with modification of injection solvent in a step towards interfacing UPLC to SFC. 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 are the education background, 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.

Duration: 4 years (with yearly evaluations) and start of contract: September/October 2018. For more information please contact Prof. Broeckhoven (ken.broeckhoven@vub.be) or Prof. Eeltink (seeltink@vub.be)

Application procedure: Interested applicants should send an application letter, including motivation, a brief description of research interests, and include 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