

The Department of Natural Sciences and Sustainable Resources, Institute of Analytical Chemistry, is currently seeking a

Postgraduate Research Associate

GC-MS based methods for advanced metabolic pathway analysis (COE Project 2.11)

assigned to research program *Self-Sustainable Microbial Systems* of **Cluster of Excellence (CoE) Circular Bioengineering** <https://www.circularbioengineering.at>

(Reference code 204)

Extent of employment: 30 hours per week

Duration of employment: 1st of December 2025, limited to 30th of November 2029

Workplace: BOKU University, 1190 Vienna, Muthgasse 18

Allocation in compliance with the Collective Agreement for University Staff to job group:
B1

Gross monthly salary: (depending on previous eligible experience) at least: € 2.786,10
(payable 14 times per year)

About the Position:

This project focuses on the development and implementation of advanced GC-MS methodologies for the accurate analysis of isotopologues and isotopomers, with an emphasis on tracer studies in metabolomics. Special attention will be given to subcellular fractions and the dynamic analysis of metabolic fluxes. The discovery and modification of metabolic pathways demands for advanced analytical tools and bioinformatic approaches. The analytical research in this project is based on GC-MS, which is the gold standard for isotopologue and isotopomer analysis. The planned developments will use a fully validated method as a starting point and are aiming at the design of methods which are fit-for-purpose regarding tracer studies and flux analysis in sub-cellular fractions, extracellular compartments as well as metabolic flux analysis at low sample intake. Moreover, the design of pathway modules for energy and carbon efficient assimilation of single carbon substrates will also demand for the implementation of a platform enabling dynamic metabolic flux analysis.

Research Objectives:

- Organelle isolation: Collaborative development of rapid, high purity organelle isolation methods targeting mitochondria, microsomes, lysosomes and peroxisomes;

- Sample handling: Collaboratively design and validate methods for sampling, quenching, and storage of organelle samples to ensure data integrity
- GC-(Q)TOFMS Method Development: Design advanced GC-(Q)TOFMS (Gas Chromatography-Time of Flight Mass Spectrometry) methods for accurate measurement of isotopologue and isotopomer ratios in sub-cellular fractions
- Dynamic flux analysis: Implementation of high-throughput platform for time resolved measurement of metabolic fluxes

Tasks and methods:

- Development of fully automated high-throughput sampling methods for limited sample amounts and time-resolved sampling
- Implementation of different configurations of GC-MS, i.e. GC-MS (chemical ionization or electron ionization with single quad MS), GC-TOFMS (chemical ionization or electron ionization with TOFMS) and GC-QTOFMS with isotopologue selective fragmentation

Required skills and qualifications

- Diploma degree in Chemistry or other equivalent university degree
- Language skills: very good English skills

Desirable skills and qualifications

- PhD candidate is creative, curious and a good team player
- PhD candidate holds a Master's degree in the field of chemistry or completed a master thesis in the field of analytical chemistry
- PhD candidate has advanced English speaking and writing skills

Applications can be submitted until: 21st of October 2025

University of Natural Resources and Life Sciences Vienna seeks to increase the number of its female faculty and staff members. Therefore qualified women are strongly encouraged to apply. In case of equal qualification, female candidates will be given preference unless reasons specific to an individual male candidate tilt the balance in his favour.

People with disabilities and appropriate qualifications are specifically encouraged to apply.

Please send your job application to Personnel Management, University of Natural Resources and Life Sciences, Peter-Jordan-Straße 70, 1190 Vienna; E-Mail: recruiting@boku.ac.at.

(Reference code: 204)

- Please use this **[Application form – PhD-positions](#)**

- Please note that we will not be able to process your application without this form and unless it is sent to recruiting@boku.ac.at
- Following additional documents have to be submitted as .pdf files:
 - Curriculum vitae
 - Copy of certificates from the applicant's bachelor and master/diploma studies
 - A translation of the documents is necessary if the original documents are not in English or German

For information on the further application procedure – online hearing and interviews – see <https://www.circularbioengineering.at/jobs>

We regret that we cannot reimburse applicants travel and lodging expenses incurred as part of the selection and hiring process.

www.boku.ac.at