

Green Chemistry TechHub – A Trilateral Doctoral Program

The Green Chemistry TechHub is a joint doctoral training program established by TU Wien (TUW), the University of Natural Resources and Life Sciences (BOKU), and the University of Vienna (UV). Funded by the Austrian Research Promotion Agency (FFG) and supported by a robust network of industry partners, the program is dedicated to advancing innovation in sustainable and environmentally responsible chemistry through interdisciplinary research and academic–industry collaboration.

We are currently offering 8 fully-funded PhD positions across the three institutions:

- 4 Positions at TU Wien (TUW)
- 2 Positions at BOKU University (BOKU)
- 2 Positions at University of Vienna (UV)

Each doctoral researcher will engage in a four-year research program, spending **up to 3 years at the academic institution** and **1 year embedded with an industry partner or continued employment at the academic institution with a secondment placement at industry**, gaining valuable cross-sector experience in applied green chemistry and biotechnology. The positions are equivalent to part-time university assistantships (30 hours/week) and offer competitive remuneration according to FFG guidelines and the respective university's pay scale, including full social benefits.

We offer:

- An interdisciplinary, applied research setting within the **Green Chemistry TechHub**
- Exposure to both academic excellence and real-world industrial challenges
- Hands-on experience with advanced tools and methodologies in sustainable biotechnology
- Competitive funding and access to professional development resources
- Diverse and cutting-edge research projects
- Continuing personal and professional education
- Additional optional training as a Green Chemistry Change Manager (GCCM)
- High-quality supervision by renowned scientists
- Ample opportunities for international networking, secondments, and research collaboration
- Courses on transferable skills
- Comprehensive social benefits (e.g., health insurance)
- Administrative support in study and organizational questions
- A central location in Vienna—consistently ranked as the city with the best quality of life
- A dynamic and inclusive working environment

Applications:

Application Process: Applications will be reviewed on a rolling basis until the position is filled.

At the Green Chemistry TechHub consortium we are committed to equal opportunity and strive to increase the representation of women within scientific staff across all partner institutions. Therefore, we strongly encourage qualified women to apply. Female applicants will be given preferential consideration when their qualifications, aptitude, and professional performance are comparable to those of male applicants. Additionally, persons with disabilities are especially encouraged to apply.

Applications should be submitted online via the TU Wien job portal.

Required Documents:

- A **cover letter** listing three preferred PhD topics from the project list (ranked with motivation)
- A **curriculum vitae**, including publications, conference contributions, and other scientific activities (if applicable), preferably using the [Europass template](#)
- A **one-page summary** of the diploma/master's thesis
- **Transcripts** of records of the Bachelor- and Master-studies
- A **one-page outline** on how you would approach the proposed project

Selection Process:

Shortlisted candidates will be invited to participate in a **video or face-to-face hearings**, which will include:

- A presentation on previous research projects
- A short discussion of a thematically related publication (article sent one week in advance)
- A critical reflection on the proposed implementation of the selected project

This multi-stage process ensures a comprehensive evaluation of technical expertise, strategic thinking, and alignment with project objectives.

For further information about the open positions or the application procedure, please contact the Project Manager, Muhammad Farooq Zia (muhammad.zia@tuwien.ac.at), or reach out to one of the project leaders.

Positions (English):

- Position 1. Biotechnological methanol valorization (BOKU/New Path Bio)
- Position 2. Production of biochemicals based on biodiesel and bioethanol waste (BOKU/Vogelbusch)
- Position 3. Membrane separation process for CO₂ (TUW/VOESTalpine)
- Position 4. Sustainable polymer processing (UV/BASF)
- Position 5. Starch modification (TUW/Agrana)
- Position 6. Sustainable isotope labeling (UV/Boehringer Ingelheim)
- Position 7. Solvent-free reaction cascades using mechanochemistry (TUW/RDP)
- Position 8: Development of a modular polysaccharide platform using click chemistry (TUW/Agrana)

Positions (German):

- Position 1: Biotechnologische Methanol Valorisierung (BOKU/New Path Bio)
- Position 2: Lentilactobacillus Plattform (BOKU/Vogelbusch)
- Position 3: Membranseparationsprozess für CO₂ (TUW/VOESTalpine)
- Position 4: Nachhaltige Polymer-Prozessierung (UV/BASF)
- Position 5: Stärkemodifikation (TUW/Agrana)
- Position 6: Nachhaltiges Isotopenlabelling (UV/Boehringer Ingelheim)
- Position 7: Lösungsmittelfreie Reaktionskaskaden mittels Mechanochemie (TUW/RDP)
- Position 8: Modulare Polysaccharid-Plattform mittels Click Chemie (TUW/Agrana)

Position 1:**Biotechnological Valorization of Methanol****Project Overview:**

Methanol is a promising feedstock for biotechnology that can be assimilated by several bacteria and yeasts and converted into chemicals or food proteins. We are seeking a motivated PhD candidate to join our project on methanol utilization with the yeast *Komagataella phaffii*. The project aims to implement a metabolic engineering strategy to increase energy efficiency of methanol metabolism in bioreactor cultures.

Key Responsibilities:

- Engineer *Komagataella phaffii* strains with synthetic biology tools (Golden Gate cloning, CRISPR aided genome editing).
- Investigate growth and production parameters in lab scale bioreactor cultivations.
- Develop and optimize production processes by computer-aided design.
- Provide process concepts and data for techno-economic analysis.

Qualifications:

- Master's degree in Biotechnology, Microbiology, Molecular Biology, Chemical Engineering, or a related field.
- Strong background in microbial cell engineering.
- Experience with bioreactor cultivation.
- Practical experience in the work with yeasts is a plus.
- Excellent analytical and problem-solving skills.