

Graz University of Technology
Institute of Chemical Engineering and Environmental Technology

Purification strategies for bio-oil and lipids produced from agricultural and processing tomato residues

The Biorefinery Group, led by Assoc.-Prof. Marlene Kienberger at the Institute of Chemical Engineering and Environmental Technology, Graz University of Technology, is seeking a highly motivated and talented PhD candidate to join our team within the Horizon project "ToFuel". The project focuses on the development of an energy driven biorefinery concept from residues from tomato production to produce sustainable aviation fuels (<https://www.tofuel-project.eu/>).

Key Responsibilities

The candidate will be responsible for the development and optimization of advanced purification routes, for oil and lipid fractions from hydrothermal liquefaction and fermentation respectively. Technologies include mass transfer unit operations, but also chemical reaction engineering approaches. Key tasks include setup development, implementation of analysis methods and experimental routines, design and investigation of different technologies involving hydrodenitrification, extraction using novel solvents. Besides data acquisition, data evaluation with standard chemical engineering tools such as mass and energy balances also using relevant software is a key responsibility. This position offers the possibility to work in an interdisciplinary project at the interface of chemical and reaction engineering. Together with specialists from LCA fast feedback on the footprint of developed technologies is expected.

Key Requirements / Qualifications

Applicants should hold (or be close to completing) a Master's degree in Chemical Engineering, Process Engineering, or a related field. A strong background in mass transfer unit operations, along with proficiency in experimental design, work in a chemical /process engineering laboratory, quantitative data analysis, and data evaluation. Candidates should be highly motivated, capable of independent work, and eager to engage in interdisciplinary collaborations.

Experience in working in a chemical laboratory and performing analysis such as chromatography and standard chemical analysis. Familiarity with working with process streams from the biobased industry.

What We Offer

We offer a three-year PhD position (initial 1-year contract + 2-year extension), with the possibility of further extension based on project progress. The position includes a competitive salary and employment benefits under a fixed-term contract in accordance with Austrian academic standards, including paid annual leave. The successful candidate will have access to state-of-the-art facilities. The position also provides opportunities for career development, international collaborations, and participation in conferences to present research findings.

Starting date and Application

If you are interested in the PhD position, starting on the 1st of October 2026, please send your application to: marlene.kienberger@tugraz.at, with the reference ToFuel-PhD thesis opportunity.