



University of Natural Resources and Life Sciences, Vienna
Department of Civil Engineering and Natural Hazards
Institute of Green Civil Engineering

Vacancies: Two Postgraduate Research Associates (pre-doc)

The Research Group led by Prof. Benjamin Kromoser is a very motivated team performing research in the field design, calculation, dimensioning and manufacturing of resource efficient building constructions made of wood and concrete. We are hiring new team members which will focus the development of strand-based timber products for structural engineering.

Homepage: www.krg.boku.ac.at Instagram: [#kromoserresearchgroup](https://www.instagram.com/kromoserresearchgroup)

Research Topic 1: Strand-based timber products in structural engineering– Material modelling and design approach

In regard to structural engineering strand-based and chip-based timber products are seldomly used as the main supporting structural components. The research will focus on laying the groundwork for a safe and yet efficient design using the newly developed building components. The mechanical behaviour will be assessed using a variety of experimental investigations in order to create an initial basis for suitable material modelling. The results form the basis for the necessary models for the later development of an analytical design model. In addition, the results will serve as the input parameters for numerical calculations.

Research Topic 2: Strand-based timber products in structural engineering– Structural optimisation and parameterisation of industrially manufacturable components

The optimisation of the load-bearing structure is as important as the optimisation of the material itself when it come to the resource-efficient use of building materials. The research topic will consist of the development of a structural optimisation strategy for industrially manufacturable components made of strand-based timber products. In addition to a numerical topology optimisation under the assumption of different load scenarios, a feasible arrangement strategy of the different components will be developed. This process will then be implemented within the framework of a digital parametric planning and optimisation model with clearly defined boundary conditions.

Occupation: 30 hours/week, with the possibility of 40h/week and additional hours for teaching

Duration: Starting 01.12.2022 until 30.10.2025

Tasks: Independent research in the above-mentioned field, independent teaching, co-supervision of bachelor and master thesis, student support and other administration related to the group's teaching and research agenda, commitment to complete doctoral degree, presentation of research results at international conferences and workshops.

Requirements: Master's degree in mechanical engineering, automation technology, architecture or civil engineering. If possible experience in designing wood and concrete structures and conducting experimental investigations. Experience in an engineering or architecture office is of advantage but not mandatory. Good command English, knowledge of the German language appreciated.

Classification according to Univ. employment group: B1

Please send your application including CV, information about the BSc- and MSc-grades, cover letter and a list with names of potential references to Prof. Benjamin Kromoser (hochbau@boku.ac.at).