



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

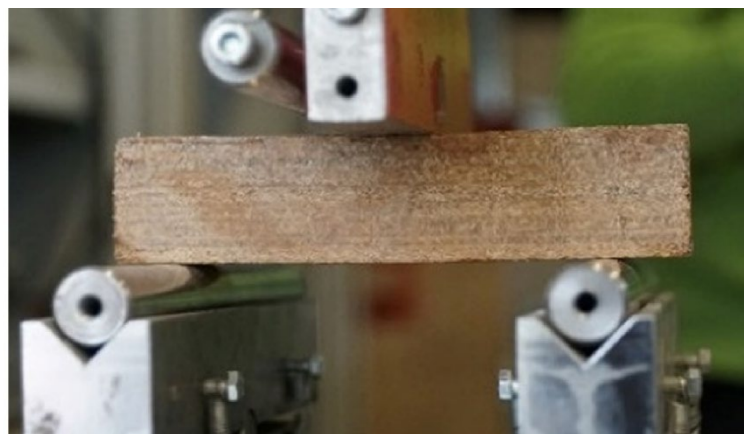
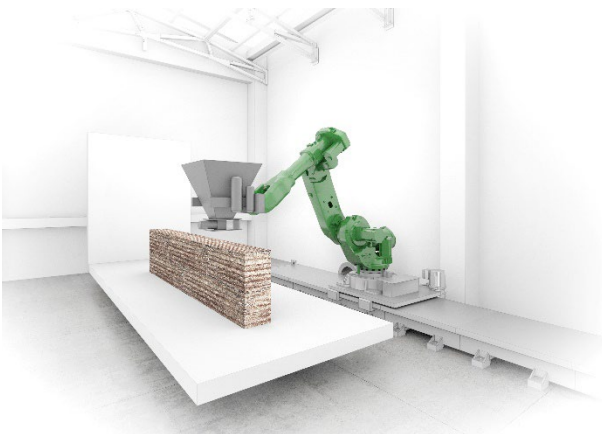
Vacancy: Research Associate (Pre-doc) in the field of additive manufacturing of fully-recyclable wall systems made from renewable materials

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 on additive manufacturing of fully-recyclable wall systems made from renewable materials.

Homepage: www.krg.boku.ac.at Instagram: #kromoserresearchgroup

Research Topic: Additive manufacturing of fully-recyclable wall systems made from renewable materials: Production technology and characterisation as well as dimensioning of building components

The research concerns four issues: (1) the worldwide shortage of non-renewable and renewable raw materials (2) the current main use of inorganic building materials (concrete and steel) in the construction industry as well as the (3) to date still inefficient use as well as also missing circular approaches in the use of renewable raw materials and (4) the low productivity in the construction industry. The direct content of the research will be to develop a research-based, robotic, additive manufacturing (3D printing) process for wall components using bio-based raw materials. Focus within this position is the development of building components and comprehensive characterisation of the mechanical properties and the evaluation of possible fields of application. The comprehensive characterisation of the mechanical properties will be carried out using small-format and full-scale test specimens in component dimension. In particular, the following parameters will be investigated: Bending load-bearing capacity, shear load-bearing capacity, modulus of elasticity and the static long-term behaviour.



Occupation: 30 hours/weeks

Duration: Starting 01.09.2022 until 31.08.2025

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.

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).