



Post-doc researcher position at TU Wien, Faculty of Civil and Environmental Engineering

Project: Loam Walls with Algorithmically Generated 3D Natural Reinforcement.

The AlgoLoam project is an EC funded HORIZON Pathfinder project. This European project will be performed in collaboration with academic and industrial partners from Austria, Germany, Netherlands, Serbia, Sweden.

This project aims at fabricating a completely biodegradable, made of exclusively natural materials, self-supporting reinforced light loam wall solution. The reinforcement, a biomimetic/ textile inspired skeleton, should improve the cohesion and the tensile strength of the loam volume.

Prerequisites

- PhD degree
- Background in material science and mechanics of materials
- Strong interest in experimental work
- Ability to communicate and function in an international collaborative environment

Profile

Expertise in material science and mechanical behavior of materials. Interest in linking microstructure and macroscopic properties. The candidate will explore the behavior of natural fibers, stalks and stems, or flexible wood sheets, focusing on their ability to be deformed or weaved, to support load, to interact with each other and with a loam matrix, as well as assessing their durability.

Knowledge of wood, natural materials, loam, and experience in working in a lab are a plus.

Hosting group at TU Wien: Building Material Research Unit

The interdisciplinary Building Materials research group aims to provide the construction industry with knowledge and tools to meet the challenges of tomorrow, while training the next generation of engineers in the field of building materials science and materials technology. Challenges include optimizing the use of raw materials (e.g. minimizing carbon dioxide emissions), increasing the use of recycled materials (e.g. industrial, construction and demolition waste), developing efficient and novel characterization methods to integrate locally sourced materials/waste materials into construction processes and supporting new application methods (e.g. 3D printing).

We are an international and diverse team of people coming from various backgrounds in civil, mechanical and chemical engineering, and material science. We have expertise in physics of materials, mechanics of materials, rheology, thermodynamics, dynamics of suspensions. We work in a 500+ m² lab space, instrumented with mechanical testing machines (Zwick, etc), several mixers, including a high intensity for UHPC, rheometers (Anton Paar), a mercury porosimeter, an isothermal calorimeter, particle size analyzer, optical tables and ultra-fast cameras, optical microscopes, 3D printers, climate chambers, etc.

Duration & Salary – 2 years. Entry level salary as a postdoctoral researcher is covered by level B1 of the Austrian Collective Agreement for university staff, and receives a minimum of currently EUR 4.752,30 /month gross for 40 hours/week, 14 times/year. Relevant working experiences may increase the monthly income.

Keywords – loam, raw clay, wood, natural reinforcement, natural fibers

To apply - Please send a résumé, a cover letter describing your interests and previous work, as well as contact information of two references to agathe.robisson@tuwien.ac.at, with the subject email “AlgoLoam post-doc position”. We look forward to receiving your application until 1 Sept 2024. Candidates are not eligible for a refund of expenses for travelling and lodging related to the application process.

Diversity statement: TU Wien is committed to increase women employment in leading scientific positions. Women candidates are explicitly encouraged to apply. Preference will be given when equally qualified. People with special needs are equally encouraged to apply. In case of any questions, please contact the confidant for disabled persons at the university (contact: gerhard.neustaetter@tuwien.ac.at).