

Doctoral (PhD) candidate (f/m/d) on reinforcement of 3D printed concrete

The Professorship of Digital Structures with Mineral Materials at the TU Munich is looking to expand its team with a Doctoral (PhD) candidate (f/m/d), 1.0 fte, 36 months, to start as soon as possible.

About us

Digital Structures with Mineral Materials is a new professorship at the TU Munich, focusing on the development of structural engineering, design, analysis and modelling methods for reinforced, additively manufactured concrete and other mineral materials. The professorship operates an advanced extrusion-3D concrete printing facility, and as part of the laboratory for structural engineering, has access to excellent research resources.

For a project funded by the Deutsche Forschungsgemeinschaft DFG (German National Science Foundation), we are looking for an enthusiastic doctoral candidate.

Your tasks

The project aims at establishing continuous fiber reinforcement and helical bar reinforcement as fundamentally understood reinforcement methods. Proof-of-concept has already been delivered in previous research; now the fundamental relations between process, matrix material, reinforcement, and structural performance need to be determined. The main tasks in the project include the development and integration of robotic equipment, a detailed study of matrix-reinforcement interactions, and the development of structural engineering models to describe behaviour and failure limits. Besides your main research task, you will also be assigned a limited number of educational and support tasks for the professorship.

Your qualifications

- Excellent graduation in Civil/Structural Engineering (M.Sc.) or similar.
- Strong background in structural concrete engineering.
- Affinity and/or experience with experimental research, the development of mechanical/robotic equipment, (robot) programming, and/or numerical modelling, are especially appreciated.
- Excellent proficiency in English, preferably also in German.

Most importantly, we look for a highly motivated candidate who feels comfortable working intensively in a tight-knit team.

We offer

We offer a 100% position as academic staff. The position will initially be limited to 3 years. Payment will be based on qualifications up to pay grade E13 TV-L.

The TU Munich and the Professorship strive to raise the proportion of women in its workforce and explicitly encourages applications from qualified women. In case of child-care responsibilities, the research project planning can be adjusted in discussion with the supervisor, to meet the needs of the candidate.

In the case of essentially reciprocal suitability, severely disabled applicants as defined SGB IX will be preferred.

*Opportunities
for Talents*

Your application and further information

Please send your application, consisting of a motivation letter and your c.v., by email to:

TUM School of Engineering and Design,
Professorship of Digital Structures with Mineral Materials,
attention of prof. dr. ir. Freek Bos
Arcisstraße 21,
80333 München,
Germany,
freek.bos@tum.de.

before 7 September 2026.

A selection of eligible candidates will be invited for an (online) interview. For any questions regarding the position, do not hesitate to contact prof. dr. ir. Freek Bos through the mentioned e-mail address.

Note on data protection:

We are pleased about your interest in the Technical University of Munich and your application for the advertised position. You have provided us with personal data with your application. Please note our data protection information in accordance with Article 13 of the General Data Protection Regulation (GDPR) on the collection and processing of personal data as part of your application, available at <https://portal.mytum.de/kompass/datenschutz/Bewerbung/>.

Hinweis zum Datenschutz:

Wir freuen uns über Ihr Interesse an der Technischen Universität München und Ihre Bewerbung für die ausgeschriebene Stelle. Sie haben uns mit Ihrer Bewerbung personenbezogene Daten übermittelt. Beachten Sie bitte hierzu unsere Datenschutzhinweise gemäß Art. 13 Datenschutz-Grundverordnung (DSGVO) zur Erhebung und Verarbeitung von personenbezogenen Daten im Rahmen Ihrer Bewerbung, abrufbar unter <https://portal.mytum.de/kompass/datenschutz/Bewerbung/>.