The mobility of people and goods is a central foundation of our modern society with increasingly global and diversely networked processes. It enables an efficient economy and represents a valuable asset that must be preserved and further developed. Mobility, especially with regard to road mobility and to road traffic, is currently confronted with global challenges, which urgently require fundamental solutions.

In the planned SFB/TRR 339, a spatially as well as temporally multidimensional, model of vehicle, tire and road surface (concrete and asphalt) will be developed and researched, taking into account the road pavements. The model combines all available and relevant information about the "road of the future" system from physical investigations and modeling as well as from informational and traffic-related data (sensor data, data models etc.). The approach enables and requires the interaction between the physical-engineering and the informational-traffic design levels. This interactive model in space and time is referred to as the digital twin of the road, subject to analysis, control and prediction of the physical road by means of common interfaces.


At the Faculty of Civil Engineering, the Institute of Construction Materials offers in Subproject A05, subject to resources being available, a project position as

**Research Associate (m/f/x)**
(subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

starting **January 1, 2022** initially to be filled by December 31, 2025, with the option of extension. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

**Tasks:** independent planning and execution of experimental work on the development and characterization of multifunctional building materials, in particular on the basis of novel mineral binders (geopolymers and alkali activated materials) with carbon fiber reinforcement; investigation of mechanical and sensory properties of novel composites as well as electrical heating of novel building materials for a tailored reaction kinetics; morphological analysis to derive structure-property relationships; evaluation of test results and further development of materials and testing methods; presentation of research results and writing scientific publications in English.

**Requirements:** very good university degree in civil engineering, mechanical engineering, materials science or another comparable engineering science or natural science; knowledge in the field of alternative binders or fiber reinforced concrete; high degree of self-reliance, involvement and team spirit; very good scientific writing and speaking skills in English.

Applications from women are particularly welcome. The same applies to people with disabilities.

Please submit your comprehensive application including the usual documents and the specification of the sub-project number A05 by **December 16, 2021** (stamped arrival date of the university central mail service applies) by mail to: **TU Dresden, Fakultät Bauingenieurwesen, Institut für Statik und Dynamik der Tragwerke, Prof. Kaliske -persönlich-, Helmholtzstr. 10, 01069 Dresden, Germany**, or via the SecureMail portal of the TU Dresden https://securemail.tu-dresden.de as a PDF document **Bewerbung_SFB_339@tu-dresden.de**. Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: https://tu-dresden.de/karriere/datenschutzhinweis