Department of Building Materials and Construction Chemistry

Faculty VI - Planning Building Environment, Institute of Civil Engineering

About this organisation

The Department of Building Materials and Construction Chemistry researches and teaches about materials, with a focus on inorganic and hybrid materials such as cement. We develop innovative technologies from the molecular to the macroscopic level. Given the specialized applications and extreme environmental conditions, our research on the ecological and economic assessment of building materials is also gaining increasing importance.

The Department of Building Materials and Construction Chemistry has developed a broad range of expertise through various research projects. This includes 3D printing, where different lightweight concretes, such as those based on expanded glass, foam, and similar materials, are being explored. Additionally, the department is investigating comparatively lightweight construction methods using so-called lost formwork or hollow walls, which require significantly less material. Apart from 3D printing, the department also focuses on other lightweight concrete construction methods, such as the development of conventionally cast, particularly lightweight concretes. In collaboration with other departments, alternative building materials, such as fungal composites, are also being researched.

Gustav-Meyer-Allee 25
13355 Berlin
Berlin
Germany
www.tu.berlin/baustoffe

Organisation type
University or higher education institution

Sector

Employees
10 up to 49

Turnover
n/a staatliche Forschungseinrichtung

Funding






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About this organisation

Main areas covered

Infrastructure

Certifications

Keywords

Memberships

Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Machines and plants, Software & databases, Materials, Tools and moulds	✓	✓	
Services & consulting Testing and trials, Validation, Simulation	✓	✓	

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Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures	✓	✓	
Functional integration Media conductivity, Material functionalisation	✓	✓	
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Environmental simulation, Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Loads & stress, Life-cycle analysis, Optimisation, Materials, Reliability validation	✓		
Plant construction & automation Plant construction, Automation technology, Robotics	✓	✓	
Recycling technologies Recycling, Upcycling	✓		

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Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing 3D printing	✓	✓	
Coating (surface engineering)			
Fibre composite technology Casting (concrete), Others	✓	✓	
Forming			
Joining			
Material property alteration Mechanical treatment, Thermochemical treatment, Thermomechanical treatment, Heat treatment	✓	✓	
Primary forming Extrusion, Casting	✓	✓	
Processing and separating			
Textile technology			

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Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
Material			
Biogenic materials			
Cellular materials (foam materials) Closed-pore, Open-pore	✓	✓	
Composites Short fibre-reinforced concrete, Textile-reinforced concrete	✓	✓	
Fibres Basalt fibres, Carbon fibres, Metal fibres, Natural fibres	✓		
Functional materials			
Metals			
Plastics			
Structural ceramics			
(Technical) textiles			

Contacts

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