SMAR 2026

Congress guide

TUDIAS
BILDUNG . SPRACHE . GEMEINSCHAFT

Technische Universität Dresden

Empa
Materials Science and Technology

CONTENT

01. PREFACE

It is our great pleasure to welcome you to the 8th International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures (SMAR 2026) in Dresden, Germany.

Over the past years, SMAR has established itself as one of the leading international forums for researchers, engineers and practitioners working in the fields of structural health monitoring, assessment, maintenance and rehabilitation of civil infrastructure. The conference provides an excellent opportunity to exchange ideas, discuss recent scientific advances and strengthen collaborations between academia and industry.

Dresden offers a particularly inspiring setting for this year's conference. With its outstanding engineering tradition, internationally renowned research institutions and numerous landmark structures, the city represents an ideal venue for scientific exchange. At the same time, the recent collapse of the Carolabrücke has highlighted the societal importance of reliable structural assessment, monitoring and resilient infrastructure management, making the topics of SMAR 2026 more relevant than ever.

The scientific program brings together keynote lectures by internationally recognized experts, 32 Mini Symposia, parallel technical sessions and numerous opportunities for discussion and networking. We sincerely hope that these days will inspire new ideas, foster collaborations and contribute to further advances in research and engineering practice.

A conference of this scale would not be possible without the commitment and support of many people. We would like to express our sincere gratitude to the Honorary Chairs, the International Scientific Committee, the Mini Symposia organizers, session chairs, reviewers, sponsors, exhibitors and all members of the Local Organizing Committee for their invaluable contributions. We also thank all authors and participants whose enthusiasm and scientific excellence make SMAR 2026 possible.

We wish you an inspiring conference, stimulating discussions and an enjoyable stay in Dresden.

Prof. Dr.-Ing. Steffen Marx
Prof. Dr. Moslem Shahverdi
Conference Chairs, SMAR 2026

Prof. Dr.-Ing. Yvonne Ciupack
Head of International Scientific Committee, SMAR 2026

02. IMPORTANT INFORMATION

Welcome to TU Dresden!

Public transport
From the Hauptbahnhof stop, use tram line 3 to the Nürnberger Platz stop, or take bus line 66 (both approx. 10-minute ride) to Fritz-Foerster-Platz, followed by a 5-minute walk to the buildings Potthoff-Bau and Beyer-Bau.

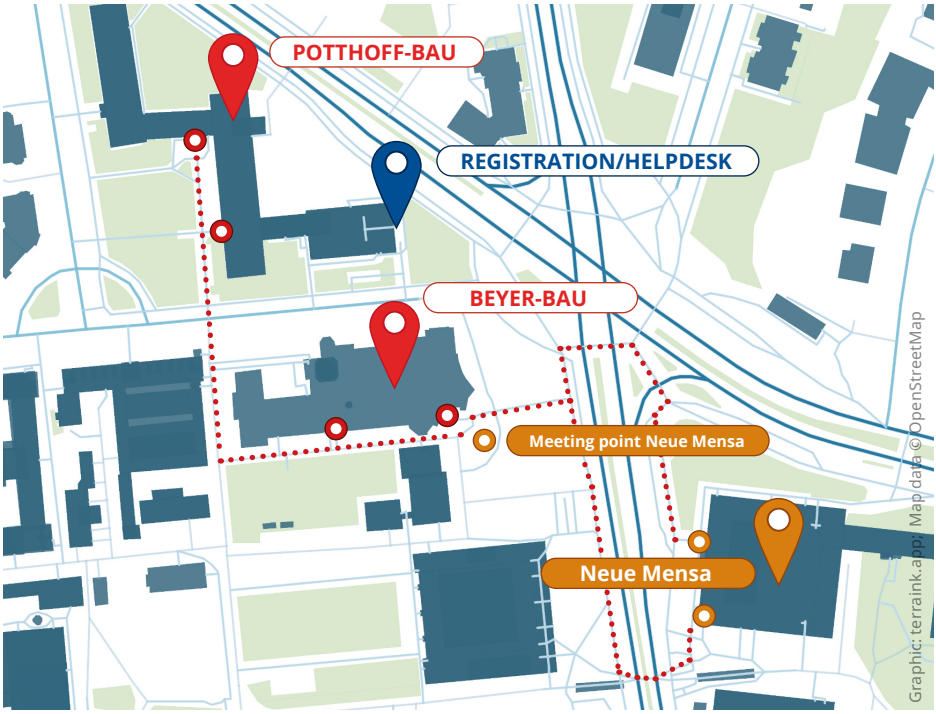
For a detailed route planning, please use the Dresdner Verkehrsbetriebe (DVB) web service.

Arriving by car
We recommend traveling by public transportation because parking in the immediate vicinity of the conference venue is very limited. If you want to use your car, please set your GPS destination to "Hettnerstraße 1, 01069 Dresden." Please note that direct vehicular access to the TU Dresden campus is not permitted.

Location plan

The map highlights the three key locations used throughout the event. Sessions and conference activities take place in two buildings on campus:

- **Potthoff-Bau**
  (rooms designated as POT + no.)
- **Beyer-Bau**
  (rooms designated as BEY + no.)



Wi-Fi connection

Eduroam Wi-Fi is available across the conference venue for attendees with an active account from their home institution. All other participants will receive guest Wi-Fi log-in details upon registration. Search for the VPN/WEB wireless network and connect to it. If this network is not found, access is not possible. Open your browser and log in with the credentials you have obtained. You also can scan the QR code on your mobile device:

- SSID: VPN/WEB
- User name:
  * from registration
- Password:
  * from registration

The wireless network provides public internet access only. For outgoing e-mails via SMTP, please use Port 587. Please note that data transmission on the Wi-Fi is unencrypted, so using your own encryption systems (e.g., SSH, HTTPS, VPN) is strongly advised. Additionally, local hosting (web servers) and peer-to-peer file/folder sharing with other users on the network are not supported.

Conference4me app

To get all information related to SMAR 2026, we recommend the use of the mobile app Conference4me.

It provides full conference program, session schedules and venue details at your fingertips. You can search for individual sessions, chairs or lecturers, locations, etc.

How to get started

Search in your app store for **Conference4me** – available on iOS and Android – or simply scan the QR code.

Food service

Catering and refreshment options:

- Coffee breaks: Beyer-Bau, rooms E26, E39 and 126
- Lunch: cafeteria “Neue Mensa”

The cafeteria “Neue Mensa” is located just a 2- to 3-minute walk from BEY and POT, crossing Bergstraße at the traffic lights or via the pedestrian and cyclist bridge. On Wednesday, we offer guidance for anyone who would like help finding the way. Please join our colleagues at 12:35 at the meeting points marked on the map.

Scan the QR code for today's menu. Once you've made your choice, please queue at the corresponding serving station. Please note that the meal voucher is valid for:

- one main course +
- one beverage +
- one dessert.

Salads from the salad bar are not covered by the voucher and must be paid for separately.

Don't forget to bring your **name badge** and **meal vouchers** with you. Lost meal vouchers cannot be replaced.

Certificate

After the event, participants will be able to download their attendance confirmation letters from their ConfTool account.

Need help?

If you have any questions or need assistance during the conference, please do not hesitate to contact a member of the organizing team. They can be identified by a blue lanyard attachment.

Photo: Stefan Gröschel

Beyer-Bau | Photo: André Wirsig

Parallel event: Carbonbetontage

On August 27, the symposium "Carbonbetontage" (organized by C^3 – Carbon Concrete Composite e.V.) will take place as a parallel event in the Beyer-Bau. Participants of both events will join the shared evening reception, offering an excellent opportunity for networking, interdisciplinary discussions, and cross-industry exchange.

Photo: Stefan Gröschel

03. EVENING EVENT

We cordially invite you to our conference evening event on August 27, 2026:

- International Congress Center Dresden
- Devrientstraße 10–12, 01067 Dresden
- Start: 18:30
- End: 23:00

The SMAR 2026 evening event starts with a welcome sparkling wine reception, followed by delicious food, pleasant music, and wonderful opportunities to network and connect with fellow attendees.

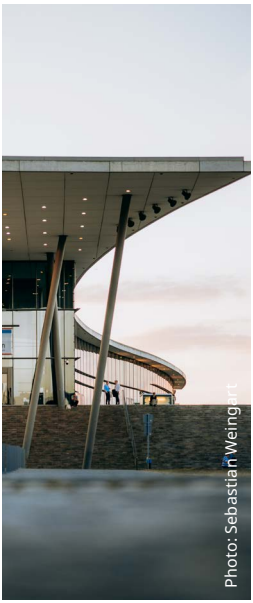
Your **conference name badge** is strictly required for admission. A cloakroom will be available on site.

Getting to the venue

The International Congress Center Dresden is easily accessible by public transport from both conference buildings Beyer-Bau and Potthoff-Bau. Simply walk to the nearby Nürnberger Platz tram stop and take tram line 8 directly to stop Kongresszentrum / Haus der Presse. Alternatively, you can take tram line 3 to stop Postplatz and transfer there to line 8.

From the final stop, it is just a short 5-minute walk to the venue entrance.

For a detailed route planning, please use the Dresdner Verkehrsbetriebe (DVB) web service.



International Congress Center Dresden | Graphic: www.terraink.app; Map data © OpenStreetMap

The nerves of your structure

Distributed fiber-optic sensing solutions for energy, geotechnics and smart infrastructure

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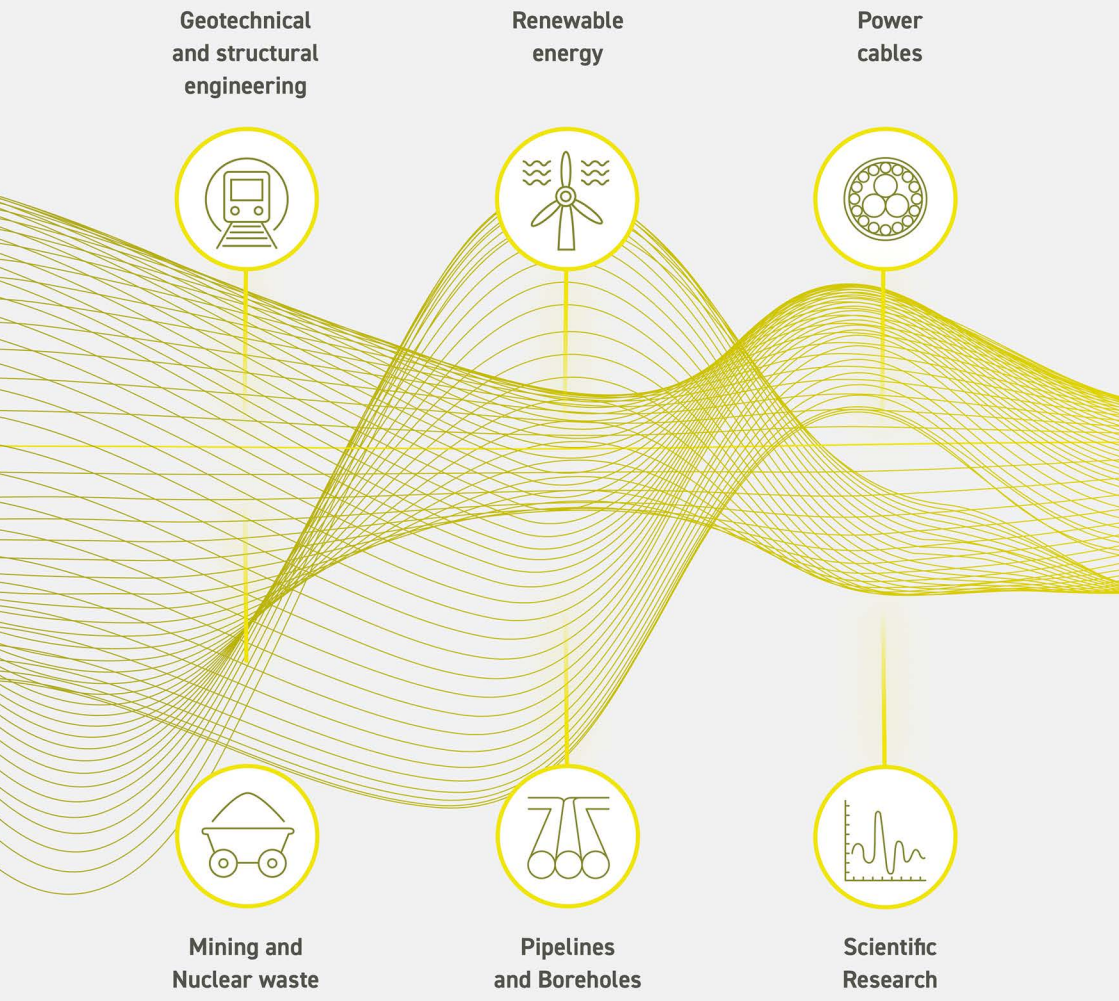

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04. PROGRAM OVERVIEW
WEDNESDAY, AUGUST 26

09:00 10:30	**Opening Session** Chairs: Yvonne Ciupack, Steffen Marx				
10:30 11:00	**Coffee Break**				
11:00 12:30	**Keynote Lectures** 1 ★Digital twin-enabled SHM for real-time performance assessment of smart structures ★Transforming structural fire safety with intelligent sensing for advanced materials				
12:30 14:00	**Lunch Break**				
13:15 13:45	**Supplementary Lecture** during lunch break ★The collapse of the Carola Bridge – a tragic individual case? | Dr.-Ing. Gregor Schacht				
14:00 16:00	**BEY 138**	**BEY 117**	**BEY E40**	**BEY E17**	**POT 112**
	MS 03-1	**MS 04**	**MS 05-1**	**MS 08-1**	**MS 10-1**
	Railway track monitoring – an essential basis for the optimization of railway infrastructure	Load testing of bridges	Research on shape memory alloys in Germany	Hybrid construction and strengthening with wire arc additive manufacturing	Advances and applications of vibration-based structural health monitoring
16:00 16:30	**Coffee Break**				
16:30 18:00	**BEY 138**	**BEY E40**	**BEY E17**	**POT 112**	
	MS 03-2	**MS 05-2**	**MS 08-2**	**MS 10-2**	
	Railway track monitoring – an essential basis for the optimization of railway infrastructure	Research on shape memory alloys in Germany	Hybrid construction and strengthening with wire arc additive manufacturing	Advances and applications of vibration-based structural health monitoring	

POT 081

BEY E39 – E26 – 126

POT 081

| Prof. Zahra Sharif Khodaei
| Prof. Mark F. Green

Neue Mensa

POT 081

POT 51	BEY 245	BEY 137	BEY 127	POT 151
MS 13-1	MS 22-1	MS 25	MS 26-1	MS 29
Intelligent digital methods for extending the service life of structures beyond 100 years	Advances in fiber optic sensing solutions for infrastructure, geotechnics, and earth sciences	Advancements in risk, reliability, and resilience assessment of existing structures	Retrofitting, strengthening and strategies to extend the service live for concrete and masonry structures	Distributed acoustic sensing (DAS) in civil engineering

BEY E39 – E26 – 126

POT 51	BEY 245	BEY 127	BEY 117	BEY 137
MS 13-2	MS 20	MS 26-2	MS 28	Parallel Session 4
Intelligent digital methods for extending the service life of structures beyond 100 years	Earth observation and other remote sensing methods for infrastructure monitoring	Retrofitting, strengthening and strategies to extend the service life for concrete and masonry structures	Impact of climate change on infrastructure	Structural behavior and performance of concrete and hybrid structures

THURSDAY, AUGUST 27

09:00 10:30	**Keynote Lectures** 2 ★Monitoring, assessment and rehabilitation of road infrastructure – A precondition ★The evolution of structural health monitoring from qualitative observation to		
10:30 11:00	**Coffee Break**		
11:00 – 12:30	**BEY E17**	**BEY 245**	**POT 112**
	MS 02-1	**MS 06-1**	**MS 10-3**
	Innovative bonded solutions for steel structure repair and retrofit	Monitoring, assessment and design of lightweight metal façades	Advances and applications of vibration-based structural health monitoring
12:30 14:00	**Lunch Break**		
14:00 15:30	**BEY E17**	**BEY 245**	**POT 112**
	MS 02-2	**MS 06-2**	**MS 12-1**
	Innovative bonded solutions for steel structure repair and retrofit	Monitoring, assessment and design of lightweight metal façades	Advanced fatigue assessment and life design of steel structures
15:30 16:00	**Coffee Break**		
16:00 17:30	**BEY E17**	**POT 112**	**POT 51**
	MS 09	**MS 12-2**	**MS 18/19-2**
	Monitoring of structural health, noise and vibration of urban transportation infrastructure, and its assessment planning	Advanced fatigue assessment and life design of steel structures	Advances in monitoring, assessment and rehabilitation of timber structures
18:30 23:00	**Gala Dinner**		

for a sustainable future | Jürg Röthlisberger
digital twin | Prof. Michael D. Todd

POT 081

BEY E39 – E26 – 126

POT 51	BEY 117	BEY 127	BEY E40
MS 13-3	MS 16-1	MS 26-3	MS 27-1
Intelligent digital methods for extending the service life of structures beyond 100 years	Carbon-negative compression dominant structures for decarbonized and deconstructable concrete buildings	Retrofitting, strengthening and strategies to extend the service life for concrete and masonry structures	Machine learning methodologies for structural health monitoring

Neue Mensa

POT 117	POT 51	BEY 127	BEY E40
MS 16-2	MS 18/19-1	MS 23-1	MS 27-2
Carbon-negative compression dominant structures for decarbonized and deconstructable concrete buildings	Advances in monitoring, assessment and rehabilitation of timber structures	Considering defects and damage effects on the safety of civil engineering structures	Machine learning methodologies for structural health monitoring

BEY E39 – E26 – 126

BEY 127	BEY E40	BEY 117	BEY 245
MS 23-2	MS 27-3	MS 31	Parallel Session 2
Considering defects and damage effects on the safety of civil engineering structures	Machine learning methodologies for structural health monitoring	Wave-based monitoring techniques for structural engineering	Digital methods for structural assessment

International Congress Center Dresden

FRIDAY, AUGUST 28

09:00 10:30	**Keynote Lectures** 3 ★Vibration-based SHM of bridges: experiences at Politecnico di Milano ★Preserving structures with carbon-reinforced concrete: today and tomorrow			
10:30 11:00	**Coffee Break**			
11:00 12:30	**POT 151**	**BEY E40**	**BEY 127**	**BEY E17**
	MS 07-1	**MS 14**	**Parallel Session 1**	**MS 21**
	Distributed fiber optic strain sensing for bridge structural health monitoring	Post-disaster bridge assessment – an integrated approach from monitoring to number crunching	Structural health monitoring and damage detection	Bio-based materials for seismic retrofit of existing structures – enhancing structural performance and environmental sustainability
12:30 14:00	**Lunch Break**			
14:00 16:00	**BEY E40**	**POT 151**	**BEY E17**	**BEY 117**
	MS 01	**MS 07-2**	**MS 11**	**MS 15**
	Structural health monitoring and assessment of aging railway infrastructures	Distributed fiber optic strain sensing for bridge structural health monitoring	Monitoring of corrosion relevant parameters	Data-driven monitoring, modelling and assessment strategies for resilient infrastructure
16:00 16:30	**Coffee Break**			
16:30 18:00	**Closing Ceremony** Chairs: Yvonne Ciupack, Steffen Marx			

| Prof. Carmelo Gentile
| Prof. Juliane Wagner

POT 081

BEY E39 – E26 – 126

POT 51	BEY 138	BEY 117	BEY 245	POT 112
MS 24-1	MS 30-1	MS 32	Parallel Session 3	Parallel Session 5
Non-destructive testing and monitoring of timber structures	Video-based and imaging techniques for structural monitoring	Crowdsourced and indirect approaches to structural health monitoring	Advanced cementitious and composite materials	Structural strengthening, retrofit and structural resilience

Neue Mensa

BEY 127	BEY 245	POT 51	BEY 138
MS 17	MS 22-2	MS 24-2	MS 30-2
Distributed fiber optical sensing (DFOS) in structural engineering research	Advances in fiber optic sensing solutions for infrastructure, geotechnics, and earth sciences	Non-destructive testing and monitoring of timber structures	Video-based and imaging techniques for structural monitoring

BEY E39 – E26 – 126

POT 081

05. KEYNOTE SPEAKERS

KS 01 | August 26
11:00 – 11:45
POT 081

Keynote 01: Digital twin-enabled SHM for real-time performance assessment of smart structures

Prof. Dr. Zahra Sharif Khodaei, Imperial College London, UK

Zahra Sharif Khodaei is Professor of Aerospace Structural Durability and Health Monitoring at Imperial College and co-founder of its Structural Integrity and Health Monitoring Group. Her research advances digital twins for the lifecycle health management of engineering assets by integrating physics-based models with load, displacement and damage data from piezoelectric, fiber-optic and printed sensors. She leads research on diagnosis, prognosis and decision support for composite aerospace and space structures and collaborates, e.g., with Rolls-Royce, ESA and EU research partners.

KS 01 | August 26
11:45 – 12:30
POT 081

Keynote 02: Transforming structural fire safety with intelligent sensing for advanced materials

Prof. Dr. Mark F. Green, Queen's University, Kingston, Canada

Mark Green is a Professor in Civil Engineering at Queen's University. For over 30 years, he has been researching applications of fiber-reinforced polymers (FRPs) in structures and, more specifically, he is a leading international expert in the fire performance of structures strengthened or reinforced with FRPs. His research expertise also includes advanced sensing techniques. He is NSERC Scholar in Residence with responsibility for providing the Natural Sciences and Engineering Research Council of Canada (NSERC) with unique and novel viewpoints from the perspective of an indigenous researcher.

KS 02 | August 27
09:00 – 09:45
POT 081

Keynote 03: Monitoring, assessment and rehabilitation of road infrastructure – a precondition for a sustainable future

Jürg Röthlisberger, Director of the Federal Roads Office (FEDRO), Switzerland

Following his comprehensive education as a civil engineer, he worked in the industrial construction and civil engineering industry. He subsequently joined construction companies and a civil engineering company specializing in maintenance management, where he was a member of the management board. He joined FEDRO in 1997 with the aim of taking the lead role in organizing and implementing the transfer of Switzerland's motorways from the cantons to the federal government. Therefore he was appointed Vice Director and Head of the Infrastructure Division. He has been Director of FEDRO since 2015.

KS 02 | August 27
09:45 – 10:30
POT 081

Keynote 04: The evolution of structural health monitoring from qualitative observation to digital twin

Michael Todd, Chair of the Department of Structural Engineering at University of California San Diego, USA

Michael Todd started his academic career at Duke University. He was a staff research engineer and Section Head at the United States Naval Research Laboratory in the Fiber Optic Smart Structures Section. Later, he joined the Structural Engineering Department at the University of California, where he currently is Distinguished Professor and Chair of Structural Engineering. He has published over 550 papers in structural health monitoring and dynamics, won two lifetime achievement awards and is an ASME and SEM Fellow. He is the Editor Emeritus of Structural Health Monitoring: An International Journal.

KS 03 | August 28
09:00 – 09:45
POT 081

Keynote 05: Vibration-based SHM of bridges: experiences at Politecnico di Milano

Carmelo Gentile, Politecnico di Milano, Milan, Italy

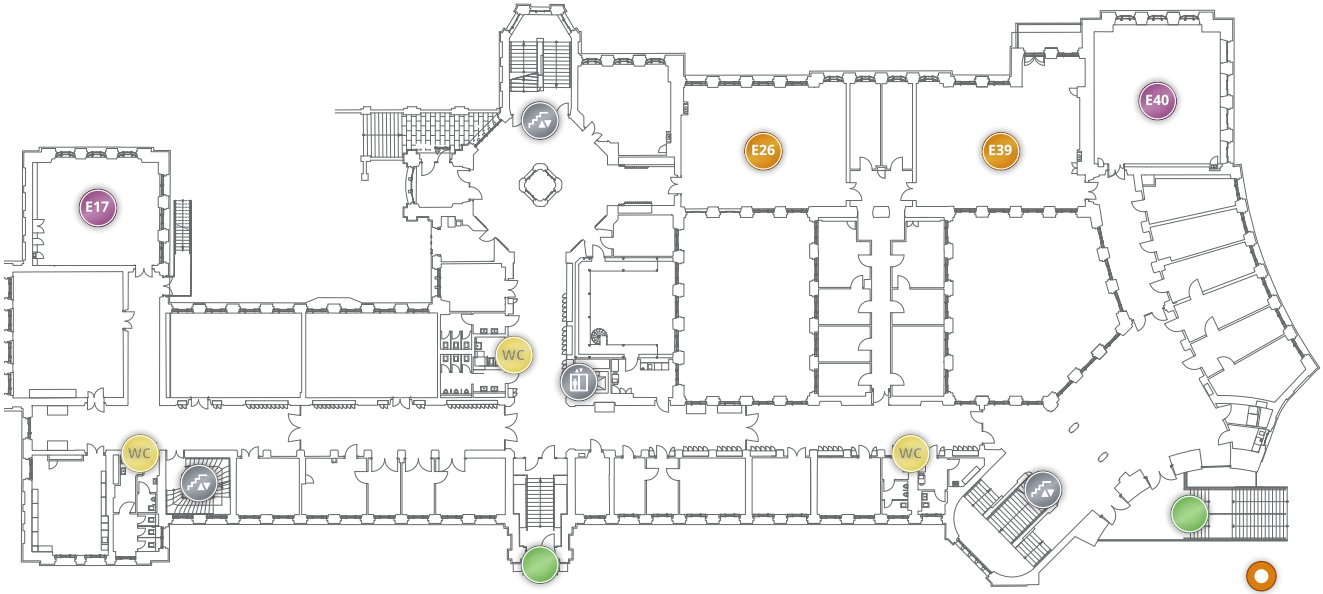
Carmelo Gentile is author of more than 300 scientific papers in high impact international journals and proceedings of internationally recognized conferences. He was a member of the Scientific Committees of the main international conferences on experimental and structural dynamics, invited as keynote speaker several times, and co-chair of the 3rd and 10th IOMAC conferences, the 4th, 10th and 12th conference on Experimental Vibration Analysis for Civil Engineering Structures. He is scientific responsible for the structural monitoring of the Milan Cathedral and several bridges and historic buildings.

KS 03 | August 28
09:45 – 10:30
POT 081

Keynote 06: Preserving structures with carbon-reinforced concrete: today and tomorrow

Juliane Wagner, Chair of Building Structures, TU Berlin, Germany

Juliane Wagner studied civil engineering at TU Dresden. In 2020, she completed her doctoral dissertation at the Institute of Concrete Structures, focusing on carbon-reinforced concrete (CRC). She then joined CARBOCON GMBH until the end of 2025, first as project and team manager and later as authorized officer. During this time, she contributed to the implementation and assessment of numerous construction projects involving new buildings and the strengthening of existing structures using CRC. Since March 2026, she has been a professor at TU Berlin and heads the Chair of Building Structures.

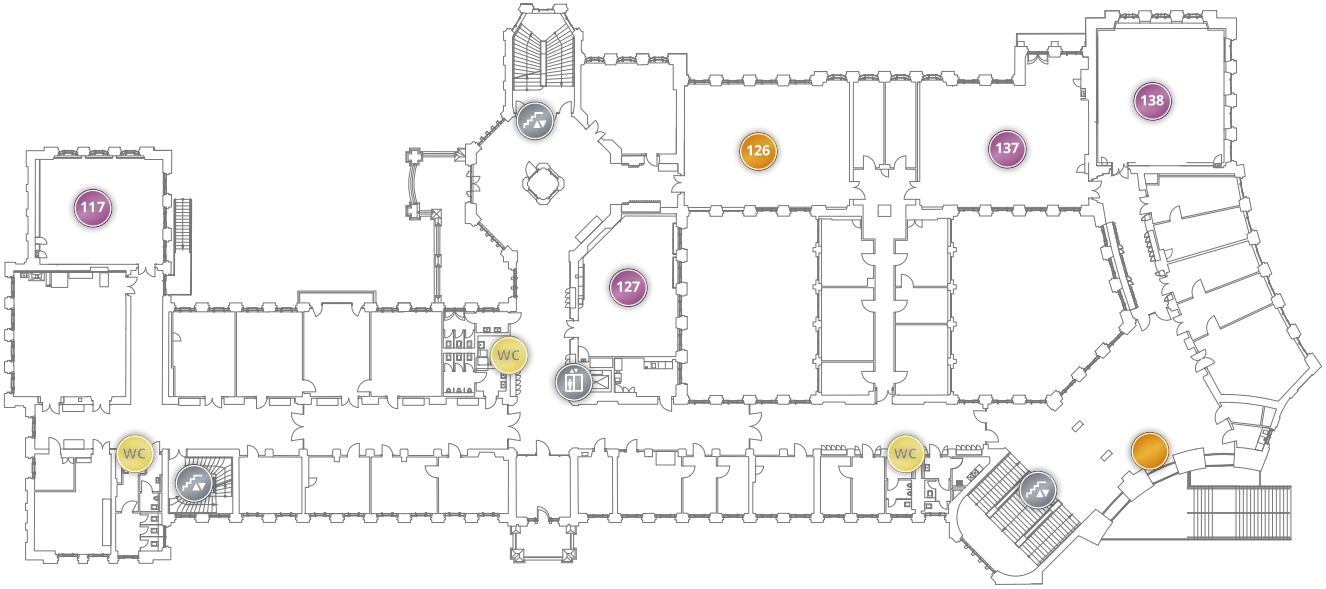


BEY | BEYER-BAU

FLOOR 0

Meeting point Neue Mensa
Elevator
Stairs

Registration | Helpdesk
Exhibition | Catering
Sessions
WC
Entrance



BEY | BEYER-BAU

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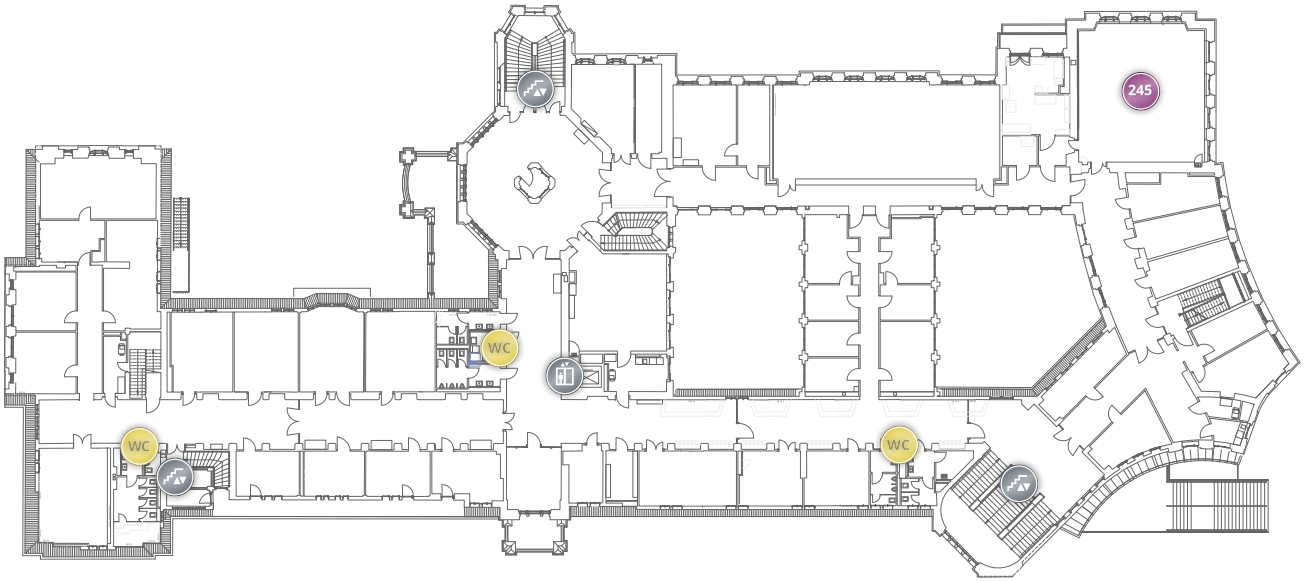
- Elevator
- Stairs



BEY | BEYER-BAU

FLOOR 2

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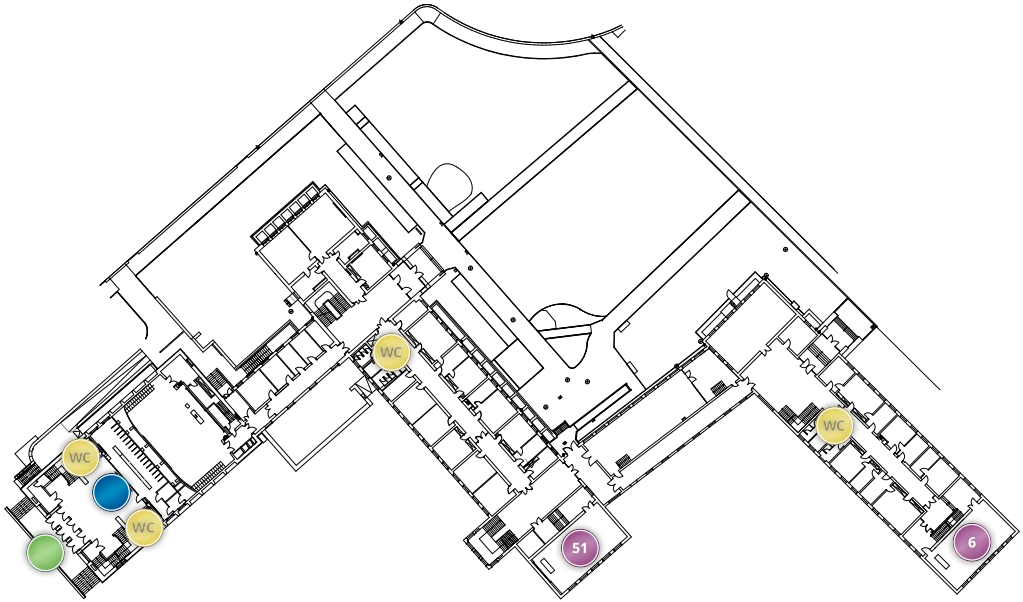

POT | POTTHOFF-BAU

FLOOR 0

- Registration | Helpdesk
- Exhibition | Catering
- Sessions
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- Stairs

POT | POTTHOFF-BAU

FLOOR 1

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07. MINI SYMPOSIA

MS 01 Structural health monitoring and assessment of aging railway infrastructures

Organizers: **Room: BEY E40**

- Chao Wang (Luleå University of Technology, Sweden)
- Zhanchong Shi (Politecnico di Milano, Italy)
- Jaime Gonzalez-Libreros (Luleå University of Technology, Sweden)
- Gabriel Sas (Luleå University of Technology, Romania)

MS 02 Innovative bonded solutions for steel structure repair and retrofit

Organizers: **Room: BEY E17**

- Yvonne Ciupack (Department of Steel Construction, TU Darmstadt, Germany)
- Björn Abeln (Institute of Steel Construction, RWTH Aachen, Germany)
- Matthias Albiez (Steel and Lightweight Structures, KIT Karlsruhe, Germany)
- Angelo Savio Calabrese (Department of Architecture, Built Environment and Construction Engineering, Politecnico di Milano, Italy)
- Pierluigi Colombi (Department of Architecture, Built Environment and Construction Engineering, Politecnico di Milano, Italy)
- Elyas Ghafoori (Institute for Steel Construction, LU Hannover, Germany)
- Elisabeth Stammen (Institute of Joining and Welding, TU Braunschweig, Germany)

MS 03 Railway track monitoring – an essential basis for the optimization of railway infrastructure

Organizers: **Room: BEY 138**

- Marc Wenner (MKP GmbH, Weimar, Germany)
- Günther Grunert (DB InfraGO AG, Germany)

MS 04 Load testing of bridges

Organizers: **Room: BEY 117**

- Gregor Schacht (MKP GmbH, Dresden, Germany)
- Oliver Mosig (MKP GmbH, Dresden, Germany)
- Eva Lantsoght (Universidad San Francisco de Quito, Ecuador)

MS 05 Research on shape memory alloys in Germany

Organizers: **Room: BEY E40**

- Elyas Ghafoori (Institute for Steel Construction, LU Hannover, Germany)
- Thomas Niendorf (Institute of Materials Engineering, University Kassel, Germany)
- Hans Jürgen Maier (Materials Science, LU Hannover, Germany)
- Anja Weidner (Institute of Materials Engineering, TU Bergakademie Freiberg, Germany)
- Philipp Krooß (Institute of Materials Engineering, University of Kassel, Germany)

MS 06 Monitoring, assessment and design of lightweight metal façades

Organizers: **Room: BEY 245**

- Felicitas Rädel (Department of Steel Construction, TU Darmstadt, Germany)
- Zbigniew Pozorski (Poznan University of Technology, Poland)
- Markus Kuhnhenne (Institute of Steel Construction, RWTH Aachen, Germany)

MS 07 Distributed fiber optic strain sensing for bridge structural health monitoring

Organizers: **Room: POT 151**

- Bertram Richter (Institute of Concrete Structures, TU Dresden, Germany)
- Steffen Marx (Institute of Concrete Structures, TU Dresden, Germany)

MS 08 Hybrid construction and strengthening with wire arc additive manufacturing

Organizers: **Room: BEY E17**

- Yvonne Ciupack (Department of Steel Construction, TU Darmstadt, Germany)
- Leroy Gardner (Department of Civil and Environmental Engineering, Imperial College London, UK)
- Elyas Ghafoori (Institute for Steel Construction, LU Hannover, Germany)
- Vittoria Laghi (Department of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna, Italy)
- Vlad Silvestru (Steel and Composite Structures, ETH Zurich, Switzerland)

MS 09 Monitoring of structural health, noise and vibration of urban transportation infrastructure, and its assessment planning

Organizer: **Room: BEY E17**

- Duo Liu (Chair of Railway Track Engineering, TU Dresden, Germany)

MS 10 Advances and applications of vibration-based structural health monitoring

Organizers: **Room: POT 112**

- Álvaro Cunha (University of Porto, Portugal)
- Carlos Moutinho (University of Porto, Portugal)
- Sérgio Pereira (University of Porto, Portugal)

MS 11 Monitoring of corrosion-relevant parameters

Organizers: **Room: BEY E17**

- Rebecca Achenbach (Institute of Building Materials Research, RWTH Aachen University, Germany)
- Sylvia Keßler (Helmut-Schmidt-Universität – Universität der Bundeswehr Hamburg, Germany)
- Jörg Harnisch (FH Münster, Germany)

MS 12 Advanced fatigue assessment and life design of steel structures

Organizers: **Room: POT 112**

- Helen Bartsch (Institute of Steel Construction, RWTH Aachen, Germany)
- Antti Ahola (Steel Structures, LUT University, Finland)

MS 13 Intelligent digital methods for extending the service life of structures beyond 100 years

Organizers: **Room: POT 51**

- Chongjie Kang (Institute of Concrete Structures, TU Dresden, Germany)
- Steffen Marx (Institute of Concrete Structures, TU Dresden, Germany)

MS 14 Post-disaster bridge assessment – an integrated approach from monitoring to number crunching

Organizers: **Room: BEY E40**

- Michael Polter (Institute of Construction Informatics, TU Dresden, Germany)
- Karsten Menzel (Institute of Construction Informatics, TU Dresden, Germany)
- Tobias Mansperger (Leonhardt, Andrä und Partner Beratende Ingenieure VBI AG, Germany)

MS 15 Data-driven monitoring, modelling and assessment strategies for resilient infrastructure

Organizers: **Room: BEY 117**

- Mohammad Shamim Miah (Graz University of Technology, Austria)
- Md Jihad Miah (University of Brighton, UK)
- Subhra Majhi (Curtin University, Australia)
- Humera Mughal (Prince Sultan University, Saudi Arabia)

MS 16 Carbon-negative compression dominant structures for decarbonized and deconstructable concrete buildings

Organizers: **Room: BEY 117**

- Saim Raza (Empa, Swiss Federal Laboratories of Materials Science and Technology, Switzerland)
- Moslem Shahverdi (Empa, Swiss Federal Laboratories of Materials Science and Technology, Switzerland)
- Stijn Matthys (Ghent University, Belgium)

MS 17 Distributed fiber optical sensing (DFOS) in structural engineering research

Organizers: **Room: BEY 127**

- Yasmin Lemcherreq (Empa, Swiss Federal Laboratories of Materials Science and Technology, Switzerland)
- Christoph Czaderski (Empa, Swiss Federal Laboratories of Materials Science and Technology, Switzerland)

MS 18/19 Advances in monitoring, assessment and rehabilitation of timber structures

Organizers (Part 1): **Room: POT 51**

- Robert Jockwer (TU Dresden, Germany)
- Pedro Palma (Empa, Swiss Federal Laboratories of Materials Science and Technology, Switzerland)

Organizers (Part 2): **Room: POT 51**

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MS 20 Earth observation and other remote sensing methods for infrastructure monitoring

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MS 21 Bio-based materials for seismic retrofit of existing structures – enhancing structural performance and environmental sustainability

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MS 22 Advances in fiber optic sensing solutions for infrastructure, geotechnics, and earth sciences

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MS 24 Non-destructive testing and monitoring of timber structures

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- Vittoria Borghese (TNO, Netherlands)
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MS 25 Advancements in risk, reliability, and resilience assessment of existing structures

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- Abdalla Alhashmi (Dalhousie University, Canada)

MS 26 Retrofitting, strengthening and strategies to extend the service life for concrete and masonry structures

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MS 27 Machine learning methodologies for structural health monitoring

Organizers: **Room: BEY E40**

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- Panagiotis Martakis (irmos technologies AG, Switzerland)
- Anno Christian Dederichs (irmos technologies AG, Switzerland)

MS 28 Impact of climate change on infrastructure

Organizer: **Room: BEY 117**

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MS 29 Distributed acoustic sensing (DAS) in civil engineering

Organizers: **Room: POT 51**

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MS 30 Video-based and imaging techniques for structural monitoring

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MS 31 Wave-based monitoring techniques for structural engineering

Organizers: **Room: BEY 117**

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- Lars Schubert (Fraunhofer IKTS, Dresden, Germany)
- Max Fiedler (MKP GmbH, Dresden, Germany)

MS 32 Crowdsourced and indirect approaches to structural health monitoring

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Dresden, Germany
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TUD|IMB Institut für Massivbau

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Institute of Concrete Structures | Technische Universität Dresden | Germany

TUD|IMB Institut für Massivbau

The Institute of Concrete Structures (IMB) includes the Chair of Concrete Structures and two Endowed Chairs. Together with the Otto Mohr Laboratory, which is affiliated to the IMB, more than 70 employees work at IMB. We conduct experimental and theoretical research on various topics in nine research groups. Our key areas are:

- predictive structural health monitoring and innovative measurement methods,
- material-appropriate and sustainable structural design,
- basic research and R&D on textile- and carbon-reinforced concrete,
- digitalization and AI in construction,
- structural behavior under impact, multi-axial and cyclic loading scenarios.

The IMB offers courses in around 20 modules for diploma, master's and bachelor's degree students. For more than 30 years, we have been hosting the Dresden Bridge Building Symposium, which attracts more than 1,600 attendees. With SMAR 2026, we are making our debut on the international stage.

www.tu-dresden.de/massivbau

Otto Mohr Laboratory | Technische Universität Dresden | Germany

TUD|OML Otto-Mohr-Laboratorium

The Otto Mohr Laboratory (OML) is one of the most modern and best equipped experimental facilities in the field of construction in Saxony. The equipment and the constant expansion of the portfolio guarantee the highest standards in testing and experimentation. OML offers a wide range of services on different scales in the whole range of destructive and non-destructive examination of

- building materials,
- structural components and
- complete structures.

We carry out expert evaluations based on in-situ investigations and load tests on new, retrofitted, and listed buildings and bridge structures. The laboratory has extensive expertise in analyzing existing bridges in the context of the German recalculation guideline and in addressing stress corrosion cracking.

www.tu-dresden.de/bu/bauingenieurwesen/imb/labor

Department of Steel Construction | TU Darmstadt | Germany

The Department of Steel Construction is part of the Institute for Steel Construction and Materials Mechanics. Our research and teaching cover all aspects of steel construction from the theoretical principles of stability and plasticity to structural design, detailing and innovative construction technologies. Research combines experimental investigations, numerical modeling and close collaboration with industry to develop safe, efficient and sustainable structural solutions. Current research activities focus on:

- sandwich structures and lightweight steel construction – structural behavior, design concepts and innovative applications of sandwich elements,
- steel connections and joints – behavior and design of welded, bolted and adhesively bonded connections,
- wire arc additive manufacturing (WAAM) – additive manufacturing of steel components, hybrid structures and digital fabrication processes.

We offer a comprehensive range of bachelor's and master's courses. Research findings are continuously integrated into lectures and close cooperation with industry.

www.stahlbau.tu-darmstadt.de

Institute for Steel Construction | Leibniz University Hannover | Germany

The Institute for Steel Construction (IfS) comprises a team of more than 25 employees working in the field of steel and lightweight structures. Experimental and numerical investigations form the basis of their fundamental and application-oriented research. The main aim of the research is to improve sustainability in construction toward Net Zero 2050. The institute focuses on various research topics:

- advanced structural materials – memory steel, structural adhesive and carbon fiber reinforced polymer (CFRP),
- support structures for bridges and wind turbines – welded, bolted and grouted connections,
- automated/robotic/additive construction – wire arc additive manufacturing (WAAM),
- data-driven models and optimization – finite element modeling, optimization & scientific machine learning.

The IfS offers courses in several modules ranging from conventional steel construction and structural engineering to fatigue and fracture mechanics.

www.stahlbau.uni-hannover.de

Institute of Building Materials Research | RWTH Aachen University | Germany

Since its founding in 1948, the Institute for Building Materials Research (ibac) has developed into an internationally leading and recognized platform in the field of building materials research. It combines the fields of structural maintenance and polymer composites and construction materials. ibac has different laboratories for analytics and mechanical and electrochemical testing facilities. Its activities range from applied research and development – often in collaboration with industry partners – to fundamental scientific research. The main areas of focus are:

- preservation of historic buildings,
- new methods and materials in conservation and repair,
- corrosion of steel in concrete,
- bio-based construction materials,
- microstructure and modelling,
- innovative binders and concrete technology.

www.ibac-cp.rwth-aachen.de/

Institute of Steel Construction | RWTH Aachen University | Germany

The Institute of Steel Construction (STB) comprises the Chair for Steel and Lightweight Metal Construction as well as the teaching and research field on Sustainable Metal Building Envelopes. Together with the Center for Wind and Earthquake Engineering and the Centre for Metallic Design, more than 70 staff members are currently engaged in research, conducting fundamental work into the development of standards and products, project-related approvals, general building inspections and technical advice on planning and design in the fields of:

- traditional steel construction incl. stability, material mechanics, reliability & robustness,
- composite construction, structural timber and glass construction,
- lightweight metal construction and sustainability,
- structural dynamics, and wind engineering,
- innovative, cross-material joining techniques, such as structural adhesive bonding.

www.stb.rwth-aachen.de

Chair of Timber Engineering | Technische Universität Dresden | Germany

The Chair of Timber Engineering belongs to the Institute of Steel and Timber Construction (ISH) at the Faculty of Civil Engineering of TU Dresden. The Chair represents the field of timber construction in teaching and research and currently has 8 employees. The research at the Chair of Timber Engineering covers:

- timber engineering and design and optimization of structural systems,
- development of high-performance, durable, and reliable connection technologies for timber and hybrid construction,
- sustainable development and preservation of timber structures, and
- environmental assessment of existing timber structures and the transition to a circular construction economy.

We offer courses in about 9 modules, ranging from renewable resources, forestry, and timber engineering to conceptual design, fiber-reinforced polymers and hybrid structures.

www.holzbau.bau.tu-dresden.de

Leibniz Institute of Polymer Research Dresden | Dresden | Germany

The Leibniz Institute of Polymer Research Dresden (IPF) is a leading research institute in polymer materials science and a member of the Leibniz Association. With around 450 researchers, technicians, and support staff, it plays a vital role in DRESDEN-concept. Research at the IPF is structured into five complementary divisions:

- theory of polymers,
- macromolecular chemistry,
- physical chemistry and physics of polymers,
- polymer materials engineering, and
- polymer biomaterials science.

IPF integrates fundamental and application-oriented research on advanced polymer-based materials and systems, enabling innovations in health, sustainability, and information technologies.

www.ipfdd.de

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