

# engineered transparency

INTERNATIONAL CONFERENCE AT GLASSTEC

21 – 22 October 2014

# GLASS FACADE ENERGY



TECHNISCHE  
UNIVERSITÄT  
DARMSTADT



TECHNISCHE  
UNIVERSITÄT  
DRESDEN

## glasstec

INTERNATIONAL TRADE FAIR FOR GLASS  
PRODUCTION • PROCESSING • PRODUCTS

21 – 24 OCTOBER 2014



Messe  
Düsseldorf



# HIGHLIGHTS

// **DIE SONDERSCHAU „GLASS TECHNOLOGY LIVE“  
MIT FACHSYMPOSIUM**

// **FÜHRUNGEN „GLASS TECHNOLOGY LIVE“**

// **FASSADEN-CENTER MIT KOMPETENZCENTER GLAS + FASSADE**

## **GLASSTEC**

Die Weltleitmesse glasstec bietet ein einzigartiges Themenspektrum an aktuellem Know-How aus Theorie und Praxis. Der besondere Schwerpunkt ist der Bereich Fassade mit neuen Impulsen zu Energieeffizienz und Nachhaltigkeit.

## **GLASS TECHNOLOGY LIVE**

Die Themenvielfalt der Sonderschau „glass technology live“ in Halle 11 **unter dem Motto „Intelligent Glass“** reicht unter anderem von zukunftsweisenden Fassadenkonstruktionen und innovativen Glasprodukten bis hin zu Neuheiten in Design und Ästhetik. Optimal ergänzt wird diese durch das Fachsymposium in Kooperation mit dem Forum Glastechnik VDMA, der Universität Stuttgart, der HVG-DGG, dem Bundesinnungsverband des Glaserhandwerks und dem Bundesverband Flachglas.

## **FASSADEN-CENTER MIT KOMPETENZCENTER GLAS + FASSADE**

Ausstellerpräsentationen, Mock-ups sowie Informationen von Institutionen und Verbänden in Halle 11.



**// THE SPECIAL EXHIBITION „GLASS TECHNOLOGY LIVE“  
WITH SYMPOSIUM**

**// GUIDED TOURS „GLASS TECHNOLOGY LIVE“**

**// FAÇADE-CENTRE WITH COMPETENCY CENTRE GLASS + FAÇADE**

#### **GLASSTEC**

*The leading fair offers an unique range of topics and combines theory and practice. The main focus is on the matter of facades with new impulses to energy efficiency and sustainability.*

#### **GLASS TECHNOLOGY LIVE**

*The wide range of topics of the „glass technology live“ (hall 11) reaches from future facade constructions and innovative glass products to design and aesthetic innovations which amends the Symposium in cooperation with Glastechnik VDMA, University Stuttgart, HVG-DGG, Bundesinnungsverband des Glaserhandwerks and Bundesverband Flachglas.*

#### **FAÇADE-CENTRE WITH COMPETENCY CENTRE GLASS + FAÇADE**

*Exhibitor presentations, mock-ups as well as information from institutes and associations in Hall 11.*

# PROGRAMME

**DIENSTAG, 21. OKTOBER**  
*TUESDAY, 21 OCTOBER*

09:45 h

## Opening

*Prof. Jens Schneider and Prof. Bernhard Weller*

10:00 h

Feasibility studies on fibre optical sensor implementation in cold bent glass laminates,  
*Jan Knippers*

10:30 h

Engineered transparency in north america: the role of the engineer,  
*John Kooymans*

11:00 h

*Coffee break*

Block 1

## GLASS - TIMBER

11:30 h

Joint study on material properties of adhesives to be used in load-bearing timber-glass composite elements,  
*Felix Nicklisch*

11:50 h

Timber-glass composites used as bracing systems in wooden frame-houses, *Christoph Hackspiel*

12:10 h

Design approaches for timber-glass beams,  
*Michael Dorn*

12:30 h

Development of timber-glass composite (TGC) for multi-story facades,  
*Alireza Fadai*

13:00 h

*Lunch*

## GLASS - STRUCTURAL GLASS

Experimental and numerical investigation of the mechanical behaviour of explosion resistant glazing,

*Johannes Kuntsche*

Ball drops and equilibrium of brittle fractures,

*Stefan Reich*

Evaluation of adhesively bonded mounting systems by comparing photogrammetry and FEM,

*Lutz Tautenhahn*

Light scattering glass material modified by surface ion exchange for energy efficient using in technical and decorative lighting, *Olga N. Sidelnikova*

## FACADE - ARCHITECTURAL DESIGN

Parametric facade system,

*Michael Pelzer*

The parametric concept,

*Thomas Haltenhof*

Energy and comfort analysis of glazed double skin facades for refurbishments in temperate climates,

*Francesco Pomponi*

Acoustically effective facade design,

*Holger Techen*

Block 2	<b>GLASS - TIMBER</b>
14:00 h	Load bearing timber-glass shear walls, <i>Erik Serrano</i>
14:20 h	Experimental analysis of load bearing timber-glass I-beams, <i>Mateja Zlatinek</i>
14:40 h	Creep behaviour of adhesive joints in timber-glass composite elements, <i>Felix Nicklisch</i>
15:00 h	Wood-glass composite elements for chilean building market, <i>Khaled Saleh Pascha</i>
15:30 h	<i>Coffee break</i>
Block 3	<b>GLASS - TIMBER</b>
16:00 h	Design approach to refurbishment of existing buildings using timber-glass upgrade modules, <i>Vesna Žegarac Leskovar</i>
16:20 h	Architectural application and ecological impact studies of timber-glass composites structures, <i>Vitalija Rosliakova</i>
16:40 h	Simulation of experiments on timber-adhesives-glass walls by nonlinear finite element method, <i>Sara Piculin</i>
17:30 h	<i>glass technology live - tour</i>
18:30 h - 22:00 h	<i>get together at gtl-café</i>

## GLASS - STRUCTURAL GLASS

Non-contact 3D measurement of flat or bended glass for highest process control, *Bertrand Mercier*

Long term behaviour of a synthetic resin mortar under compressive stress, *Georg Kolany*

Chemically strengthened glass by ion exchange: residual stress profile and strength evaluation, *Guglielmo Macrelli*

A new approach to edge stress measurement in tempered glass panels, *Johan Anton*

## GLASS - STRUCTURAL GLASS

Load monitoring opportunity using optical fiber technology, *Karl-Heinz Haase*

Investigation of edge strength dependent on different types of edge processing, *Jonas Kleuderlein*

## FACADE - ARCHITECTURAL DESIGN

Structured sun protection glazing, *Walter Haase*

Daylighting controls, *Helmut Köster*

Non-transparent transparency. Engineered methods of simulating transparency without the use of light-transmitting materials, *Marcin Brzezicki*

The use and benefits of suspended particle device (SPD) SmartGlass dynamic window tinting, *Joseph M. Harary*

## FACADE - ARCHITECTURAL DESIGN

Pressure compensation within closed multi layered facade units, *Amin Emami*

Predicting transparency, *Etienne Sandré-Chardonnal*

A new dawn rising – the first fully automatic vacuum glazing production line with unique production features and optimization potentials, *Helmut Hohenstein*

**MITTWOCH, 22. OKTOBER**  
*WEDNESDAY, 22 OCTOBER*

**09:45 h**

**Opening**

*Prof. Jens Schneider and Prof. Bernhard Weller*

**10:00 h**

Engineered transparency,

*Christoph Timm*

**10:30 h**

Latest developments in facade design  
and construction,

*Winfried Heusler*

**11:00 h**

*Coffee break*

**Block 1**

**SOLAR TECHNOLOGY**

**11:30 h**

Semitransparent photovoltaic.

A historical overview and the  
question for the future,

*Dieter Moor*

**11:50 h**

Dye sensitized solar cells for  
building-integrated photovoltaics,

*Michael Schwartz*

**12:10 h**

Angular transmittance of solar glass  
and impact on PV energy yield,

*Werner Herrmann*

**12:30 h**

George Washington University solar  
walkway case study,

*Teodosio del Caño*

**13:00 h**

*Lunch*



## GLASS - STRUCTURAL DESIGN

Fracture behaviour of glass columns,  
*András Jakab*

Glass load bearing element subjected  
to compression,  
*Roman Kalamar*

Behaviour of cold bent glass plates  
during the shaping process,  
*Kyriaki Datsiou*

Through-cracked-tensile tests with  
polyvinylbutyral (PVB) and different  
adhesion grades,  
*Johannes Franz*

## GLASS - PROJECTS

20 Fenchurch Street – canopy con-  
sisting of laminated glass arranged  
between filigree and massive details,  
*Matthias Oppe*

All-glass enclosures: Spaces for  
working and living,  
*Philip Wilson*

Structure from subdivision:  
the grid-shell of Jinji Lake Mall,  
*Daniel Gebreiter,*  
*Jörg Mühlberger*

Structural glass elevator shaft for  
the mauritshuis,  
*Mick Eekhout*

## Block 2

## GLASS - COMPOSITES AND COATINGS

14:00 h

Laminar silicone support concept for opaque overhead glazing,  
*Florian Doebbel*

14:20 h

New method for deposition of silane coupling agents to improve the durability of adhesively bonded glass joints, *Juliane Elsässer*

14:40 h

Epoxy resin adhesives for structural purposes – a new approach,  
*Michael Kothe*

15:00 h

Investigation of the material behavior of bonded connections with silicone,  
*Yves Staudt*

15:30 h

*Coffee break*

## Block 3

## GLASS - COMPOSITES AND COATINGS

16:00 h

Complete surface color monitoring for coating process control,  
*Bertrand Mercier*

16:20 h

Engineering approach of designing the secondary seal of insulating glass units for SSG applications,  
*Florian Doebbel*

16:40 h

Prevention of float glass corrosion by SiO<sub>2</sub> flame coating (C-CVD) under atmospheric pressure,  
*Paul Ruffer*

17:00 h

Experimental study of structural adhesives for a steel-glass connection,  
*Paulo J. S. Cruz*

## GLASS - STRUCTURAL DESIGN

Curved Glass:  
Bending and Applications,  
*Martien Teich*

Three-dimensional deformation of  
spannglass beams applying  
photogrammetry,  
*Michael Engelmann*

Design of insulated glass units -  
linear theory vs. non-linear theory,  
*Jürgen Neugebauer*

Impact of foam spacer systems on  
curved double glazed units under  
climatic loads,  
*Frank Wellershoff*

## FACADE - PROJECTS

Louvre Lens – structural and facade  
systems,  
*Daniel Pfanner*

Softly curved land mark at the end of  
the boulevard,  
*Christoph Rubel*

Four different grades of transparency –  
An extraordinary building envelope,  
*Monica Aracil*

The energy gallery:  
a pilot project in Pisa,  
*Maurizio Froli*

## GLASS - STRUCTURAL DESIGN

Extending the performance and design  
of laminated glass fins using ionoplast  
interlayers,  
*Robin Czyzewicz*

Exploratory 2D and 3D numerical  
investigation of SG-laminated rein-  
forced glass beams,  
*Chiara Bedon*

Designing and testing an eight meter  
span glass portal frame,  
*Ate Snijder*

## FACADE - STRUCTURAL DESIGN

Integrated design of structural glass  
envelopes,  
*Lisa Rammig*

Analyses on loads and adhesives for  
hybrid glass-steel facade structures,  
*Vlad Silvestru*

Detailing for (de)materialization -  
design and fabrication of a folded  
reinforced glass connection,  
*Paulo Carvalho*

# REGISTRATION

**350,00 € INKL. MESSEINTRITT AN BEIDEN TAGEN.**

**WEITER ENTHALTEN SIND:**

- // Getränke und kleine Snacks in allen Pausen
- // Abendimbiss am ersten und Mittagessen an beiden Konferenztagen
- // Tagungsband mit allen 70 Fachaufsätzen (etwa 700 Seiten)

Online-Anmeldung unter [www.engineered-transparency.eu](http://www.engineered-transparency.eu)

Das eTicket berechtigt zur kostenlosen Hin- und Rückfahrt zum und vom Messegelände am Tage des Messebesuchs mit allen Verkehrsmitteln des VRR in der Preisstufe D, Region Süd (DB 2. Klasse, nur zuschlagfreie Züge).

Diese Veranstaltung wird bei Architekten- und Ingenieurkammern akkreditiert.

Halle/Hall 9-11

**Glasprodukte und -anwendungen**

*Glass products and applications*

Halle/Hall 11-12, 14-17

**Glasbearbeitung und -veredelung**

*Glass processing and snapping technology*

Halle/Hall 14

**Messtechnik, Steuertechnik, Regeltechnik, Software**

*Measurement, testing, control technology and software*

Halle/Hall 13-16

**Glasherstellung, Produktionstechnik**

*Glass production, production technology*

**engineered  
transparency**



**€350, ICL. 2-DAY ADMISSION TO THE FAIR.**

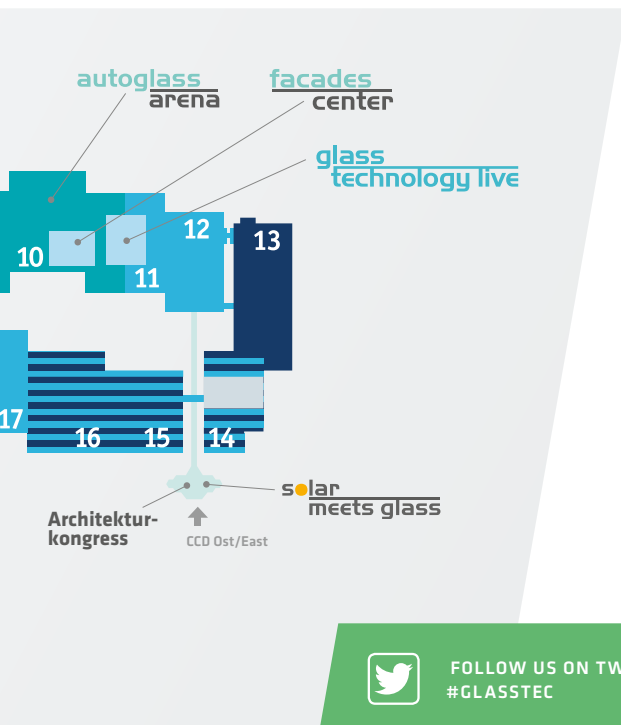
**ALSO INCLUDED:**

- // Beverage and snacks at all coffee breaks
- // Evening snack on the first day and lunch on both days
- // Proceedings of all scientific papers (approx. 700 pages)

Online registration: [www.engineered-transparency.eu](http://www.engineered-transparency.eu)

The **eTicket** entitles you to free travel to and from the exhibition grounds on the day of your visit, on all transport within the VRR network in the price category D, southern region (DB/German Railway 2nd class, supplement-free trains only).

This conference will be accredited by german architecture and engineering associations.



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# INFOS AT A CLICK

ZUR BESSEREN ÜBERSICHT IM INTERNET BIETEN WIR FÜR JEDE ZIELGRUPPE EINEN EIGENEN BRANCHENGUIDE MIT SPEZIFISCHEN INFORMATIONEN RUND UM DAS ANGEBOT DER GLASSTEC.

Zentrum Architektur + Bau	<a href="http://www.glasstec.de/architektur-bau">www.glasstec.de/architektur-bau</a>	
Zentrum Fenster + Fassade	<a href="http://www.glasstec.de/fenster-fassade">www.glasstec.de/fenster-fassade</a>	
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Trendkompass	<a href="http://www.glasstec.de/trendkompass">www.glasstec.de/trendkompass</a>	

## OPTIMALE ORIENTIERUNG

Pictogramme in den Informationsmedien und auf der Messe führen direkt zu den relevanten Bereichen für Ihre Branche.

## INNOVATIV! DER TRENDKOMPASS

Durch die Formulierung von Trendthemen wird die Orientierung in der Themenvielfalt der glasstec und den hier präsentierten Produkten und Innovationen zusätzlich erleichtert.



ANDROID



IOS

**PLEASE FEEL FREE AND VISIT OUR WEBSITE FOR CERTAIN TARGET GROUPS TO GET MORE SPECIFIC INFORMATIONS ABOUT THE GLASSTEC.**



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construction center*

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*center for windows  
and façades*

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*Trendcompass*

*[www.glasstec.de/trendcompass](http://www.glasstec.de/trendcompass)*

#### **OPTIMUM ORIENTATION**

*Special fair icons guide you directly to the relevant area for your business sector.*

#### **INNOVATIVE! THE TRENDCOMPASS**

*The defintion of trends makes it easier to find the way to your specific glasstec-topic and its products and innovations.*

## GLASSTEC APP

**IOS // ANDROID // SMARTPHONES // TABLETS**

Für Ihre optimale Messevorbereitung mit allen Informationen rund um die glasstec und ihr umfangreiches Rahmenprogramm.

*For your optimal trade fair preparation with all information concerning glasstec and its extensive supporting programme.*

# ORGANISATION

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## glasstec

INTERNATIONAL TRADE FAIR FOR GLASS  
PRODUCTION • PROCESSING • PRODUCTS

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**21 – 24 OCTOBER 2014**

Täglich 9 bis 18 Uhr • Daily 9 a.m. to 6 p.m.

[www.glasstec.de](http://www.glasstec.de)

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