



International Symposium on Plastics Technology

10 March 2020, Aachen, Germany



Discovery day for lateral thinkers in plastics technology

Aachen, Germany
Tivoli football stadium

www.ikv-symposium.com

About the symposium

Lateral thinkers from all over the world are invited to the International Symposium on Plastics Technology by the IKV on the occasion of its 70th anniversary and the 150th anniversary of the RWTH Aachen University.

The scientific symposium offers those being curious about cutting edge plastics technology an inspiring forum for exchange on research and innovation to discuss urgent questions and latest findings, to network and to experience impulses for the future of plastics technology. It forms a symbiosis with the International Colloquium on Plastics Technology, which will take place on 11 and 12

March 2020 for the 30th time and has always been distinguished by its industrial relevance.

Connecting the Symposium with the International Colloquium on Plastics Technology provides a unique opportunity to experience both international scientific perspectives and practice-oriented research in a concentrated and dense manner. Due to the diversity of the events, the symposium and the colloquium can be booked separately; however, participants at both events benefit from reduced-price combined tickets.

- **Circular economy**
- **Extrusion**
- **Hybrid materials and additive manufacturing**
- **Injection moulding**
- **Lightweight technologies**
- **Simulation and digitisation**

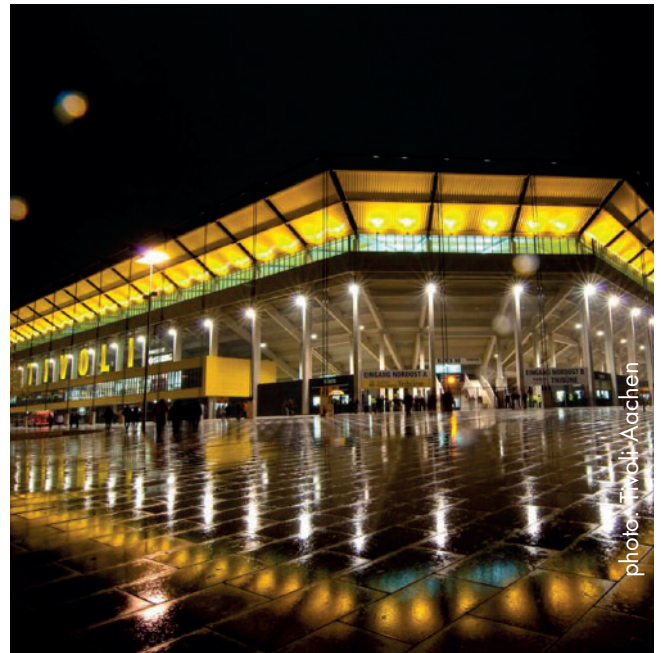


photo: twot-Aachen

The scientific committee

To design the symposium programme, the International Scientific Committee has carefully selected and peer-reviewed the papers that have been submitted by researchers from leading universities and development departments of industrial companies. They cover a variety of research areas like additive manufacturing, circular economy, lightweight technologies and plastics industry 4.0 as well as innovative projects from the fields of extrusion and injection moulding. Visitors can

now look forward to a diverse lecture programme with scientific presentations from all over Europe, North and South America and Asia.

We can certainly expect a rewarding and inspiring event – and we warmly invite you to participate in the first Symposium on Plastics Technology and to join in the interesting and intensive discussions there!



Prof. Olga Sousa Carneiro, PhD
Institute for Polymers and Composites
University of Minho,
Guimarães, Portugal



Prof. Dr.-Ing. Christian Hopmann
Chair for Plastics Processing
Institute for Plastics Processing in Industry and Craft
at RWTH Aachen, Germany



Prof. Dr. rer. nat. Rainer Dahlmann
Institute for Plastics Processing in Industry and Craft
at RWTH Aachen, Germany



Prof. Dr.-Ing. Volker Schöppner
Professor for Plastics Processing
University of Paderborn, Germany



Saeed Farahani, PhD
Clemson University International Center
for Automotive Research,
Greenville, SC, USA



Prof. Guido Tosello, PhD
Manufacturing Engineering
Technical University of Denmark,
Kongens Lyngby, Denmark



Prof. Dipl.-Ing. Dr. mont. Walter Friesenbichler
Chair of Plastics Processing
Montanuniversität Leoben,
Austria



Prof. Lih-Sheng (Tom) Turng, PhD
Co-Director, Polymer Engineering Center
University of Wisconsin-Madison,
USA

Lectures

Plenary lecture

Volker Altstädt | University of Bayreuth

- **Microplastic – Effect of external stimuli on fatigue crack propagation resistance of polymers**

Circular economy

Ludovica Fiore | Sapienza University of Rome

- **An efficient strategy based on hyperspectral imaging for brominated plastic waste sorting in a circular economy perspective**

Pieter Samyn | Hasselt University

- **Melt-processing of biopolymer composites with nanocellulose additives**

Philipp Schäfer | RWTH Aachen University

- **Continuous chemical recycling of polystyrene with a twin-screw extruder**

Margaret Sobkowicz | University of Massachusetts Lowell

- **Reactive processing of polymers and blends: Strategies for a sustainable plastics life cycle**

Joerg Woidasky | Pforzheim University

- **Photoluminescent tracer effects on thermoplastic polymer recycling**

Extrusion

Dennis Balcerowiak | RWTH Aachen University

- **Homogenisation of the wall thickness distribution of thermoformed cups by using different pre-stretch plugs and process parameter settings to improve material efficiency**

Carol Barry | University of Massachusetts Lowell

- **Effect of Polymer Molecular Weight when Compounding Highly-filled Composites**

Florian Brüning | Paderborn University

- **Development of a solids conveying throughput model for grooved barrel extruders based on discrete element simulations**

Olga Carneiro | University of Minho

- **Recent developments in the design of extrusion dies for the production of complex profiles**

Fabian Fey | RWTH Aachen University

- **Foam extrusion of elastomers using water as physical blowing agent**

Hybrid materials and additive manufacturing

Simon Bölle | RWTH Aachen University

- **Prediction of the bond strength of thermoplastics welded by laser transmission welding**

Saeed Farahani | Clemson University

- **Integration concept of injection, forming and foaming: a practical approach to manufacture hybrid structures**

Fabian Günther | TU Dortmund University

- **Potential of mesoscale structural elements in the interface of hybrid CFRP-metal-parts on the load transfer**

Karoline Hofmann | Chemnitz University of Technology

- **Interaction between foam injection moulding and welding process. Analysis of the process - material - structure - property relations**

Franziska Kaut | Procter & Gamble Service GmbH

- **New characterisation method for correlation of interlayer structure and mechanical properties of additive manufactured semicrystalline polymer parts**

Nicolai Lammert | Yizumi Deutschland GmbH

- **Physically motivated material classification and process optimisation for plasticising additive manufacturing processes**

Anna Liebrich | Technical University of Munich

- **Permeation properties of laser-sintered polyamide 12 sheets in comparison to an extruded polyamide 12 film**

Injection moulding

Cristoph Hinse | SimpaTec GmbH

- **Simulated reality – injection moulding machine, temperature control unit, material, process**

Thomas Koeplmayr | Engel Austria GmbH

- **Barrier screw design for high-performance plasticising in injection moulding**

Dragan Kusić | TECOS Slovenian Tool and Die Development Centre

- **Development of IoT device for temperature and cavity pressure measurements**

Philipp Land | University of Applied Sciences Osnabrück

- **Targeted manipulation of fibre orientation through relative movement in an injection mould**

Alexander Schulze Struchtrup | University of Duisburg-Essen

- **A holistic approach to part quality prediction in injection moulding based on machine learning**

Guido Tosello | Technical University of Denmark

- **Latest advances in micro injection moulding process simulations**

Curdin Wick | University of applied science Rapperswil

- **Data driven injection moulding**

Lightweight technologies

Björn Beck | Fraunhofer Institute for Chemical Technology (ICT)

- **Automated 3D skeleton winding process for continuous-fibre-reinforcements in structural thermoplastic components**

Felix Flachmann | Paderborn University

- **The influence of hydrothermal aging on the material properties of continuous fibre-reinforced thermoplastics and its non-destructive characterisation**

Benedikt Kilian | Covestro Deutschland AG

- **Towards process optimisation of polyurethane pultrusion using 3D simulation**

Nicolina Topic | Krauss Maffei Technologies GmbH

- **Assistance machine function for BMC injection moulding**

Lih-Sheng Turng | University of Wisconsin-Madison

- **Recent developments of lightweight polymers, foams, blends, composites, aerogels, and hydrogels with special functions and properties**

Simulation and digitisation

Thijs Donderwinkel | ThermoPlastic composites Research Center (TPRC)

- **Strength development in overmoulded structures**

Walter Friesenbichler | Montanuniversity Leoben

- **Viscoelastic modelling of polymer melts and rubber compounds**

Nadine Gushurst | Faserinstitut Bremen e.V. (FIBRE)

- **Investigations on the influence of high pressures on the curing behaviour and material properties of composite structures for the development of a material model**

Armin Kech | Robert Bosch GmbH

- **A study on the determination of virtual process and quality data in injection moulding simulation**

Miguel Nóbrega | University of Minho

- **Computational rheology et al. @ IPC/UMinho**

Hamed Nokhostin | RWTH Aachen University

- **Simulation of solidification of a nucleated isotactic polypropylene in a quiescent condition**

Michael Stanko | TU Dortmund University

- **Digital twin of the polyurethane rotational moulding process**

What to expect

- Latest know-how in polymer science and technology
- Thirty-five lectures presented in three parallel sessions
- Scientists from ten nations

Further information

The registration for the Symposium on 10 March 2020 is open. Register now and be part of it.

Ticket prices Symposium

- | | |
|-----------------------------------|-------|
| ■ Member of Sponsors' Association | 600 € |
| ■ Non-member | 650 € |
| ■ University members | 480 € |

For the first time, the Symposium will take place in addition to the Colloquium to be held on 11 - 12 March 2020. Profit therefore from a combined ticket.

Conference language

All lectures will be held in English.

Welcome reception on 9 March 2020, 6 pm

Centre Charlemagne, Katschhof 1, 52062 Aachen, Germany, in the immediate vicinity to Aachen Cathedral and Aachen City Hall

Time schedule for 10 March 2020

8.30 am - registration

9.00 am - beginning of lectures

6.00 pm - end of the Symposium

Time for networking

- Exchange your ideas with international experts
- Welcome reception at the eve in the Centre Charlemagne
- Be part of the table-top exhibition

Personal contacts

General information

Simon Bölle, M.Sc., phone +49 241 80-28363
symposium@ikv.rwth-aachen.de

Registration

Valérie Guillemin, phone +49 241 80-93877
akademie@ikv.rwth-aachen.de

Table-top exhibition

Philipp Surray, M.Sc., phone +49 241 80-96960
philipp.surray@ikv.rwth-aachen.de

Venue

Tivoli football stadium, Krefelder Straße 205,
52070 Aachen, Germany

Host

IKV – Institute for Plastics Processing in Industry and Craft at RWTH Aachen University,
Seffenter Weg 201, 52074 Aachen, Germany
phone +49 241 80-93806, zentrale@ikv.rwth-aachen.de

Register now



30th International Colloquium Plastics Technology

11 - 12 March 2020, Aachen, Germany

Talents. Network. Innovation.