



 International Conference on
SCREW MACHINES 2026
8-10 September **DORTMUND, GERMANY**

PROGRAMME

The International Conference on Screw Machines 2026 features presentations of research and technical papers on all kind of screw machines. This year's event will cover:

- » Design
- » Operation
- » Simulation
- » Contact & loss mechanisms
- » Heat pumps & refrigeration
- » Refrigerant oil mixtures
- » Gap flows
- » Steam compression
- » Liquid injection

Learn about the latest developments and connect with scientists, manufacturers, service providers, and users from the screw machine community.

For registration, further information on the event, and past conference papers please visit:

WWW.ICSM.TU-DORTMUND.DE

CONFERENCE VENUE

TU Dortmund University
Seminar Building I
Friedrich-Wöhler-Weg 6
44227 Dortmund, Germany

GENERAL CHAIR

Andreas Brümmer
TU Dortmund University
Chair of Fluidics
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TUESDAY 8 September 2026

18:00 SOCIAL EVENT & LABORATORY TOURS
Emil-Figge-Straße 71b, 44227 Dortmund

WEDNESDAY 9 September 2026

09:00 CONFERENCE REGISTRATION
WELCOME ADDRESS & PLENARY SESSION
Room H.001

10:00 **Welcome address**
G. Schembecker, Vice President Finance, TU Dortmund University, DE
M. Schulze Darup, Dean of the Faculty of Mechanical Engineering, TU Dortmund University, DE
A. Brümmer, general chair & Head of Chair of Fluidics, TU Dortmund University, DE

10:30 **Optimization is Not Innovation**
P. F. Pelz, Professor of Mechanical Engineering & Head of Chair of Fluid Systems
Darmstadt University of Technology, DE

11:15 **Between Conferences on Screw Machines**
R. Sachs, R&D Manager (retired)
Busch Productions GmbH, DE

12:00 LUNCH BREAK

MULTIPHASE GAP FLOWS (ARCHIMEDES)
Room 1.001

SIMULATION
Room 2.008

13:30 **The property software TREND and its application for modeling processes**
A. Jäger¹ et al.^{1,2},
¹ Dresden University of Technology, DE
² Ruhr University Bochum, DE

SplineMesh v3.0: Robust spline-based structured mesh generation for vacuum pumps with sharp features
Y. Ji and M. Möller
Delft University of Technology, NE

13:55 **Comparison of degassing modelling approaches in two-phase gap flows**
L. Burchardt¹ et al.^{1,2}
¹ TU Dortmund University, DE
² RWTH Aachen University, DE

System simulation of a food and beverage process plant including mechanical vapour recompression via twin-screw machines using GT-SUITE and GT-SCORG
M. Luzzi¹ et al.^{1,2,3}
¹ Gamma Technologies GmbH, DE
² Gamma Technologies LCC, US
³ City, University of London, UK

14:20 **High-resolution simulations of gas-liquid mass transfer in sealing gap flows**
J. Vorspohl¹ et al.^{1,2}
¹ RWTH Aachen University, DE
² TU Dortmund University, DE

A novel structured meshing for canonical screw compressors with accurate clearance leakage resolution
S. Ebenezer James and K. Sadasivuni
Program Development company LLC (GridPro), IN

14:45 **Laser-Optical Diagnostics of Velocity Profiles in Thin Annular Rotor-Stator Gaps**
H. Lange and J. Kriegseis
Karlsruhe Institute of Technology (KIT), DE

Multiphase CFD of Positive Displacement Machines Using Simcenter STAR-CCM+: Methods and Application Examples
J. Hesse and A. Spille
CFX Berlin Software GmbH, DE

15:10 COFFEE BREAK

OPERATION
Room 1.001

LIQUID INJECTION I
Room 2.008

15:30 **Passive Signal Analysis for Component Level Condition Monitoring in Screw Pumps**
M. Fikacek¹ and C. Bayer²
¹ Leistriz Pumpen GmbH, DE
² Technische Hochschule Nürnberg, DE

Analysis of Flow Losses in the Interlobe Clearance of Liquid-Injected Screw Machines
M. Geissendorf and A. Brümmer
TU Dortmund University, DE

15:55 **Experimental investigation of wear in screw pumps**
P. Moor¹ et al.
¹ Darmstadt University of Technology, DE
² Leistriz Pumpen GmbH, DE

Leakage-Induced Heat Transfer in Liquid Injected Screw Compressors
M. Heselmann, T. Monden and A. Brümmer
TU Dortmund University, DE

16:20 **Vibration Analysis and Solution for Hydrogen Screw Compressor Piping**
H. Wei, J. Feng and X. Peng
Xi'an Jiaotong University, CN

Investigation of Oil Influence in an Oil-Injected Screw Compressor Using a Thermodynamic Chamber Model
H. Trumpf et al.
TU Dresden University of Technology, DE

18:00 CONFERENCE DINNER – sponsored by Aerzener Maschinenfabrik GmbH
Pulsschlag Dorstfeld, Vogelpothsweg 15, 44149 Dortmund

THURSDAY 10 September 2026

GAP FLOWS Room 1.001		LIQUID INJECTION II Room 2.008	
09:00	Experimental investigation of microscopic surface structures influencing rarefied Poiseuille gap flow <u>S. Brock</u> ¹ et al. ^{1,2} ¹ TU Dortmund University, DE ² TU Dresden University of Technology, DE		Experimental Investigation of Lubricant Degradation and Compressor Performance in an Oil-Injected Air Twin-Screw Compressor <u>A. Peco</u> and A. Kovacevic City, University of London, UK
09:25	Measurement of Operational Clearances, Casing Strain, and Temperature in Oil-Free Screw Compressors Using Eddy Current Probes and Fibre Bragg Grating Sensors <u>A. Kishan</u> ^{1,2} et al. ^{1,2} ¹ City, University of London, UK ² Howden Compressor, Chart Industries Company, UK		Considering hydrodynamic load-carrying capacity of the interlobe clearance in thermodynamic simulation of liquid-injected screw machines M. Geissendorf, M. Heselmann and A. Brümmer TU Dortmund University, DE
09:50	Characterising leakage flow in Internally-Geared Screw Compressors <u>M. Read</u> City, University of London, UK		Material Selection for Rotors in Water-Lubricated Screw Compressor <u>H. Abbasi</u> ¹ et al. ¹ City, University of London, UK ² Mayekawa UK Ltd., UK
10:15 COFFEE BREAK			
STEAM COMPRESSION Room 1.001		HEAT PUMPS & ORC I Room 2.008	
10:45	Design of a Dry-Running Screw-Spindle Compressor for Low Pressure Steam Generation <u>T. W. Mösch</u> ¹ et al. ^{1,2} ¹ Combitherm GmbH DE ² TU Dresden University of Technology, DE		Impact of Reversible Screw Expander-Compressor on Carnot Battery Efficiency <u>M. Heselmann</u> ¹ et al. ^{1,2} ¹ TU Dortmund University, DE ² Darmstadt University of Technology, DE
11:10	Thermodynamic Modelling of a Dry-Running Screw-Spindle Compressor for Low-Pressure Steam Generation <u>M. Enge</u> ¹ et al. ^{1,2} ¹ TU Dresden University of Technology, DE ² Combitherm GmbH, DE		Experimental Assessment of a High-Temperature Screw-Compressing Heat Pump for Charging a Carnot Battery Using Flooded-Mine <u>A. Cendoya</u> et al. University of Liege, BE
11:35	Steam as a Working Fluid in Twin-Screw Compressors: Effects of Liquid Injection and Condensate Formation <u>M. Grieb</u> and A. Brümmer TU Dortmund University, DE		Oil Management of a Reversible Twin-Screw Machine for Heat Pump and ORC Operation <u>J. von Zabienski</u> , H. Spliethoff and C. Schiffelechner Technical University of Munich, DE
12:00 LUNCH BREAK			
DESIGN & SIMULATION Room 1.001		HEAT PUMPS & ORC II Room 2.008	
13:30	KAlrAA: A physics-informed data-driven tool for real-time performance prediction and selection of ammonia screw compressors <u>H. Abbasi</u> ¹ , A. Kumar ² and S. Rokade ² ¹ City, University of London, UK ² Kirloskar Pneumatic Company Ltd., India		Waste heat energy recovery potential in compressed air systems <u>J. A. Persson</u> ^{1,2} ¹ JGP Teknikkonsult ² KTH Machine Design
13:55	Influence of Rotor Profile Characteristics upon Leakage Mechanism and Performance of Screw Compressors <u>H. Keshtkar</u> ¹ et al. ¹ City, University of London, UK ² Mayekawa UK Ltd., UK		A combined screw spindle expander and compressor for CO2 heat pump cycles <u>M. Hagemann</u> and A. Brümmer TU Dortmund University, DE
14:20	Design and Performance Study of a Symmetrical Variable-Lead Screw Compressor <u>Y. Zhou</u> et al. Xi'an Jiaotong University, CN		Thermodynamic Study on Twin- Screw Compressor with Internally Cooled Rotors <u>A. J. Hoess</u> , E. A. Groll and D. Ziviani Purdue University, USA
14:45	An Extended Optimisation Framework for Screw Compressors Considering Mechanical Losses <u>T. Fehlau</u> and A. Brümmer TU Dortmund University, DE		

15:15 **Closing remarks**

A. Brümmer, general chair & Head of Chair of Fluidics
TU Dortmund University, DE

16:00 **End of conference**

PROGRAMME COMMITTEE

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REGISTRATION & FEES

Visit the conference web page **www.icsm.tu-dortmund.de** and register via **ConfTool** for the International Conference on Screw Machines 2026 in Dortmund. If you have any questions regarding the registration process, please do not hesitate to contact us.

The conference fee including all events is **803.25 €** (19% VAT included).

CONTACT

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