The International Conference on Screw Machines 2018 features presentations of research and technical papers on all kind of screw machines. This conference will cover:

» Design
» Operation
» Manufacturing
» Energy efficiency
» Simulation
» Novel applications

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
icsm2018@ft.mb.tu-dortmund.de
TUESDAY 18th September

09:00 CONFERENCE REGISTRATION

OPENING SESSION
Room H.001

10:00 Welcome address
G. Sadowski, prorector research; M. Stommel, dean of the Faculty of Mechanical Engineering; A. Brümmer, general conference chair
TU Dortmund University, DE

10:30 Advances in modelling of screw machines
A. Kovacevic, Professor in Engineering Design and Compressor Technology
City, University of London, GB

11:15 Potential European ecodesign regulations for compressors — history, status and outlook
H.-U. Fleige, head of research & development
Aerzener Maschinenfabrik GmbH, DE

12:00 LUNCH BREAK

MULTIPHASE FLOW I Room 1.001

13:30 Numerical analysis of oil injection effects in a single screw expander
S. Randi\textsuperscript{1}, A. Suman\textsuperscript{1}, N. Casari\textsuperscript{1}, M. Pinelli\textsuperscript{1}, D. Ziviani\textsuperscript{2}
\textsuperscript{1}University of Ferrara, IT
\textsuperscript{2}Purdue University, US

13:55 Multiphase-flow simulation of a rotating rectangular profile within a cylinder in terms of hydraulic loss mechanisms
H. Vasuthevan, A. Brümmer
TU Dortmund University, DE

14:20 Mathematical modeling of working processes of variable frequency twin-screw expander with differentiated oil supply into the working chamber
V. L. Yusha, G. I. Chernov, M. A. Fedorova
Omsk State Technical University, RU

14:45 Effects of surface condensation in an idealised steam-driven screw expander
M. Grieb, A. Brümmer
TU Dortmund University, DE

15:10 COFFEE BREAK

MULTIPHASE FLOW II Room 1.001

15:45 Impact of different clearance heights on the operation of a water-flooded twin-screw expander — experimental investigations based on indicator diagrams
A. Nikolov, A. Brümmer
TU Dortmund University, DE

16:10 Effect of oil-injection on twin-screw compressor performance
N. Basha, A. Kovacevic, N. Stosic, I. Smith
City, University of London, GB

16:35 Thermal expansion in liquid-injected screw compressors
U. Dämgen\textsuperscript{1}, P. Hadamitzky\textsuperscript{2}, J. Dohmann\textsuperscript{3}
\textsuperscript{1}Boge Kompressoren, DE
\textsuperscript{2}TU Braunschweig, DE
\textsuperscript{3}Ostwestfalen-Lippe-University-of-Applied-Sciences, DE

16:55 The influence of profile geometric parameters on characteristics of rotor-gearing compressor
A. Kotlov\textsuperscript{1}, I. Maksimenko\textsuperscript{1}, Y. Kuznetsov\textsuperscript{2}
\textsuperscript{1}Peter the Great St.Petersburg Polytechnic University, RU
\textsuperscript{2}JSC Compressor, RU

18:15 CONFERENCE DINNER – sponsored by PTG Holroyd Machine Tools & Components
Storckshof, Ostenbergstr. 111, 44277 Dortmund
### CONTACT & LOSS MECHANISMS

**08:30**
**Influence of suction port parameters on integral characteristics of screw-type compressor**

A. Kotlov  
Peter the Great St. Petersburg Polytechnic University, RU

### SIMULATION & EXPERIMENT I

**08:30**
**Full 3D numerical analysis of a twin screw compressor by employing open-source software**

N. Casari¹, M. Pinelli¹, A. Suman¹, A. Kovacevic², S. Rane², D. Zwiian²  
¹ University of Ferrara, IT  
² City, University of London, GB

### SYSTEM & MACHINE DESIGN

**10:15**
**A similarity based efficiency model of spindle screw pumps**

C. Schänzle, T. Corneli, P. F. Pelz  
TU Dortmund, DE

### SIMULATION & EXPERIMENT II

**10:15**
**Numerical study on screw machines with large helix angles**

Y. Lu, A. Kovacevic, M. Read  
City, University of London, GB

### VACUUM

**14:00**
**Analytical and numerical prediction of the flow and performance in a claw vacuum pump**

J. F. Willie  
Gardner Denver Schopfheim GmbH, DE

### SIMULATION (EU MOTOR Project)

**14:00**
**Spline-based parameterization techniques for twin-screw machine geometries**

J. P. Hinz, M. Möller, C. Vui  
Delft University of Technology, NL

### LUNCH BREAK & LABORATORY TOURS

**11:30**
**A model for the transient pulsation generation at the discharge of a screw compressor by a shock tube analogy**

P. X. Huang  
Hi-Bar MC Tech LLC, US

### CLOSING SESSION

**15:45**
**Closing remarks**

A. Brümmer, general conference chair  
TU Dortmund University, DE

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**WEDNESDAY 19th September**

**09:45**
**COFFEE BREAK**

**10:40**
**Modeling a dry running twin-screw expander using a coupled thermal-fluid solver with automatic mesh generation**

D. H. Rowinski¹, A. Nikolov², A. Brümmer²  
¹ Convergent Science, Inc., US  
² TU Dortmund University, DE
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 2018 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 650 € (VAT not included).

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