

Program

Annual meeting of the DECHEMA/VDI Groups

Fluid Separations & Heat and Mass Transfer

9th - 11th March 2026



Venue: The Lucerne University of Applied Sciences and Arts
Horw campus, School of Engineering & Architecture
Building IV

DECHEMA/VDI Specialist Groups Fluid Separations and Heat & Mass Transfer

09.03.2026

<u>Start</u>	<u>End</u>	
11:00	12:00	Arrival and registration
12:00	12:45	Possibility for lunch at mensa
13:00	13:10	Welcome & Joint Session
13:10	13:30	Welcome & Intro HS Lucerne, L. Fischer
13:30	14:00	T. Linder/Sulzer: Advancing Mass Transfer Component Development: From a Knowledge-Based to a Data-Driven Approach
14:00	14:30	F. Lais/TUBS: A shortcut design approach to evaluate reboiler designs in mechanical vapor recompression scenarios
14:30	15:00	Coffee Break
		FVT - Session 1: Rotating Equipment
		WSÜ - Session 1: Evaporation and Condensation
15:00	15:25	M. Illner/ Technische Universität Berlin: CO ₂ Capture using Rotating Packed Beds – Are Columns Obsolete? Pilot-Plant Operation and Simulation of Hybrid Process Configurations
15:25	15:50	J. Hohlmann/ TU Dortmund: Phase Retention Control in Preparative Centrifugal Partition Chromatography
15:50	16:15	P. Eichler/ Technische Universität Berlin: CO ₂ -Absorption in Rotating Packed Beds: Exploring the Capacity Limit
16:30	17:30	Poster Short presentations 30 Posters each 2 min
17:30	19:30	Posterparty with Swiss Aperò
18:00	19:15	Internal Meeting Board Fluid-VT
20:00	open	Meeting Young Fluid Seps

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<u>Start</u>	<u>End</u>	Joint Session	
08:30	08:35	Report from Internal Board meeting FVT	
08:35	09:20	Aydin Akay/Roche: Driving Sustainability at Roche: Achievements, Future Pathways, and Shared Responsibilities	
09:20	09:45	D. Siebe/TU Munich: Thermodynamic non-equilibrium model of a liquid hydrogen tank including gas phase temperature stratification	
09:45	10:10	A. Döß/HZDR: Experimental Investigation and Prediction of Flooding Points of Wire-Mesh Demisters at Relevant Fluid Properties	
10:10	10:40	Coffee Break	
		FVT - Session 2: Processes	WSÜ - Session 2: Fundamentals of Heat and Mass Transfer
10:40	11:05	M. Polyakova/ Ruhr-Uni Bochum: Methodology for early-stage screening and selection of hybrid membrane-distillation processes	N. Germann/Univ. Stuttgart: Heat and mass transfer in thin-film drying of sewage sludge
11:05	11:30	L. Wieczorek/ Ruhr-Uni Bochum: Assessing Distillation Robustness under Variable Feeds: KPI Development and Application to Styrene Recovery in Chemical Recycling	W. Ma/OvGU Magdeburg: Experimental Investigation of Thermal Mixing of Monodisperse Particles in a Rotary Drum
11:30	11:55	C. Lukas/ Uni Ulm: Comparison of liquid split actuation methods for a 3D-printed laboratory scale dividing wall column	J. Dörr/KIT: Mass Transfer during Thermal Removal of Volatiles from Lithium-Ion Batteries for Safe and Efficient Recycling
11:55	12:20	A. Denecke/TUBS: Characterization of Entrained Droplet Size Distributions under Flashing-Feed Conditions with 1-Hexanol	M. S. Idrees/FAU Erlangen: Accurate Determination of the Interfacial Heat Transfer Coefficient during Hot Stamping
12:20	13:20	Lunch Break	

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12:20	13:20	Lunch Break	
		FVT - Session 3: Packing & Phenomena in Columns	WSÜ - Session 3: Thermal Storages
13:20	13:45	M. Xia/ Evonik Operations GmbH: Good Intentions Meet Reality: A Liquid Distributor Story	J. Martinez Garcia/UAS Lucerne: Tracking heat conduction and phase change in solid-liquid PCMs by X-ray tomography and diffraction
13:45	14:10	P. Pötter/ Ruhr-Uni Bochum : Characterization of liquid distribution in structured packings by a novel film thickness sensor in a miniaturized measuring cell	Q. Li/Univ. Stuttgart: System-level optimization of a facade-integrated adsorption -based solar cooling system for high-rise buildings
14:10	14:35	V. Charitatos/ Sulzer Chemtech AG: Digital Twinning of Structured Packing Columns: Modeling Liquid Maldistribution	T. Thelen/Univ. Paderborn: Latent heat storage for industrial applications: Characterization of a lab-scale unit
14:35	15:00	V. Wolf-Zoellner/ TU Leoben: Understanding Methodological Influences and End Effects in Pilot-Scale Packing Characterization across Facilities	E. Schmitt/AUS Lucerne: High-temperature water vapour transmission measurements for polymer liners in cavity thermal energy storage
15:00	15:30	Coffee Break	
		FVT - Session 4: Packing & Phenomena in Columns	WSÜ - Session 4: Heat Exchanger Simulation
15:30	15:55	J. Solà Cervera/ RVT Process Equipment GmbH: Optimization of an Ethlybenzene/Styrene Splitter with RMP SP-type Structured Packings – A Case Study	V. Scheffel/TU Dresden: Numerical simulations of non-uniform flow in shell-and-tube heat exchangers and their practical validation
15:55	16:20	J. Gramann/ Ruhr University Bochum: Investigation of the Influence of Dynamic Operating Conditions on HETP Values Using a Distillative Miniaturized Measuring Cell	L. Hanimann/AUS Lucerne: Next-Generation Industrial Design via Discrete Adjoint CFD: Applications in Flow and Heat Transfer
16:20	16:45	D. Appelhaus/ TU Braunschweig: Characterization of Evaporation-Induced Foam Behavior for Industrial Separation Processes	C. Otto/TU Braunschweig: Micro heat exchanger characterization method deployed to fouling analyses using an effective heat flow
16:45	18:15	Poster Session	
17:00	18:15	Internal Meeting Board WSÜ	
19:00	open	Conference Dinner Restaurant "Wilhelm Tell", Landungsbrücke 9, 6006 Lucerne	

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<u>Start</u>	<u>End</u>	FVT - Session 5: Batch-Distillation	WSÜ - Session 5: Physical Properties
08:30	08:55	M. Wolke/ TU Braunschweig: Solvent Purification from Lithium-Ion Battery Recycling via Fractional Batch-Rectification: Feasibility study	J. Wagner/RPTU Kaiserslautern: Hybrid Models for Physical Consistent Diffusion Coefficient Prediction
08:55	09:20	J. Arweiler/ RPTU Kaiserslautern: A Dataset of Normal and Anomalous Batch Distillation Data for Anomaly Detection	E. A. Schmidt/KIT: Experimental Concept for Investigating the Effective Thermal Conductivity of Packed Beds with Liquid Metals as Fluid Phase
09:20	09:45	A. González de Castilla/ Bayer AG: Requirements, Approach, and Exemplary Application for the Simulation of a Reactive Batch Distillation in Life-Science Industry	M. Kansy/KIT: Innovative fiber optic measurement method for determining the thermal conductivity properties of honeycomb reactors
09:45	10:15	Coffee Break	
		Joint Session: Additive Manufacturing	
10:15	10:40	M. A. Ashour/Univ. Ulm: Understanding Additively Manufactured Surfaces: Topography and Wettability of Polyamide 12 for Lab Scale Distillation Packings	
10:40	11:05	V. Hollenhorst/Univ. Paderborn: Investigation of Surface Roughness Effects on Flow Patterns and Thermal Performance in Additively Manufactured Channels	
11:05	11:30	M. A. Ashour/Univ. Ulm: Overcoming the Hurdles of Miniaturizing Corrugated-Sheet Structures: A Novel 3D-Printed Lab-Scale Distillation Packing	
11:30	12:00	Report from Board Meeting WSÜ Reports from Doctoral Researchers Workshops 2025 Poster Awards Farewell	
12:00	13:00	Lunch at Mensa (optional)	

Poster Heat & Mass Transfer

- P09 L. Elmlinger/ Karlsruhe Institut für Technologie (KIT):
Experimental investigation of mixed convection in a vertical tube flow of liquid metal and of water
- P10 K. Keller/ Karlsruhe Institut für Technologie (KIT):
Influence of the Strut Cross-Sectional Geometry of Periodic Open Cellular Structures (POCS) on Convective Heat
- P11 S. Gietl/ Karlsruhe Institut für Technologie (KIT):
Phase-Field Modelling for Two-Phase Flow Prediction with Physics-Informed Neural Networks
- P12 L. Janning/ Karlsruhe Institut für Technologie (KIT):
Coupled Mass Transport in Multi-Polymer Materials During Drying
- P13 P. Barbig/ Karlsruhe Institut für Technologie (KIT):
Humidity Management, Mass Transfer and Sorption Kinetics in Porous Battery Electrodes
- P14 L. Brandler/ Technische Universität Darmstadt:
Toward Sustainable Working Fluids for Space Applications: Pool Boiling with Water under Reduced Gravity
- P15 J. Dörr/ Karlsruhe Institut für Technologie (KIT):
Unique Experimental Setup for Advanced Investigations on Mass Transport in Battery Recycling and Production
- P16 T. Gambaryan-Roisman/ Technische Universität Darmstadt:
Numerical simulations of Marangoni convection in an evaporating water-ethanol mixture film on a structured substrate
- P17 L. Hanimann/ Lucerne University of Applied Sciences Engineering and Architecture:
Advanced Modeling of Bio-Reactor Processes
- P18 F. Wermelinger/ Lucerne University of Applied Science and Arts:
Robust Fluid-Structure-Contact Interaction for the Prediction of Cavitation in Fluid Devices
- P19 N. Staubli/ Lucerne University of Applied Science and Arts:
Horizontal Borehole Thermal Energy Storage: Design Parameters and Thermal Performance
- P20 Q. Li/ University of Stuttgart:
System-Level Optimization of a Facade-Integrated Adsorption-Based Solar Cooling System for High-Rise Buildings
- P21 L. Janning/ Karlsruhe Institut für Technologie (KIT):
Mass Transport During Production of Catalyst Coated Membranes with Multiple Solvents for Hydrogen Applications
- P22 P. Barbig/ Karlsruhe Institut für Technologie (KIT):
Guiding Mass Transport Mechanisms in Post-Drying Processes of Lithium-Ion Battery Manufacturing
- P23 E. Liu/ Otto von Guericke University:
Mechanistic insights into single particle calcination via adaptive pore network modeling
- P24 P. Chittem/ Friedrich-Alexander-Universität Erlangen-Nürnberg:
Characterization of Particle Diffusion Under Confined Conditions by Using Dynamic Light Scattering (DLS)
- P25 X. Zhang/ RPTU Kaiserslautern:
Multiscale Modeling of Molecular Thermodynamics and Continuum-Scale Simulations for describing Fluid Flow
- P26 X. Zhang/ RPTU Kaiserslautern:
Entropy scaling for modeling the thermal conductivity and diffusion coefficients
- P27 S. Schäfer/ TU Hamburg, Inst. für Thermodyn.:
Experimentelle Untersuchung der ein- und zweiphasigen Wärmeübergänge und Druckverluste in parallelen Minikanälen
- P28 M. Deeb/ Univ. Kassel:
Übersicht zu Berechnungsmethoden zum Wärmeübergang beim Sieden
- P29 H. Margraf/ Univ. Kassel:
Wärmeübergang bei der Verdampfung von Methanol und n-Pentan in Kapillarstrukturen
- P30 F. Meral/ Univ. Kassel:
Analyse des Wärmeübergangs von Kohlenstoffdioxid (R744) beim Sieden
- P31 C. Berger/ Univ. Bayreuth:
Experimental investigation of heat transfer during boiling of R1233zd(E) on a tube bundle
- P32 B. Fumey/Lucerne University of Applied Sciences and Arts:
Sorption Storage Heat Pump: Operating Results of a Demonstrator System
- P33 S. Benkert/ Fraunhofer Institut fuer solare Energiesysteme:
Investigation of Condensing/Evaporating Heat Transfer in a High-Temperature Heat Pump generating Steam

Poster Fluid Separations

- P01 D. Appelhaus/ TU Braunschweig:
YoungFluidSeps - Early Career Fluid Dynamics and Separation Engineers
- P02 Ö. Boz/ Paderborn University:
Integration of Direct Electric Heating with 3D-Printed Packings in Separation Columns
- P03 S. Wurmannstätter/ Technical University of Munich, TUM School of Engineering and Design:
Numerical and Experimental Investigation of Liquid Distribution and Wetting Behavior of Innovative Structured
- P04 F. Engel/ Technical University of Munich:
Hydraulic Investigations on Push Valves in a DN1200 Tray Column
- P05 C. Maier/ Technical University of Munich, TUM School of Engineering and Design:
The Influence of Column Tilting on the Hydraulic Performance of Tray Columns
- P06 L. Arzner/ Ulm University:
Overcoming fouling in randomly packed columns for ammonia distillation from wastewater
- P07 P. Franke/ Paderborn University:
Identification of multiple steady states in reactive absorption columns equipped with structured packings
- P08 S. Brinkmann/TH Bingen:
A Novel 3D-Printed Absorption Column for CO₂ Capture and Syngas Purification Studies