



FRENCH-GERMAN ADSORPTION INITIATIVE

SCIENTIFIC PROGRAM

**Duisburg,
Germany 24-26
March 2026**

Welcome

The 2nd Adsorption Conference organized by the “French-German Adsorption Initiative” will be held in Duisburg (Germany) between March 24th and 26th, 2026. The conference is supported by the German Adsorption Group (DECHEMA) and the French “Association Francaise de l’Adsorption (AFA)”. The aim of the conference is to bring together and foster collaboration between scientists from these two communities. However, we see this joint initiative as a platform that could be extended to all European countries in the very near future. Therefore, we are open for presentations from France, Germany and neighboring countries.

Adsorption phenomena play a crucial role in many processes, with applications ranging from catalysis to treatment of waste streams. Current research ranges from the development of innovative adsorbent materials to using molecular modeling tools to predict adsorption behavior. The scope of adsorption research is also expanding into new fields, including energy systems, environmental protection, and the life sciences.

As we want to cover the whole bandwidth from basic research to applied technology, we invite people both from academia and industry to present their topics. This creates an excellent environment for the exchange of ideas and knowledge between scientists and practitioners in the field.

Benoit Coasne (Chairman),
Dieter Bathen (Chairman),
Benjamin Claessens (Junior-Chairman)
& Christian Bläker (Junior -Chairman)

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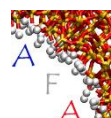
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- Susanna Valencia (Spain)
- Cecile Vallieres (France)

Program Overview

Tuesday, March 24 th 2026			Wednesday, March 25 th 2026			Thursday, March 26 th 2026		
Room	MD 162	MC 122	Room	MD 162	MC 122	Room	MD 162	MC 122
			9.00	Plenary: Calero		9.00	Plenary: Denayer	
			9.45	Coffee Break		9.45	Coffee Break	
			10.00	S5: Flexible Adsorbents	S6: Adsorption of Halogenated Hydrocarbons	10.00	S11: PSA & VPSA Processes	S12: MOFs & COFs
				Kaskel	Cabral Borges		Obermeier	Aumond
				Trabolsi	Menk		Starke	Duplessin
				Van Asche	Chester		Chiari	Jacq
				Smits	Gambo		De Wereild	Maurin
			11.40	Coffee Break		11.40	Coffee Break	
13.00	Welcome / Registration / Built up		11.55	S7: Liquid Phase Adsorption	S8: Adsorption Thermodynamics II	11.55	S13: Bioprocesses & Chromatography	S14: Application of Activated Carbons II
				Suvorova	Ben Amour		Epping	Muthmann
				Daniele	Chanut		Krekel	Ania
				Reinert	Dasgupta		Zarei	Daniel
13.30	Opening Ceremony		13.10	Lunch & Poster Exhibition		13.10	Closing Remarks & Poster Prices	
14.00	Plenary: Voss		14.00	Plenary: Fierro		13.30	Lunch Package (Take Away)	
14.45	Coffee Break		14.45	Coffee Break				
15.00	S1: CO ₂ -Capture & DAC I	S2: Application of Zeolites	15.00	S9: Adsorbent Characterization	S10: CO ₂ -Capture & DAC II			
	Keil	Schmit		Ehrling	Tannert			
	Aztiria	Troncy		Sandner	Kofmann			
	Duclaux	Grimaud		Makowski	Osmic			
	Gupta	Bezverkhyy		Abel	Deroche			
16.40	Coffee Break		16.40	Coffee Break				
17.00	S3: Adsorption Thermodynamics I	S4: Application of Activated Carbons I	17.00	Open Discussion "Adsorption in Europe"				
	Gommes	Verdier						
	Baroncha	Marcinek						
	Miqueu	Bölte						
18.15	Poster Exhibition & Poster Party		18.00		Meeting German FG Adsorption			
			19.30	Gala Diner				

Scientific Program



Tuesday, 24th March

13:00 Welcome / Registration / Built up

13:30 Opening Ceremony

14:00 – 14:45 Plenary I – MD 162

Navigating a World in Transition: The Role of Adsorptive Processes in Carbon Capture and Energy Transformation

C. Voss | Linde GmbH (DE)

14:45 – 15:00 Coffee Break

15:00 – 16:40 – Oral Sessions S1 + S2

Oral Session 1 – CO₂-Capture & Direct Air Capture I – MD 162

15:00 -15:25: OS.01.01

Investigations on the influence of process conditions in chemisorptive CO₂-capture from industrial gas streams

P. Keil | OTH Regensburg (DE)

15:25 -15:50: OS.01.02

Stability of Amine-Functionalized Sorbents for Direct Air Capture in the presence of O₂, CO₂, and H₂O at high temperature

T. Aztiria, A. Marberger, D. Albani | Climeworks AG (CH)

15:50 -16:15: OS.01.03

Capture and separation of CO₂ from N₂ using activated carbons prepared from N-rich precursors

K. F. N'Gole^{a, b}, R. Morales-Ospino^b, L. Reinert^a, B. David^a, V. Nicolas^b, J. Nicolle^c, F. Condé^c, A. Celzard^b, V. Fierro^b, L. Duclaux^a | ^a Université Savoie Mont Blanc (FR), ^b Université de Lorraine (FR), ^c Université d'Orléans (FR)

16:15 -16:40: OS.01.04

Direct Air Capture of CO₂ Using Amine-appended Metal-Organic Frameworks

M. Gupta, G. Mouchaham, C. Serre | PSL university (FR)

Oral Session 2 – Applications of Zeolites – MC 122

15:00 -15:25: OS.02.01

Experimental screening of zeolites for application in an industrial sorption tumble dryer

H. Schmit, T. Schubert, E. Lävemann, S. Hiebler | ZAE Bayern (DE)

15:25 -15:50: OS.02.02

Influence of cation Exchange on Low-Pressure Adsorption of CH₄, CO₂, N₂ and Ar in 13X Faujasites

R. Troncy^{a,b}, H. Nouali^{a,b}, C. Vaultot^{a,b}, S. Gareau^{a,b}, L. Vidal^{a,b}, B. Lebeau^{a,b}, R. Gadiou^{a,b} | ^a Université de Haute Alsace (FR), ^b Université de Strasbourg (FR)

15:50 -16:15: OS.02.03

Insights into Krypton Sequestration Mechanism in a Tailored LTA Zeolite

C. Grimaud, C. Daniel, A. Tuel, A. Mesbah, D. Farrusseng | IRCELYON, CNRS (FR)

16:15 -16:40: OS.02.04

D₂/H₂ separation on zeolites under cryogenic conditions: revealing the mass transfer mechanism through breakthrough curves analysis

C. Coutier^{a,b}, C. Cabaud^b, I. Bezverkhyy^a | ^a Laboratoire Interdisciplinaire Carnot de Bourgogne (FR), ^b Laboratoire Interdisciplinaire Carnot de Bourgogne (FR)

16:40 – 17:00 Coffee Break

17:00 – 18:15 – Oral Sessions S3 + S4

Oral Session 3 – Adsorption Thermodynamics I – MD 162

17:00 -17:25: OS.03.01

Small-Angle Scattering Insights into the Equilibrium or Metastable Nature of Capillary Condensation

A.F. Haidar^a, A. Belet^a, B. Goderis^b, A. Léonard^a, C.J. Gommès^a | ^a University of Liège (BE), ^b Polymer Chemistry and Materials (BE)

17:25 -17:50: OS.03.02

Relating phase transitions of confined materials and topology of pore network

G. Baroncha¹, R. Valiullin¹, E. Kikkinides² | ¹ Leipzig University (DE), ² Aristotle University of Thessaloniki, (GR)

17:50 -18:15: OS.03.03

A non-local Density Functional Theory for water adsorbed in nanoporous materials of arbitrary geometry

A. Barthes, D. Grégoire, C. Miqueu | Université de Pau et des Pays de l'Adour (FR)



Oral Session 4 – Application of Activated Carbons I – MC 122

17:00 -17:25: OS.04.01

Resource and Sustainability Considerations in the Activated Carbon Industry

R. Verdier | Carbon Service & Consulting GmbH & Co. KG (DE)

17:25 -17:50: OS.04.02

Advanced textural characterization of Carbon Molecular Sieves complementing the development of material structure and process performance correlations

A. Marcinek^a, C. Vorndran^b, M. Thommes^b | ^a CarboTech AC GmbH (DE), ^b Friedrich-Alexander University of Erlangen-Nuremberg (DE)

17:50 -18:15: OS.04.03

Challenges and opportunities in the industrial reactivation of PFAS-laden granular activated carbon

J.-H. Bölte^a, R. Bischof^a, S. Zillner^a, M. Müller^b, R. Heb^b | ^a Donau Chemie AG (AT), ^b Donau Carbon GmbH (DE)

18:15 – Poster Exhibition & Poster Party

Wednesday, 25th March

9:00: 09:45 Plenary II – MD 162

Bridging Scales: From Molecular Modelling to Adsorption-based Processes

S. Calero | Eindhoven University of Technology (NL)

09:45 – 10:00 Coffee Break

10:00 – 11:40 – Oral Sessions S5 + S6

Oral Session 5 – Flexibel Adsorbents – MD 162

10:00 -10:25: OS.05.01

Gas Separation via Flexible MOFs

S. Kaskel | TU Dresden (DE)

10:25 -10:50: OS.05.02

Temperature-Dependent CO₂ and N₂ Adsorption on 2D Hofmann Clathrates Exhibiting Spin-Crossover Properties

K. Trabolssi^a, L. Perrier^a, T. Tassaing^b, N. Brefuel^c, C. Miqueu^a | ^a Universite de Pau et des Pays de l'Adour (FR), ^b CEMES - CNRS (FR)

10:50 -11:15: OS.05.03

Exploring adsorptive window effects: Unusual adsorption and diffusion patterns for CHA and AEI zeolites

T. R.C. Van Assche^a, J. Pham Van^a, N. De Witte^a, S. Robijn^b, M. Dusselier^{*}, J. F.M. Denayer^a | ^a Vrije Universiteit Brussel (BE), Center for Sustainable Catalysis and Engineering (BE)

11:15 -11:40: OS.05.04

Development of a novel swing-adsorption gas separation technique using force-responsive carbons

R. Smits; N. Kosinov | Eindhoven University of Technology (NL)

Oral Session 6 – Adsorption of Halogenated Hydrocarbons – MC 122

10:00 -10:25: OS.06.01

Predictive breakthrough curve model for methyl iodide adsorption by activated carbons employed in the nuclear context

F. Cabral Borges Martins^{a,b}, M. Chebbi^a, B. Azambre^b | ^a Autorité de Sûreté Nucléaire et de Radioprotection (FR), ^b Université de Lorraine (FR)



10:25 -10:50: OS.06.02

Investigation of the different functionalities of inhalation anesthetics on adsorption

M. Menk, C. Bläker, C. Pasel, D. Bathen | University of Duisburg-Essen (DE)

10:50 -11:15: OS.06.03

Metal-organic frameworks for waste anesthetic emissions: data-driven discovery and material testing

A. M. Chester^{a,b}, S. Molisso^{a,b}, C. Wilson^{a,b}, P. Z. Moghadam^{a,b} | ^a University College London (UK), ^b Manufacturing Futures Lab (UK)

11:15 -11:40: OS.06.04

New method for quantitative thermal gravimetric analysis per compound applied to adsorption of organochlorines on faujasite

S. B. Gambo¹, E. Hessou², N. P. Martin¹, L. Tortet¹, Y. Zerega¹, M. Badawi², V. Wernert¹ | ¹ Aix-Marseille University (FR), ² Laboratoire Lorrain de Chimie Moléculaire (FR)

11:40 – 11:55 Coffee Break

11:55 – 13:10 – Oral Sessions S7 + S8

Oral Session 7 – Liquid Phase Adsorption – MD 162

11:55 -12:20: OS.07.01

Understanding the adsorption mechanisms of LiCl extraction on LiAl-LDH

A. Suvorova^a, D. Edouard^b, L. Giardella^c, A. Tuel^a, D. Farrusseng^a | ^a Univ Lyon, CNRS, IRCELYON (FR), ^b Univ Lyon CNRS, CP2M (FR), ^c Saint-Gobain Research Provence (FR)

12:20 -12:45: OS.07.02

Nanoparticle Organic Frameworks (NOF): A Breakthrough Technology for the Selective Recovery of Critical Metals from WEEE

S. Asaad^a, G. Arrachart^b, S. Pellet-Rostaing^b, S. Daniele^a | ^a University Lyon (FR), ^b ICSM (FR)

12:45 -13:10: OS.07.03

Adsorption/desorption properties of chitosan-based passive samplers for the analysis of norovirus in different types of water

L. Reinert^a, C. Gibeaux^a, L. Duclaux^a, D. Delafosse^b, D. Fontvieille^b | ^a Université Savoie Mont Blanc (FR), ^b Laboratoire Normec-Abiolab (FR)

Oral Session 8 – Adsorption Thermodynamics II – MC 122

11:55 -12:20: OS.08.01

Adsorption thermodynamics and kinetics of simple and complex fluids: Effect of surface saturation, reservoir depletion and lateral interactions

N. Ben Amor^{a,b}, D. Bauer^a, B. Braconnier^a, Benoit Coasne^{b,c} | ^a IFP Energies Nouvelles (FR), ^b Université Grenoble Alpes (FR), ^c Institut Laue Langevin (FR)

12:20 -12:45: OS.08.02

A temperature-induced desorption approach for the measurement of multicomponent isotherms in nanoporous materials

N. Chanut, R. Van Loenhout, C. Parra Cabrera, M. Sugihara, J. Fernandes, M. Verstreken, L. Boullart, R. Ameloot | Center for Membrane Separations, Adsorption, Catalysis, and Spectroscopy (BE)

12:45 -13:10: OS.08.03

Fluid Transport in Nanoporous Materials and at their Interface: Intermittent Brownian Motion and Surface Resistance

S. Dasgupta, B. Coasne | University of Grenoble Alpes (FR)

13:10 – 14:00 Lunch & Poster Exhibition

14:00: 14:45 Plenary III – MD 162

CO₂ Adsorption Loss of Activated Carbons under Humidity

R. Morales-Ospino, M. Aoun, J. Castro-Gutierrez, M.T. Izquierdo, A. Celzard, V. Fierro | Université de Lorraine (FR)

14:45 – 15:00 Coffee Break

15:00 – 16:40 – Oral Sessions S9 + S10

Oral Session 9 – Adsorbent Characterization – MD 162

15:00 -15:25: OS.09.01

The limits of surface and pore volume characterization

S. Ehrling | 3P Instruments (DE)

15:25 -15:50: OS.09.02

Pore Size Analysis by Advanced NMR Relaxometry and Gas Adsorption

L. Sandner, C. Vorndran, M. Thommes | Friedrich-Alexander-Universität Erlangen-Nürnberg (DE)



15:50 -16:15: OS.09.03

Characterization of Porous Materials Using Quasi-Equilibrated Temperature-Programmed Desorption and Adsorption (QE-TPDA) of Volatile Compounds

Wacław Makowski | Jagiellonian University (PL)

16:15 -16:40: OS.09.04

Using calorimetry of H₂ adsorption to identify nature of Pt in a novel non-reduced Pt/Al₂O₃ catalyst for H₂ combustion at room temperature

N. Abel^{a,b}, P. Bargiela^c, M. Eternot^a, A. Mesbah^a, C. Gomez^b, F. Aires^a, N. Essayem^a | ^a Université Claude Bernard Lyon (FR), ^b Produits Berger (FR), ^c Université de Pau et des Pays de l'Adour (FR)

Oral Session 10 – CO₂-Capture & Direct Air Capture II – MC 122

115:00 -15:25: OS.10.01

Modular Pre-Filter System for Direct Air Capture (DAC)

N. Tannert, L. Henning, M. Potz | Hengst SE (DE)

15:25 -15:50: OS.10.02

NMR relaxometry applied to drying and wetting properties of Ion Exchanged Resins used in Direct Air Capture

N. Kofman^a, P. Coussot^b, B. Maillat^b, | ^a Climeworks AG (CH), ^b Laboratoire Navier (FR)

15:50 -16:15: OS.10.03

Influence of water and porous carrier on the CO₂ capture mechanism of amine- and carbonate-based solid sorbents

E. Osmić^{a,b}, H. Klein^b, P. Keil^a | ^a Technical University of Applied Sciences Regensburg (DE), ^b Technical University of Munich (DE)

16:15 -16:40: OS.10.04

Computational tuning of zeolite chemical composition for CO₂ capture

I. Déroche^{a,b}, T. Örs^{a,b}, S. Bourrelly^c, J.-L. Paillaud^{a,b} | ^a Université de Haute Alsace (FR), ^b Université de Strasbourg (FR), ^c Aix-Marseille Université (FR)

16:40 – 17:00 Coffee Break

17:00 – 18:00 Open Discussion “Adsorption in Europe”

18:00 – 19:00 Meeting German FG Adsorption

19:30 Gala Dinner

Scientific Program



Thursday, 26th March

9:00: 09:45 Plenary II – MD 162

Electrical Swing Adsorption for the Liquid Phase Adsorptive Recovery of Isobutyric acid

A. Aydani, H. Maghsoudi, K. Karimi, J. Denayer | Vrije Universiteit Brussel (BE)

09:45 – 10:00 Coffee Break

10:00 – 11:40 – Oral Sessions S11 + S12

Oral Session 11 – PSA & VPSA Processes – MD 162

10:00 -10:25: OS.11.01

Reliable KPI Measurement in PSA Pilot and Commercial Plants

S. Obermeier, C. Voss | Linde GmbH (DE)

10:25 -10:50: OS. 11.02

Dynamic Cycle Control in Adsorptive Separation Processes for Enhanced Energy Efficiency in Air Separation Units

A. Starke, C. Norton | Messer SE & Co. KGaA (DE)

10:50 -11:15: OS. 11.03

Applications of Artificial Intelligence tools on N₂-PSA Plants

G. Chiari^a, M. Lombardi^b, J. Guderian^a, D. Bathen^c | ^a Muenster University of Applied Sciences (DE), ^b University of Bologna (IT), ^c University of Duisburg-Essen (DE)

11:15 -11:40: OS. 11.04

Optimization of a VPSA CO₂ pre-concentration unit using 13X/MOFs for cryogenic CO₂ capture

A. Henrotin, A. Costa, N. Heymans, G. De Weireld | University of Mons (BE)

Oral Session 12 – MOFs & COFs – MC 122

10:00 -10:25: OS.12.01

MIL-160: A Green and High-Performance Adsorbent for Water Harvesting and Chillers

T. Aumond^a, F. Meunier^b, M. Bonneau^a, D. Farrusseng^a | ^a Université de Lyon (FR), ^b Institut français du froid industriel et de génie climatique (FR)



10:25 -10:50: OS. 12.02

Putting ZIF-8 in Shape: ZIF-8 / Polymer Extrudates for Gas Phase Alcohol/Water Separations

J. Duplessis-Kergomard, N. P. Martin, I. Beurroies, B. Claessens | Aix-Marseille Université (FR)

10:50 -11:15: OS. 12.03

H₂O and CO₂ adsorption in different MOFs: experimental isotherms, heats of adsorption and their modeling

C. Jacq^{a,b}, S. R. Chavan^a, A. Rajendran^c, C. Miqueu^b, F. Plantier^b | ^a Total Energies (FR), ^b Université de Pau et des Pays de l'Adour (FR), ^c University of Alberta (CA)

11:15 -11:40: OS. 12.04

Advancing MOF Simulations with Machine-Learned Potentials

D. Fan, S. Bonakala, F. Lopes Oliveira, M. Wahiduzzaman, G. Maurin | Univ. Montpellier (FR)

11:40 – 11:55 Coffee Break

11:55 – 13:10 – Oral Sessions S13 + S14

Oral Session 13 – Bioprocesses & Chromatography – MD 162

11:55 -12:20: OS.13.01

Optimal stratification improves efficiency in fixed-bed separation

A. Eppink, H. Briesen | Technical University of Munich (DE)

12:20 -12:45: OS. 13.02

Adsorption phenomena on Activated Carbons in Bioprocesses

C. Krekel, D. Postertz, A. Jupke | RWTH Aachen University (DE)

12:45 -13:10: OS. 13.03

Mixture breakthrough curve analysis to parameterize a modified multi-component BET isotherm model

S. Zarei, J. W. Lee, A. Seidel-Morgenstern | Max Planck Institute for Dynamics of Complex Technical Systems (DE)

Oral Session 14 – Application of Activated Carbons II – MC 122

11:55 -12:20: OS.14.01

Desulfurization of Natural Gas and Biogas using impregnated Activated Carbons – Industrial Perspective

Johanna Muthmann | CarboTech AC GmbH (DE)



12:20 -12:45: OS. 14.02

Carbon Filters for the analysis of stratospheric organic aerosols from weather balloon flights in France

G. Weber^a, R. Benoit^b, P. Dagaut^b, G. Berthet^b, E. Raymundo-Piñero^a, C. O. Ania^a |
^a CEMHTI CNRS, Univ. Orléans, Orléans (FR), ^b ICARE CNRS, Univ. Orléans (FR),
^c LPC2 CNRS, Univ. Orléans (FR)

12:45 -13:10: OS. 14.03

Assessing Thermodynamic Equilibrium and Corrective approach for VOCs Adsorption on Microporous Activated Carbon

C. Daniel^a, T. Aumond^a, C. Collomb^a, B. Coasne^{b,c}, D. Farrusseng^a | ^a Université de Lyon (FR), ^b Univ. Grenoble Alpes (FR), ^c Institut Laue Langevin (FR)

13:10 – 13:30 Closing Remarks & Poster Prices

13:30 Lunch Package (Take Away)