

22-25 SEPTEMBER 2025

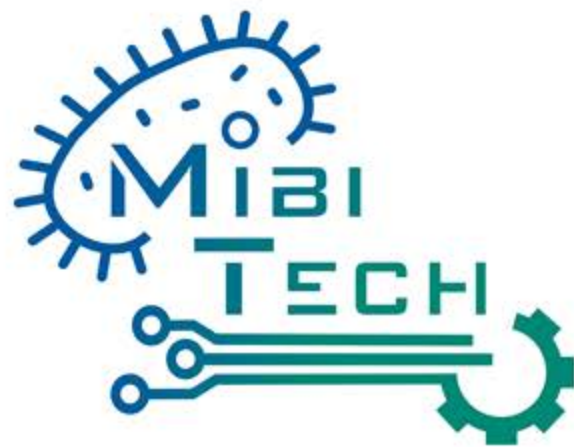
LEIPZIG | GERMANY

ISAM 2025

13th International Symposium
on Anaerobic Microbiology

Frontiers in
Microbiology

A journal by  **frontiers**



MONDAY, 22 September		
12:30 – 18:00	Registration (KUBUS Foyer)	
14:30 – 14:45	Arrival (KUBUS Foyer)	
14:45 – 15:15	WELCOME AND OPENING SESSION (KUBUS Room 1AB) – Chairs: Marcell Nikolausz / Sabine Kleinsteuber	
15:00 – 15:15	Heribert Insam (Biotreat GmbH, Innsbruck)	MikroMondo, a science center featuring microorganisms
15:15 – 16:00	KEYNOTE 1: Andreas Brune MPI for Terrestrial Microbiology, Marburg	Lateral gene transfer as evolutionary driver of reductive acetogenesis in termite guts
16:00 – 16:30	Coffee Break (KUBUS Foyer)	
16:30 – 18:00	SESSION 1: Gut Microbiology (Lectures L1 – L6) (KUBUS Room 1AB) – Chairs: Andreas Brune / Nico Jehmlich	
16:30 – 16:45	L1: Lilian Prinsen KU Leuven	Anaerobes in the gut microbiome of wood-eating beetle larvae for unlocking the potential valorisation of residual lignocellulosic biomass
16:45 – 17:00	L2: Stéphanie Perret Aix-Marseille University – CNRS	Physiological and proteomic studies show that <i>Ruminiclostridium cellulolyticum</i> is specialized in the utilization of xylan
17:00 – 17:15	L3: Samantha Joan Noel Aarhus University	Isolation of hydrogenotrophic bacteria and their impact on hydrogen levels in rumen fluid under inhibited methanogenesis conditions
17:15 – 17:30	L4: Maximilienne Allaart University of Tübingen	Lactate stereoisomers are metabolized differently in the gut microbiome
17:30 – 17:45	L5: Tomaž Accetto , University of Ljubljana	<i>Prevotella</i> sweet tooth may just not be the only answer
17:45 – 18:00	L6: Blaz Stres National Institute of Chemistry, Ljubljana	Integrating gut microbiome information layers: from constructed variables to single mutations and high-throughput microbiome activity kinetics
18:00	Welcome Reception (KUBUS Foyer)	

TUESDAY, 23 September

8:30 – 10:30	Registration (KUBUS Foyer)	
9:00 – 9:45	KEYNOTE 2: Maria Westerhom Swedish University of Agricultural Sciences	Syntrophic bacteria and syntrophic interactions in anaerobic digestion systems
9:45 – 10:30	SESSION 2: Syntrophic Bacteria (Lectures L7 – L8) – Chairs: Maria Westerholm / Sabine Kleinsteuber	
9:45 – 10:00	L7: Yanlin Cai , University of Konstanz	Amino acid metabolism of the thermophilic acetogen <i>Thermacetogenium phaeum</i>
10:00 – 10:15	L8: Minjae Kim Pukyong National University, Busan	Effect of magnetite nanoparticles on recovery of continuous anaerobic digestion from propionic and acetic acids accumulations at varying pH conditions
10:15 – 10:30	POSTER PITCH 1	
10:30 – 11:15	Coffee Break & Poster Session (KUBUS Foyer)	
11:15 – 12:45	SESSION 3: Biogas Microbiology I (Lectures L9 – L13) – Chairs: Andreas Wagner / Marcell Nikolausz	
11:15 – 11:30	L9: Seonmin Kang Pukyong National University, Busan	Improved process stability and methanogen enrichment in magnetite-supplemented anaerobic sequencing batch reactor treating catechol wastewater
11:30 – 11:45	L10: Christian Margreiter University of Innsbruck	Evaluating the impact of bio-based gasification chars and activated carbon on anaerobic digestion in wastewater treatment
11:45 – 12:00	L11: Elliot Guerra-Blackmer UFZ Leipzig	Impact of increasing ratio of sugar beet silage feed in laboratory scale biogas reactors’ microbial community structure
12:00 – 12:15	L12: Frederik Bade UFZ Leipzig	Hydrolytic enzyme activities during increasing organic loading rate in laboratory scale biogas reactors
12:15 – 12:30	L13: Maria Chiara Valerin , University of Padua	Microbiological and physicochemical surveillance of full-scale biogas plants
12:30 – 12:45	POSTER PITCH 2	

TUESDAY, 23 September		
12:45 – 14:45	Lunch Break & Poster Session (KUBUS Foyer) – Chairs: Sabine Podmirseg /Nico Jehmlich	
14:45 – 16:15	SESSION 4: Anaerobic Fungi (Lectures L14 – L19)	
14:45 – 15:00	L14: Sabine Podmirseg , University of Innsbruck	Anaerobic gut fungi: the story of a unique research relationship
15:00 – 15:15	L15: Etelka Kovács , University of Szeged	The happy marriage of methanogenic archaea and anaerobic fungi
15:15 – 15:30	L16: Anke Neumann Karlsruhe Institute of Technology	Physiological and metabolic analysis of six anaerobic gut fungi
15:30 – 15:45	L17: Sophia Strobl , University of Innsbruck	Gut feeling: Isolation of anaerobic gut fungi from unconventional hosts
15:45 – 16:00	L18: Jolanda van Munster Scotland’s Rural College, Edinburgh	Anaerobic fungi <i>Neocallimastix</i> , <i>Caecomyces</i> and <i>Piromyces</i> each have a distinct role in the degradation of plant biomass
16:00 – 16:15	L19: Louisa Edge Scotland’s Rural College, Edinburgh	<i>Neocallimastix frontalis</i> effectively degrades starch via multiple amylases; an initial look into the diversity of starch metabolic capability between genera of anaerobic gut fungi
16:15 – 16:45	Coffee Break (KUBUS Foyer)	
16:45 – 18:00	SESSION 5: Biogas Microbiology II (Lectures L20 – L24) – Chairs: N.N. / Carsten Vogt	
16:45 – 17:00	L20: Beatriz Diniz TU Delft	Unravelling the influence of pH and alkalinity in haloalkaliphilic methanogenic community dynamics
17:00 – 17:15	L21: Olivier Chapleur INRAE Antony	Longitudinal multiomics analysis of anaerobic microbial community to a pulse salinity disturbance
17:15 – 17:30	L22: Roland Wirth HUN-REN Biological Research Centre, Szeged	Comparative meta-omics analysis of antibiotic resistance in anaerobic systems treating agricultural biomass or municipal wastewater
17:30 – 17:45	L23: Herald Wilson Ambrose Aarhus University	Impact of chemical and biological additives on microbial community and methane emissions in pig slurry storage
17:45 – 18:00	L24: Marcell Nikolausz , UFZ Leipzig	Microbial community dynamics triggered by in situ biomethanation

WEDNESDAY, 24 September

9:00 – 9:45	KEYNOTE 3: Alexander Loy , University of Vienna	Hunting for hidden sulfur-cycling microbes and metabolisms
9:45 – 10:30	SESSION 6: Anaerobic Sulfur Cycle (Lectures L25 – L26) – Chairs: Alexander Loy / Carsten Vogt	
9:45 – 10:00	L25: Faith I. Oni UFZ Leipzig	Functional generalists and key degraders: Genome-resolved niche analysis in a long-term sulfate-reducing benzene-degrading consortium
10:00 – 10:15	L26: Vít Procházka Masaryk University, Brno	Evaluating the biotechnological potential of anoxygenic phototrophic bacteria for desulfurization
10:15 – 10:30	POSTER PITCH 3	
10:30 – 11:15	Coffee Break & Poster Session (KUBUS Foyer)	
11:15 – 12:45	SESSION 7: Enzymes of Anaerobes (Lectures L27 – L31) – Chairs: Darja Deobald / Ivonne Nijenhuis	
11:15 – 11:30	L27: Johann Heider , Marburg University	Tungsten-dependent aldehyde oxidoreductases: reaction mechanism and applications
11:30 – 11:45	L28: Marie Eberwein UFZ Leipzig	Cobalt complexes enable anodic cultivation of <i>Dehalococcoides mccartyi</i> strain CBDB1 in a bioelectrochemical cell
11:45 – 12:00	L29: Jesica M. Soder-Walz UFZ Leipzig	Anaerobic fermentation of dichloromethane in <i>Dehalobacterium formicoaceticum</i> strain EZ94 is driven by methyltransferases
12:00 – 12:15	L30: Fidel Ramirez Marburg University	The ATP-dependent methyl-coenzyme M reductase activation complex from <i>Methanococcus maripaludis</i>
12:15 – 12:30	L31: Andja Mulllaymeri , University of Innsbruck	Cofactor F420-polyglutamate-chain-length profiles in methanogens
12:30 – 14:30	Lunch Break & Poster Session (KUBUS Foyer)	

WEDNESDAY, 24 September

14:30 – 16:00	SESSION 8: Microbes in Anoxic Environments (Lectures L32 – L37) – Chairs: Heribert Insam / Ivonne Nijenhuis	
14:30 – 14:45	L32: Giulia Fiorito, ETH Zurich	Microbial communities influencing methane cycling in temperate Swedish peatlands
14:45 – 15:00	L33: Marion Holmière, Aix-Marseille University	How to handle the lignin in absence of oxygen: a bacterial lesson
15:00 – 15:15	L34: Kristine Røsdal NMBU, Ås	Deciphering microbial strategies for lignocellulose degradation under denitrifying conditions
15:15 – 15:30	L35: Shuting Li UFZ Leipzig	Anaerobic metabolization of ¹³ C-labeled <i>Pseudomonas alloputida</i> cells by thermophilic microorganisms from aquifer sediments
15:30 – 15:45	L36: Antonio Grimalt-Alemany, DTU Lyngby	Quorum-sensing-mediated biofilm formation in anaerobic microbial communities
15:45 – 16:00	L37: Chang Ding UFZ Leipzig	Reactor-based enrichment of an autotrophic <i>Paracoccus</i> -dominated culture using hydrogen and nitric oxide
16:00 – 16:30	Coffee Break (KUBUS Foyer)	
16:30 – 17:30	SESSION 9: Biotechnological Applications of Anaerobes (Lectures L38 – L41) – Chairs: Stefano Campanaro / Heike Sträuber	
16:30 – 16:45	L38: Mathilde Bourgeois INRAE Narbonne	Eco-engineering strategies to target propionic acid production from food waste fermentation
16:45 – 17:00	L39: Selina Haller University of Innsbruck	BIOcubed: Biosynthesis of green hydrogen using a newly discovered microorganism
17:00 – 17:15	L40: Maria Gaspari Hellenic Agricultural Organisation Dimitra	Investigating resilience of biological methanation to prolonged hydrogen starvation
17:15 – 17:30	L41: Omer Uzun Boğaziçi University, Istanbul	Unlocking the potential of lignocellulosic waste: Alkali pre-treatment to sustainable chemicals in the circular bio-economy context
19:00	Conference Dinner at FELIX	

THURSDAY, 25 September		
9:30 – 10:15	KEYNOTE 4: Diana Sousa Wageningen University & Research	Reimagining syngas fermentation: Innovative production routes through microbial discovery and synthetic design
10:15 – 11:00	SESSION 10: Gas Fermentation (Lectures L42 – L44) – Chairs: Diana Sousa / Heike Sträuber	
10:15 – 10:30	L42: Giacomo Antonicelli Istituto Italiano di Tecnologia, Turin	Unlocking sustainable bio-hexanol production with <i>Clostridium carboxidivorans</i> through adaptive evolution and process optimization
10:30 – 10:45	L43: Kira Sofie Baur Ulm University	Quantification of an anaerobic synthetic co-culture containing <i>Acetobacterium woodii</i> and <i>Clostridium drakei</i>
10:45 – 11:00	L44: Estelle M. Goonesekera , DTU Lyngby	A new point of view: studying syngas biomethanation biofilms in flow-chambers
11:00 – 11:30	Coffee Break (KUBUS Foyer)	
11:30 – 12:15	SESSION 11: Power-to-Gas (Lectures L45 – L47) – Chairs: Marcell Nikolausz / Sabine Kleinsteuber	
11:30 – 11:45	L45: Wenyo Gu EPFL, Lausanne	From methanogen physiology to a robust Power-to-Gas process: addressing intermittent substrate supply and oxygen tolerance
11:45 – 12:00	L46: Xavier Goux LIST Hautcharage	Microbiology of the mesophilic ex-situ biological methanation: influence of operating parameters such as inoculum and scaling up
12:00 – 12:15	L47: Stefano Campanaro University of Padua	Phage-driven microbial adjustments under different gas retention times in pilot-scale CO ₂ biomethanation
12:15 – 12:30	CLOSING CEREMONY	
12:30 – 13:00	Take Away Lunch (KUBUS Foyer)	
13:15	Post Conference Activities	