

Welcome to the ECHEMS 2024 conference!

# Electrochemistry in Molecular Transformations

Where? Raitenhaslach TUM Academy Center, Burghausen, Bavaria, Germany

When? 28th to 31st of October 2024





#### Scientific Committee

Nicolas Plumeré (Technical University of Munich) Siegfried R. Waldvogel (Max Planck Institute) Steen Uttrup Pedersen (Aarhus University) Alexander Kuhn (University of Bordeaux) Kathryn Toghill (Lancaster University) Martin Jönsson-Niedziólka (Polish Academy of Sciences) Patrizia Mussini (University of Milan) Frank Marken (University of Bath)

#### **Organizational Committee**

Nicolas Plumeré (Technical University of Munich) Siegfried R. Waldvogel (Max Planck Institute) Kelly Lim-Trinh (Technical University of Munich) Nadine Ternes (Technical University of Munich)

Hour	Monday	Tuesday	Wednesday	Thursday
08		Breakfast	Breakfast	Breakfast
		Shuttle to Venue	Shuttle to Venue	Shuttle to Venue
09		Kevin Lam	Kim Daasbjerg	Cyrille Constentin
		Mickaël E. Avanthay	Santanu Ghorai	Ben Johnson
10		David Moser	Michael Papadakis	Darren Buesen Mark Potter
	Bus Transport	Coffee Break	Coffee Break	Coffee Break
11		Rok Narobe Alexandra Matei	Daniel A. Scherson Matthieu Haake	Matthieu Etienne
		i ingran Liu	Yoshua Moore	Closing Ceremony
12	Registration & Lunch	Lunch	Lunch	Lunch
10				
14	Opening Ceremony	Helena Lundberg	Christophe Léger	Bus Transport (Venue to Munich Airport)
	Serena Arnaboldi	Darryl Nater	Steffen Hardt	(RedoxShield
15	Wanmai Srisuwanno	Xiuming Sun	Andrea Fasano Maya Landia	
15	Coffee Break	Coffee Break	Coffee Break	
16	Chularat Wattanakit	Omer Yehezkeli	Sylvie Chardon	
17	Claudio Fontanesi Alexander Kuhn Florian Breitschaft Abdulaziz Al-romema	Claudio Righetti Yvonne Schößow Joshua Lawrence Paniz Izadi Tobias Vöpel	Shuttle to Burghausen & Privately Guided Tour at the Castle	
18				
19	Welcome Buffet & Poster Session			
	Shuttle to Hotels in Burghausen	Conference Dinner at Klostergasthof Raitenhaslach	Free time! Walk through the	
20			historic city center of Burghausen and grab dinner!	Please refer to the
21				tables on the following pages for
		Shuttle to Par Mathilda	Shuttle to	the exact times.
22		in Burghausen	Nationilasiach	

Starting Time		Program	Location
10	00	Bus Transport from Munich Airport Terminal 1 to the Venue	Terminal 1 Sector C Bus
		(TUM Academy & Study Center, Raitenhaslach)	Parking Lots
			Bus with name
11	00		"WENGLER"
12	00	Registration & Lunch	Poom A008 Mansa
12	00	(Luggage can be left at the venue until check-in at night)	Room Addo Mensa
12			
15			
	50		
14		Opening Ceremony by Nicolas Plumeré	Room A103 Aula Maior
14	20	Keynote: Sereng Arnaboldi: Wireless Synthesis, Detection, and	
		Separation of Chiral Analytes	
15	00	Wanmai Srisuwanno: Autonomous Chiral Encoded Metal- Motors for Enantioselective Synthesis	
	20	Sara Grecchi: Wireless Asymmetric Umpolung Electrosynthesis	
		of Enantiopure Lansoprazole	
	40	Coffee Break	Room A009 Gewölbesaal
16	10	Invited Talk: Chularat Wattanakit: Asymmetric Synthesis of	Room A103 Aula Maior
		Chiral Organic Compounds at Electrochemically Generated	
	40	Enantioselective Metal Surfaces	
	-0	Electrochemical-Based Approach	
17	00	Alexander Kuhn: Magnetic Field-Enhanced Redox Chemistry On-	
	20	the-Fly for Efficient Enantioselective Synthesis	
	20	Alkenylsulfonates using a Multicomponent Approach	
	40	Abdulaziz Al-romema: In-Situ Electrolyte for Electrosynthesis:	
		Scalable Anodically-Enabled One-Pot Sequence from Aldehyde	
18	00	Welcome Buffet and Poster Session	Room A009 Gewölbesaal
19			
	45	Shuttle from venue to hotels in Burghausen & Check-In	

# MONDAY, 28<sup>TH</sup> OF OCTOBER 2024 (10 AM TO 7 PM) | CHAIR:

# TUESDAY, 29<sup>TH</sup> OF OCTOBER 2024 (9 AM TO 5 PM) | CHAIR: SIEGFRIED WALDVOGEL

Starting Time Hour Min.		Program	Location
		Breakfast (Starting time depends on hotel)	Hotel
08	30	Shuttle from hotel in Burghausen to venue	
09	00	Keynote: <i>Kevin Lam</i> : Your Chemistry Has Got Potential: Highly Reactive Intermediates Without the "Bang"	Room A103 Aula Maior
	40	<i>Mickaël E. Avanthay</i> : Bromide-Mediated Silane Oxidation: A Practical Counter-Electrode Process for Nonaqueous Deep Reductive Electrosynthesis	
10	00	Svenja Bechtold: In-Situ Spectroelectrochemical Study of Semiconducting Polymers and their Modifications	
	20	<b>David Moser</b> : In-Situ Spectroelectrochemistry as a Tool for Ionization Energy Determination for Organic Solar Cell Applications	
	40	Coffee Break	Room A009 Gewölbesaal
11			
	10	<i>Rok Narobe</i> : Practical Electrochemical Hydrogenation of Nitriles at Nickel Foam Cathode	Room A103 Aula Maior
	30	Alexandra Matei: On the Use of Propylene Carbonate and Dimethyl Carbonate as Green Solvents in Organic Electrosynthesis	
	50	<i>Tingran Liu</i> : Electrolyte-free Paired Electrosynthesis on Interdigitated Electrodes	
12	10	Lunch	Room A008 Mensa
13			
	30	Keynote: <i>Helena Lundberg</i> : Electroreductive Transformations via C–O and C–S Bond Activation	Room A103 Aula Maior
14			
	10	<i>Darryl Nater</i> : Electrochemical Hofmann Rearrangement at High Current Densities in a Simple Flow Setup	
	30	<i>Laurent Bouffier</i> : In Situ Confocal Fluorescence Microscopy: A Toolbox to Decipher Molecular Mechanism	
	50	<i>Xiuming Sun</i> : In-Situ Spectroelectrochemical Study of N-type Semiconducting Polymers for Bioelectronic Devices	
15	10	<i>Kathryn Toghill</i> : Understanding the Redox Mediated Alkaline Hydrogen Evolution Reaction	
	30	Coffee Break	Room A009 Gewölbesaal
16	00	Invited Talk: <b>Omer Yehezkeli</b> : Photo-Driven Enzymatic or Microbial Fuel Cells for the Conversion of Biomass or Bioplastic to Electricity and Added-Value Chemicals	Room A103 Aula Maior
	30	<i>Claudio Righetti</i> : Exploring <i>Ch</i> CODH II for Electrochemical CO <sub>2</sub> Reduction Reaction and Water-Gas Shift Reaction	

	50	<b>Yvonne Schößow</b> : Developing Thermistor Electrodes for Analysing the Heat Fluxes During Extracellular Electron Transfer of Electroactive Microorganisms	
17	10	Joshua Lawrence: Analytical Bioelectrochemistry of Thylakoid Membrane Electron Transport	
	30	<b>Paniz Izadi</b> : On the Way to Reach Industrial Applications in CO <sub>2</sub> Conversion Within Electrobiorefineries	
	50	<b>Tobias Vöpel:</b> Development of an Oxygen-Insensitive Electrochemical Oxidase-Based Biosensor	
18	10	Conference Dinner at Klostergasthof Raitenhaslach (7 min walking from the venue)	Adress: <u>Raitenhaslach 9,</u> 84489 Burghausen
21	30	Shuttle from venue to the Bar Mathilda	

# WEDNESDAY, 30<sup>TH</sup> OF OCTOBER 2024 (9 AM TO 5 PM) | CHAIR: BEN JOHNSON

Starting Time Hour Min.		Program	Location
		Breakfast	Hotel
08	30	Shuttle from hotel in Burghausen to venue	
09	00	Keynote: <i>Kim Daasbjerg</i> : Steering Carbon Dioxide Reduction Toward C–C Coupling Using Copper Electrodes Modified with Organic Films	Room A103 Aula Maior
	40	Santanu Ghorai: Bio-Inspired Catalyst Design Strategy for Green Ammonia Production	
10	00	Abhishek Saini: A Seawater Electrolyzer with a Designed Metalloprotein	
	20	<i>Michael Papadakis</i> : Stereochemical Tailoring of Nickel-Based Electrocatalyst for Hydrogen Evolution Reaction	
	40	Coffee Break	Room A009 Gewölbesaal
11			
	10	<b>Daniel A. Scherson</b> : Electrostatic Stimulation of Electron Transfer at the Metal-Electrolyte Interface	Room A103 Aula Maior
	30	<i>Matthieu Haake</i> : Selectivity Control of a Cobalt-Based Molecular Cathode for Aqueous CO <sub>2</sub> Electroreduction Through Molecular Surface Engineering	
	50	<b>Yoshua Moore</b> : Understanding Mass Transport at Individual and Connected Pores of 3D Electrodes to Access Their Morphology and Size Distribution	
12	10	Lunch	Room A008 Mensa
15			
	30	Keynote: <i>Christophe Léger</i> : Outer-Sphere Effects on the Catalytic Properties of Hydrogenases	Room A103 Aula Maior
14			
	10	<b>Steffen Hardt</b> : Bidirectional Catalysis for Protection of Polymer- Embedded [FeFe]-Hydrogenase from O <sub>2</sub> under Intermittent Hydrogen Evolution	
	30	<i>Léonard Olivotto</i> : Solvent Tuning to Enable CO <sub>2</sub> -to-CO Electrocatalysis by CNT-Supported O <sub>2</sub> -Sensitive CODH Under Aerobic Conditions	
	50	Andrea Fasano: Kinetic Modeling of the Reversible or	
15	10	<i>Maya Landis</i> : Tuning Carbon Nanomaterials as Active Supports for Hydrogenases	
	30	Coffee Break	Room A009 Gewölbesaal
16	00	Invited Talk: <b>Sylvie Chardon</b> : Beyond CO <sub>2</sub> Activation: Shedding Light on N <sub>2</sub> O Electroreduction Catalyzed by Low Valent Iron Porphyrin	Room A103 Aula Maior
	30	Shuttle to Burghausen	Adress: <u>Burg 1, 84489</u>
		Privately guided tour at the castle	<u>Burghausen</u>

18	30	Free time! Go for a walk through the historic city center and grab	Adress: Stadtplatz 39,
		some dinner!	84489 Burghausen
22	00	Shuttle from Burghausen to Klostergasthof in Raitenhaslach	

THURSDAY, 31 <sup>st</sup> OF OCTOBER 2024 (9 AM TO 1 PM)	CHAIR: KIM DAASBJERG
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Starting Time		Program	Location
Hour	Min.		
		Breakfast (Checkout & bring luggage to venue)	Hotel
08	30	Shuttle from hotel in Burghausen to venue	
09	00	Keynote: <b>Cyrille Constentin</b> : Recent Advances in Mechanistic Analysis of Molecular Catalysis of Electrochemical Reactions	Room A103 Aula Maior
	40	Invited Talk: <i>Ben Johnson</i> : Next Stop, The Kinetic Zone! A Geometric Interpretation of Kinetic Zone Diagrams in Electrochemistry	
10	10	<b>Darren Buesen</b> : A Kinetic Barrier to Enable Semiconductor-Free Biophotovoltaics	
	30	<i>Mark Potter</i> : Decoupling Electrochemical CO <sub>2</sub> Reduction via Redox Mediators	
	50	Coffee Break	Room A009 Gewölbesaal
11			
	20	Invited Talk: <i>Matthieu Etienne</i> : Bioelectrochemistry Without Potentiostat (or Any Electronics)	Room A103 Aula Maior
	50	Closing Ceremony by Nicolas Plumeré	
12			
	10	Lunch	Room A008 Mensa
13			
	15	Bus Transport from the venue to Munich Airport Terminal 1	
		For RedoxShield Workshop 2024 participants: stay at the venue –	
14		have a look at the Redoxshield program on the website here!	
15	10		

Presentation time frames:

- Oral presentations: 15 minutes + 5 minutes discussion
- Invited oral presentations: 20 minutes + 10 minutes discussion
- Keynote presentations: 30 minutes + 10 minutes discussion

Please stay within the time frames.

I'd like to ask all presenters to have their presentation file (pptx and pdf) ready on a USB stick, so we can guarantee a smooth transition between presenters.

More information:

You can enter **Room A108 and A109** to take a break or to do calls during the conference days.

### POSTER PRESENTATIONS (28<sup>™</sup> OF OCTOBER 2024, ROOM A009 GEWÖLBESAAL)

Latest developments in electrosynthesis and organic electrochemistry, including transformation of			
macromolecules, biomolecules,	and chiral systems		
David Moser	In-Situ Spectroelectrochemistry as a Tool for Ionization Energy Determination for Organic Solar Cell Applications		
Luke Ward	From Trifluoromethylarenes to Functionalized Fluoromethylarenes		
Maya Landis	Tuning Carbon Nanomaterials as Active Supports for Hydrogenases		
Mickaël E. Avanthay	Bromide-Mediated Silane Oxidation: A Practical Counter- Electrode Process for Nonaqueous Deep Reductive Electrosynthesis		
Ponart Aroonratsameruang	Autonomous Ni/Al Swimmers for Enantioselective Synthesis		
Svenja Bechtold	In-Situ Spectroelectrochemical Study of Semiconducting Polymers and their Modifications		
Tingran Liu	Electrolyte-free Paired Electrosynthesis on Interdigitated Electrodes		
Xiuming Sun	In-Situ Spectroelectrochemical Study of N-type Semiconducting Polymers for Bioelectronic Devices		
New molecular (bio-)catalysts and materials for the sustainable transformation and activation of small molecules (CO2_N2_H2_NH3_O2)			
Abhishek Saini	A Seawater Electrolyzer with a Designed Metalloprotein		
Filmon Tedros	Protection of Hydrogenases from O <sub>2</sub> Under Intermittent HER via Bidirectional Catalysis		
Frank Marken	Intrinsically Microporous Polymers (PIMs) in Electrochemical Transformations		
Léonard Olivotto	Solvent Tuning to Enable CO <sub>2</sub> -to-CO Electrocatalysis by CNT- Supported O <sub>2</sub> -Sensitive CODH Under Aerobic Conditions		
Mark Potter	Decoupling Electrochemical CO <sub>2</sub> Reduction via Redox Mediators		
Naseer Ahmad Shah	Molecular Copper Complex Driving Rapid Electrocatalytic Hydrogen Production from Water		
Santanu Ghorai	Bio-Inspired Catalyst Design Strategy for Green Ammonia Production		
Yan Xie	Bioelectrocatalytic H <sub>2</sub> –Driven NADP <sup>+</sup> Regeneration		
Electrochemical methods for me	echanistic studies of molecular transformations catalyzed by		
enzymes, molecular systems or materials			
Miriam Malagnini	"SS": A New, Small, O <sub>2</sub> -Stable, Ancestral [FeFe] Hydrogenase		
Ankita Mahajan	Ionic Liquid (BMIM <sup>+</sup> BF <sub>4</sub> <sup>-</sup> ) Reactivity on Graphene Foam		
	Electrodes: Humidity Effects on Reversible Cathodic BMIM <sup>+</sup> Intercalation		
Joshua Lawrence	Analytical Bioelectrochemistry of Thylakoid Membrane Electron Transport		

### PICK UP POINT FOR THE AIRPORT BUS

The bus will arrive at Munich Airport, **Terminal 1, Sector C**. Bus parking is available just outside. Please look for a bus with the word "**WENGLER**" in red lettering. I will be outside the bus to assist you. The bus will leave at 10 am. See the image below for the exact location.



If you have any questions or need help, feel free to contact me at **Kelly.lim-trinh@tum.de**. For emergencies only during the conference days, you can reach me at +49 1578 7888 663.

Alternative options:

#### Option B: Train and Public Transport (approx. 3 hours)

Take the RE22 train (towards Regensburg) to Landshut (Bay) Hbf. From there, take the RB45 (towards Mühldorf) to Mühldorf Oberbay, and then the RB42 (towards Burghausen) to Burghausen. Once you arrive, walk to the "Bahnhof Burghausen" bus station and take bus 16 (towards Tittmoning/Raitenhaslach) to Raitenhaslach. Alternatively, you can take a taxi from Burghausen (approx. 15-minute ride). The estimated cost is around 35€. However, that depends on the exact route and train you will be taking.

I recommend using the Deutsche Bahn (DB) app to plan your journey. Enter your starting point as "Munich Airport Terminal" and your destination as either "Raitenhaslach" or "Burghausen" (and then take a taxi from Burghausen).

Please note that this route is quite complicated, so try to catch the airport shuttle with us if possible.

#### Option C: Take an Uber (approx. 1.5 hours)

Use the Uber app to book a ride to the address: <u>Raitenhaslach 11, 84489 Burghausen</u> (TUM Akademiezentrum). The estimated cost is around €190.