WELCOME LETTER

Dear colleagues and friends,

We are honored to invite you to the 9th International Conference on Biorefinery and Biomanufacturing (ICB 2025), to be held from January 13th-17th, 2025, in São Paulo, Brazil. Under the overarching theme "Biorefinery and Biomanufacturing", this conference seeks to create a dynamic platform for researchers and innovators at the forefront of synthetic biology, green biomanufacturing, and integrated biorefinery systems.

Jointly organized by Beijing University of Chemical Technology (BUCT), Universidade Estadual Paulista (UNESP), and Universidade Estadual de Campinas (UNICAMP), ICB 2025 continues a distinguished tradition of fostering international academic exchange and collaboration. Previous editions have been hosted in prominent centers of excellence, including Beijing, China (2007); Syracuse, United States (2009); Bruges, Belgium (2011); Xiamen, China (2013); Vancouver, Canada (2015); Christchurch, New Zealand (2017); Johannesburg, South Africa (2019); and Athens, Greece (2023).

The conference will be co-chaired by President Tianwei Tan, Professor Ulrich Schwaneberg, and Professor Rodrigo Fernando Costa Marques, all esteemed leaders in the field of biorefinery and biomanufacturing. This gathering promises to be an inspiring and transformative event, bringing together cutting-edge research, fostering new collaborations, and charting the path towards a sustainable, biobased future.

We warmly invite your participation and extend our heartfelt gratitude for your support of this prestigious conference. We look forward to welcoming you to São Paulo!

Sincerely yours,

Conference Chairs:

Prof. Tianwei Tan
President of Beijing University of Chemical Technology (BUCT)
Academician of Chinese Academy of Engineering
President of China Renewable Energy Society (CRES)
Director of National Key Laboratory of Green Biomanufacturing

Prof. Ulrich Schwaneberg
Head of Institute, Professor for Biotechnology
RWTH Aachen University

Prof. Rodrigo Fernando Costa Marques
UNESP Chemical Institute from Araraquara Campus
Universidade Estadual Paulista, Brazil

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Organizers and Organizing Committee

Organizer:

National Key Laboratory of Green Biomanufacturing, Beijing University of Chemical Technology (BUCT), China
Universidade Estadual Paulista, Brazil
Universidade Estadual de Campinas, Brazil

Conference Chairs:

Prof. Tianwei Tan
Prof. Ulrich Schwaneberg
Prof. Rodrigo Fernando Costa Marques

Session:

1. Technology Development of Synthetic Biology and Metabolic Engineering
2. C1 Conversion and Sustainable Green Carbon Biomanufacturing
3. Biocatalysis and Heterogeneous Catalysis
4. Biomass Conversion for Bioenergy, Bio-Based Materials, and Chemicals

Contact Us

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Program

Monday January 13, 2025	10:00-20:00	Registration, Hotel Lobby Tivoli MOFARREJ SAO PAULO Hotel	
	18:30-19:30	Invited Organizing Committee Meeting, Ipiranga	
	19:30-21:00	Welcome Reception, Bistro Noturno	
Tuesday January 14, 2025	08:00-10:30	Registration, Foyer Area	
	08:30-12:30	Opening Ceremony Liberdade	
		Plenary Session Liberdade	
	12:30-14:00	Lunch Bistro Noturno	Poster Session Liberdade
	14:00-19:00	Session I: Technology Development of Synthetic Biology and Metabolic Engineering Liberdade	Session II: C_1 Conversion and Sustainable Green Carbon Biomanufacturing Ipiranga
	19:30-21:00	Banquet (A Bovinu's Grill & Beer, sito à Rua Augusta, 1513, Cerqueira Cesar)	
Wednesday January 15, 2025	08:30-12:30	Session III: Biocatalysis and Heterogeneous Catalysis Liberdade	Session IV: Biomass Conversion for Bioenergy, Bio-Based Materials, and Chemicals Ipiranga
	12:30-14:00	Lunch Bistro Noturno	Poster Session Liberdade
	14:00-16:30	Plenary Session Liberdade	
		Closing Ceremony Liberdade	
Thursday January 16, 2025	Full Day	Visiting	

Scientific Program

Opening Ceremony and Plenary Session
Liberdade, Tivoli MOFARREJ SAO PAULO Hotel
Tuesday, January 14, 2025

08:30-09:20 Opening Ceremony	
Chaired by Prof. Rodrigo Fernando Costa Marques, Universidade Estadual Paulista, Brazil Moderator: Prof. Yongqin Lv, Prof. Levi Pompermayer Machado, and Prof. Jean Felipe Leal Silva	
8:30-8:35	Introduction of guests (5 min)
08:35-9:10	Welcome Speech by Prof. Tianwei Tan President of Beijing University of Chemical Technology, China Welcome Speech by Prof. Cesar Martins Vice-Rector of Universidade Estadual Paulista, Brazil Welcome Speech by Prof. Ana Maria Frattini Fileti The Pro-rector of Research of Universidade Estadual de Campinas, Brazil Welcome Speech by Mr. Yuzhen Tian Acting Consul General of China in São Paulo Welcome Speech by Mr. Samo Tosatti Head of the International Affairs Advisory Office, Government of the State of São Paulo
9:10-9:20	Proposal Ceremony to Create the China-Brazil Joint Center

9:20-12:20 Plenary Session				
Chaired by: Prof. Ulrich Schwaneberg, RWTH Aachen University, Germany Prof. Anping Zeng, Westlake University, China Moderator: Prof. Yongqin Lv, Prof. Levi Pompermayer Machado, and Prof. Jean Felipe Leal Silva				
Time	**No.**	**Title**	**Speaker**	**Affiliation**
9:20-9:50	PL-1	Digital Cell Factory	Tianwei Tan	Beijing University of Chemical Technology, China
9:50-10:20	Group Photo Coffee Break, Foyer Area			
10:20-10:50	PL-2	An AI-powered Biofoundry for Biomanufacturing	Huimin Zhao	University of Illinois, USA
10:50-11:20	PL-3	Using heat batteries and oxygen-fired boilers to increase ethanol and synthetic fuel production in sugarcane biorefineries	Diogo Ardaillon Simoes	Petroleum and Energy Research Institute (i-LITPEG) at UFPE, Brazil
11:20-11:50	PL-4	Protein engineering of adhesion promoting peptides for innovations in material science, catalysis, and plant/environmental health	Ulrich Schwaneberg	RWTH Aachen University, Germany
11:50-12:20	PL-5	Electrochemical Conversion of Biomass/ CO_2 into Value-added Products	Licheng Sun	Westlake University, China
12:30-13:30	Lunch Poster Session, Liberdade Moderator: Rodolfo Piazza, Yuhan Zhang			

Session I: Technology Development of Synthetic Biology and Metabolic Engineering

Session Chair: Prof. Yajun Yan, Prof. Haijia Su, Prof. Junbiao Dai, Prof. Eamim Squizani

Moderator: Vítor Mattos Visoná, Yuman Guo

Liberdade, Tivoli MOFARREJ SAO PAULO Hotel Tuesday, January 14, 2025

Time	No.	Title	Speaker	Affiliation
Chaired by Yajun Yan and Junbiao Dai				
14:00-14:20	01-KN-1	Next-Generation Metabolic Network Models for Rational Construction of High-performance Strains	Haijia Su	Beijing University of Chemical Technology, China
14:20-14:40	01-KN-2	Sustainable Industrial Advancement through Synthetic Biology in Brazil	Eamim Daidrê Squizani	Instituto SENAI de Inovação em Biossintéticos e Fibras-SENAI CETIQT, Brazil
14:40-15:00	01-KN-3	Decode and reprogram a plant genome	Junbiao Dai	Agricultural Genomes Institute at Shenzhen, Chinese Academy of Agricultural Sciences, China
15:00-15:15	01-I-1	Whole Cell Biocatalytic Synthesis of ε-Caprolactone	Shuang Li	South China University of Technology, China
15:15-15:30	01-I-2	Engineering of *Clostridium thermocellum* for Lignocellulose Consolidated Bio-Saccharification	Yingang Feng	Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, China
15:30-15:40	01-O-1	Regulation of metabolic carbon flux in constructing microbial cell factories	Jia Wang	Beijing University of Chemical Technology, China
15:40-15:50	01-O-2	Precision Delivery of Active Substances for Plant Health with Innovative Co-Formulants	Nikola Mijailovic	DWI-Leibniz-Institut für Interaktive Materialien e.V., Germany
15:50-16:00	01-O-3	FCSE journal at a glance	Xiaowen Zhu	Tianjin University, China
16:00-16:10	01-O-4	Accurate Computational Design of Three-dimensional Protein Crystals	Zhe Li	SUSTech, China
16:10-16:30	Coffee Break, Foyer Area			

Time	No.	Title	Speaker	Affiliation
Chaired by Haijia Su and Eamim Squizani				
16:30-16:50	01-KN-4	Metabolic Engineering Strategies towards Enhancing Synthetic Capability of Microbial Systems	Yajun Yan	The University of Georgia, USA
16:50-17:10	01-KN-5	Synthetic biology for the production of natural products	Qipeng Yuan	Beijing University of Chemical Technology, China
17:10-17:30	01-KN-6	Energy self-sustainable wastewater treatment plants: A wishful thinking or a near reality?	Petros Gikas	Technical University of Crete, Greece
17:30-17:45	01-I-3	Microreactor-based enzymatic flow synthesis of bio-degradable polymers	Ning Zhu	Nanjing Tech University, China
17:45-18:00	01-I-4	Engineering oleaginous yeast *Rhodotorula toruloides* for production of biofuels	Shuobo Shi	Beijing University of Chemical Technology, China
18:00-18:10	01-I-5	Systematically Engineering of Novel-type *Halomonas* LY03 for Industrial Production of Polyhydroxyalkanoates	Jianwen Ye	South China University of Technology, China
18:10-18:20	01-O-5	Enhancing Textile Functionality: Bio-Based Chemical Properties via Adhesion Promoting Peptides Technology	Yannik Brack	DWI-Leibniz-Institute for Interactive Materials, Germany
18:20-18:30	01-O-6	Study on the effects of Elements Reallocation of Biomedical Industry and the Influence on CO_2 Emission	Yong Jiang	China University of Geosciences, China
18:30-18:40	01-O-7	Hydrogen-bond-triggered biohybrids for solar-to-chemical conversion	Yuman Guo	Beijing University of Chemical Technology, China
19:30-21:00	Banquet			

Session II: C_1 Conversion and Sustainable Green Carbon Biomanufacturing

Session Chair: Prof. Fuli Li, Prof. Ricardo Antonio Polanczyk, Prof. Yalin Lei, Prof. Vagelis G. Papadakis

Moderator: Dr. Huimin Yun, Dr. Rodolfo Debone Piazza

Ipiranga, Tivoli MOFARREJ SAO PAULO Hotel Tuesday, January 14, 2025

Time	No.	Title	Speaker	Affiliation
Chaired by Yalin Lei and Vagelis G. Papadakis				
14:00-14:20	02-KN-1	Biofuel and Biochemical Production from CO_2 driven by H_2	Fuli Li	Qingdao Institute of Bioenergy and Bioprocess Technology, China
14:20-14:40	02-KN-2	Biological control and sustainability of bioproducts for the bioeconomy	Ricardo Antonio Polanczyk	Universidade Estadual Paulista, Brazil
14:40-15:00	02-KN-3	Electrochemically Driven Biocatalytic Conversion of CO_2 into Fuels and Chemicals	Yongqin Lv	Beijing University of Chemical Technology, China
15:00-15:15	02-I-1	Valorization of greenhouse gases into long-chain compounds via biomanufacturing	Qiang Fei	Xi'an Jiaotong University, China
15:15-15:30	02-I-2	BECCUS of waste CO_2 from ethanol production: techno-economic analysis and life cycle assessment	Jean Felipe Leal Silva	Universidade Estadual de Campinas, Brazil
15:30-15:45	02-I-3	Mechanistic understanding of enzymatic hydrolysis of PET and the de novo design of PET hydrolases	Yifei Zhang	Beijing University of Chemical Technology, China
15:45-15:55	02-O-1	Green carbon-towards a greener world	Xutong Yang	Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, China
15:55-16:05	02-O-2	Research on Carbon Feet Appraisal Method of Biomedical Industry Chain Based on Life Cycle Assessment	Wenhui Chen	Beijing University of Chemical Technology, China
16:05-16:30	Coffee Break, Foyer Area			
Chaired by Fuli Li and Ricardo Antonio Polanczyk				

Time	No.	Title	Speaker	Affiliation
16:30-16:50	02-KN-4	The Impact of Production Factor Allocation on China's Biopharmaceutical Industry: A Decomposition Approach Based on Growth Accounting	Yalin Lei	China University of Geosciences, China
16:50-17:20	02-KN-5	Agricultural residues can contribute significantly to meeting energy needs - Technical, environmental and economic perspectives	Vagelis G. Papadakis	University of Patras, Greece
17:20-17:35	02-I-4	Evaluation of the biological carbon sequestration benefits of the dihydroxyacetone biosynthesis based on atomic economy theory	Dan Wang	Chongqing University, China
17:35-17:50	02-I-5	Algae Compound and Carbohydrate Extracts for food Products and sustainable packaging Technology	Levi Pompermayer Machado	IPT Open at the Institute for Technological Research of São Paulo, Brazil
17:50-18:05	02-I-6	Engineering cyanobacteria for photosynthetic biomanufacturing converting carbon dioxide into bulk and high-value chemicals	Guodong Luan	Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, China
18:05-18:15	02-O-3	Feasibility and challenges of low-carbon transition of China's power system	Huimin Yun	Beijing University of Chemical Technology, China
18:15-18:25	02-O-4	Integrated Electrocatalytic System for Coupled CO_2 Reduction and Biomass Valorization Using Synergistic Catalyst Design	Wei Zhang	Beijing University of Chemical Technology, China
18:25-18:35	02-O-5	Magnetic cross-linked cellulase aggregates: a strategy for cello-oligosaccharides production from lignocellulosic biomass	Rodolfo Piazza	Universidade Estadual Paulista, Brazil
19:30-21:00	Banquet			

Session III: Biocatalysis and Heterogeneous Catalysis

Session Chair: Prof. Jianhe Xu, Prof. Meiping Zhao, Prof. Peter-Leon Hagedoorn, Prof. Cintia Milagre

Moderator: Rodolfo Piazza, Wei Zhang

Liberdade, Tivoli MOFARREJ SAO PAULO Hotel Wednesday, January 15, 2025

Time	No.	Title	Speaker	Affiliation
Chaired by Meiping Zhao and Peter-Leon Hagedoorn				
8:30-8:50	03-KN-1	Heterologous Biosynthesis and Structural Derivation of Natural Terpene Molecules in Microbial Cell Factories	Jianhe Xu	East China University of Science and Technology, China
8:50-9:10	03-KN-2	Unlocking the Power of Enzymes: Key Players in the Bioeconomy Revolution	Cintia Milagre	Universidade Estadual Paulista, Brazil
9:10-9:30	03-KN-3	Construction and Application of Enzyme-Metal Hybrid Catalysts	Jun Ge	Tsinghua University, China
9:30-9:45	03-I-1	Strategy on the valuable production by catalytic pyrolysis of bio-plastics	Runduo Zhang	Beijing Uinversity of Chemical Technology, China
9:45-10:00	03-I-2	Solid oxide electrolysis cells (SOECs)	Gerhard Ett	SENAI CIMATEC, Brazil
10:00-10:10	03-O-1	Protein engineering of P450s for improved coupling efficiency	Yu Ji	Beijing University of Chemical Technology, China
10:10-10:20	03-O-2	Microbial and Enzymatic Degradation for Polyurethane Plastics	Jiawei Liu	Nanjing Tech University, China
10:20-10:40	Coffee Break, Foyer Area			
Chaired by Jianhe Xu and Cintia Milagre				
10:40-11:00	03-KN-4	The Influence of Alternating Magnetic Fields on the Biocatalytic Properties of Enzymes	Rodrigo Fernando Costa Marques	Universidade Estadual Paulista, Brazil
11:00-11:20	03-KN-5	Bio-Nanocomposites for Target Protein Capture, Activity Suppression, and Post-Translational Modification Profiling in Live Cells	Meiping Zhao	Peking University, China
11:20-11:40	03-KN-6	EPR for biocatalysis	Peter-Leon Hagedoorn	Delft University of Technology, The Netherlands
11:40-11:55	03-I-3	Computation-driven Design of Carboxylic Acid Reductase for Nylon Precursors Biosynthesis	Huilei Yu	East China University of Science and Technology, China
11:55-12:10	03-I-4	Biocatalysis and Biosensing: Technologies and Applications	Guimin Zhang	Beijing University of Chemical Technology, China
12:10-12:20	03-O-3	Design of Molecular Switches to Regulate Inside and Interfacial Electron Transfer of Amino Acid Dehydrogenases	Shizhen Wang	Xiamen University, China
12:30-14:00	Lunch Poster Session, Liberdade Moderator: Vitor Mattos, Zhijin Gong			

Session IV: Biomass Conversion for Bioenergy, Bio-Based Materials, and Chemicals

Session Chair: Prof. Sergio Luis Felisbino, Prof. Yingping Zhuang, Prof. Min Jiang, Prof. Tassia Lopes Junqueira

Moderator: Changsheng Su, Fernanda Sossai, Wellington M. Correa, Pedro Aquino

Ipiranga, Tivoli MOFARREJ SAO PAULO Hotel Wednesday, January 15, 2025

Time	No.	Title	Speaker	Affiliation
Chaired by Sergio Luis Felisbino and Yingping Zhuang				
8:30-8:50	04-KN-1	Development and perspective of biorefinery from the waste carbon resources	Min Jiang	Nanjing Tech University, China
8:50-9:10	04-KN-2	Driving Sustainable Innovation in Biomanufacturing	Tassia Lopes Junqueira	Brazilian Biorenewables National Laboratory, Brazil
9:10-9:25	04-I-1	Biomass fuels for Clean Cooking and Heating and Strategy for South-South Cooperation	Guangqing Liu	Beijing University of Chemical Technology, China
9:25-9:35	04-O-1	Cellulose hydrogels: a green solution for the treatment of water-contaminated lubricant oils	Bianca Ramos Estevam	Universidade Estadual de Campinas, Brazil
9:35-9:45	04-O-2	Auxiliary effect of ionizing radiation on basic pretreatment processes of lignocellulosic biomass	Guoce Yu	Tsinghua University, China
9:45-9:55	04-O-3	Towards Sustainable Textile Floor Coverings: A Bio-Based Adhesive Approach for Improved Recycling	Amanda Staudt	DWI-Leibniz-Institute for Interactive Materials
9:55-10:05	04-O-4	Lignocellulose Biorefinery for n-Butanol Production	Changsheng Su	Beijing University of Chemical Technology, China
10:05-10:15	04-O-5	Solar-driven biohybrid system for methanotrophic cells	Ziyue Jiao	Xi'an Jiaotong University, China
10:15-10:40	Coffee Break, Foyer Area			
Chaired by Min Jiang and Tassia Lopes Junqueira				
10:40-11:00	04-KN-3	Process Design for Water Separation in Biodiesel Using Hydrogels	Leonardo V. Fregolente	Universidade Estadual de Campinas, Brazil
11:00-11:20	04-KN-4	Biomass Photorefinery for Sustainable Bioeconomy	Jinguang Hu	University of Calgary, Canada
11:20-11:30	04-O-6	Deciphering Consolidated Bio-Saccharification Process for Efficient Utilization of Lignocellulosic Carbon Sources	Yajun Liu	Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, China
11:30-11:40	04-O-7	Engineering Corynebacterium glutamicum for the production of carotenoids from aquaculture sidestream as feedstock	Petra Peters-Wendisch	Bielefeld University, Germany
11:40-11:50	04-O-8	Efficiently producing succinic acid from corn stover hydrolysate using engineered *Escherichia coli*	Zhijin Gong	Beijing University of Chemical Technology, China
11:50-12:00	04-O-9	A comparative study on biooxidation of refactory gold ore in stirred reactor aerated using sparger ring and porous ceramic plate respectively	Yanzhen Chen	Institute of Process Engineering, Chinese Academy of Sciences, China
12:30-14:00	Lunch Poster Session, Liberdade Moderator: Vitor Mattos, Zhijin Gong			

Plenary Session and Closing Ceremony
Liberdade, Tivoli MOFARREJ SAO PAULO Hotel
Wednesday, January 15, 2025

14:00-15:00 Plenary Session				
Chaired by Prof. Licheng Sun, Westlake University, China Moderator: Prof. Mariana Conceição da Costa, Prof. Luo Liu, Dr. Yu Ji, Prof. Patrícia Fazzio Martins Martinez				
Time	**No.**	**Title**	**Speaker**	**Affiliation**
14:00-14:30	PL-6	Synthetic biology and biomanufacturing: from basic research to application	Anping Zeng	Westlake University, China
14:30-15:00	PL-7	Strain engineering for efficient use of agricultural and food sidestreams	Volker F. Wendisch	Bielefeld University, Germany
15:00-16:00 Closing Ceremony and Best Poster Award				
Chaired by Prof. Leonardo Vasconcelos Fregolente, Universidade Estadual de Campinas, Brazil Announcement of the Best Poster Award Announcement of the 10th International Conference on Biorefinery and Biomanufacturing (ICB 2027) Deliver the Closing Speech by Prof. Tianwei Tan				
16:00-16:30	Coffee Break, Foyer Area			

Plenary Lectures

Tianwei Tan

Beijing University of Chemical Technology, China
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Professor Tan is the member of the Chinese Academy of Engineering. He has been the president of Beijing University of Chemical Technology since 2012. He is known for his work on biochemical engineering technologies, including bio-based chemicals, bio-energy, and bio-materials. Tan and his research team have been focusing on lipase and enzyme-catalyzed synthetic chemicals and realized the production of lipase for organic synthesis and the application of enzyme industrial catalysis. He has published more than 500 SCI papers.

Digital cell factory

Synthetic biology is a key supporting technology for biomanufacturing, which can purposefully design, modify and resynthesize microorganisms, showing unlimited potential in disruptive innovation for biotechnology. The digital cell factory is a comprehensive microbial metabolic network computing platform designed and constructed with the computer technology and microbial metabolic data that can simulate cell growth and metabolism, providing high-quality simulation guidance solutions for synthetic biology research. The report provides a comprehensive introduction to the digital cell factory platform built by our research team, "Metabolic Network Simulation and Analysis Platform of Beijing University of Chemical Technology", including: (I) Research background and research status of the digital cell factory; (II) Establishment of a digital metabolic network model library; (III) Development of metabolic analysis optimization algorithm; (IV) Construction and application of digital cell factory; and (IV) Summary and outlook of the digital cell factory platform.

Huimin Zhao

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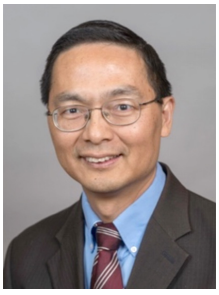

Dr. Huimin Zhao is the Steven L. Miller Chair of chemical and biomolecular engineering at the University of Illinois at Urbana-Champaign (UIUC), director of NSF AI Institute for Molecule Synthesis (moleculemaker.org), director of NSF iBioFoundry, director of NSF Global Center for Reliable and Scalable Biofoundries, and Editor in Chief of ACS Synthetic Biology.

An AI-powered Biofoundry for Biomanufacturing

Naturally occurring or engineered biological systems such as protein machines, genetic circuits, and microbial cell factories have promised to solve many grand challenges of modern society. However, the existing processes for discovery, characterization, and engineering of biological systems are slow, expensive, and inconsistent, representing a major obstacle in synthetic biology. To address these limitations, my lab designed and built a biofoundry named Illinois Biological Foundry for Advanced Biomanufacturing (iBioFAB) in early 2014. In this presentation, I will highlight a few recent applications of iBioFAB including: (a) PlasmidMaker for automated plasmid design and construction (Enghiad et al. Nature Communications 2022); (b) FAST-NPs for automated natural product discovery (Ayikpoe et al. Nature Communications 2022; Yuan et al. Cell Systems accepted); (c) an AI tool named CLEAN for enzyme function prediction (Yu et al. Science 2023); (d) BioAutomata for autonomous pathway optimization (Hamedi et al. Nature Communications 2019); (e) a generalized platform for autonomous protein engineering (Yu et al. Cell Systems 2023; Singh et al. submitted). These advances have laid the foundation for making biofoundry technologies broadly applicable and accessible.

Plenary Lectures

Diogo Ardaillon Simoes
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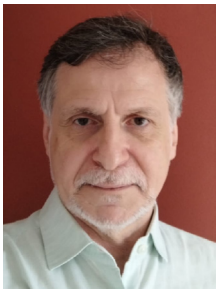

Dr. Diogo Simoes holds a degree in chemical engineering from the Polytechnic School of the University of São Paulo and a PhD in microbiology and biotechnology from the Institut National des Sciences Appliquées de Toulouse. He is currently an associate professor in the Department of Biochemistry at the Federal University of Pernambuco. His experience in chemical engineering primarily focuses on biochemical processes, biorefinery analysis, and advanced fuels. He is a former president of FACEPE, the funding agency for scientific research in the state of Pernambuco.

Using heat batteries and oxygen-fired boilers to increase ethanol and synthetic fuel production in sugarcane biorefineries

By using 1st and 2nd generation biotechnologies, a modern biorefinery processing sugarcane stalks and straw in Brazil can produce fuels (ethanol and biomethane) and surplus electricity with an overall energy yield of 54.9% relative to dry biomass LHV. In such 1G2G sugarcane biorefineries, 33.8% of the biomass carbon ends up in the fuels output, while 18.3% is in the highly concentrated streams of biogenic CO_2 that are co-produced, which can be used for geological carbon storage or for synthetic fuels production. However, 36.7% of the carbon is lost in the low-CO_2 flue gas of air-fired steam boilers, as a significant portion of the input biomass is burned to provide heat and power for the biorefinery. The output of liquid fuels can be increased by integrating a Power-to-Liquid process (PtL) that uses electrolytic hydrogen produced with renewable electricity to convert pure CO_2 streams into liquid hydrocarbons. Such 1G2G+PtL plants also produce an output of pure oxygen.

Ulrich Schwaneberg
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Prof. Ulrich Schwaneberg received its PhD in 1999 from the University Stuttgart. He was, after a post-doc at Caltech in the lab of Prof. Frances H. Arnold, appointed as Professor at the Jacobs University Bremen in 2002. In January 2009, he moved to the RWTH Aachen University as Head of the Institute of Biotechnology and is since 2010 co-appointed in the Scientific Board of Directors at the Leibniz Institute for Interactive Materials.

Protein engineering of adhesion promoting peptides for innovations in material science, catalysis, and plant/environmental health

Protein engineering by directed evolution has matured in academia and industry to a routinely applied algorithm to tailor protein properties1 and to match demands in chemical synthesis and material science. Efficient exploration of the protein sequence requires a balance of time requirement and achievable throughput1 .
Protein engineering of adhesion promoting peptides2 enables, through material-specific binding and tailored binding-strengths, innovations in material science (e.g. nano-pore membrans3a, kill & repel coatings3b), catalysis (for mix-plastic waste & in stainless-steal reactors)4, and plant/environmental health5. In the presentation the concepts to engineer material binding peptides will be presented and discussed in the outlined applications.

Plenary Lectures

Licheng Sun

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Prof. Licheng Sun received his PhD degree in 1990 from Dalian University of Technology (DUT), and went to Germany as a postdoc at Max-Planck-Institut für Strahlenchemie, and then as an Alexander von Humboldt postdoc fellow at Freie Universität Berlin. He moved to KTH Royal Institute of Technology, Stockholm, in 1995, became an associate professor in 1999 at Stockholm University, and a full professor in 2004 at the Department of Chemistry, KTH.

Electrochemical Conversion of Biomass/CO_2 into Value-added Products

To generate solar fuels, such as green H2, green MeOH, or green NH_3 by the reduction of respective H_2O, CO_2, or N_2, we need green electrons and green protons which can be obtained through water oxidation driven directly or indirectly by sustainable energy sources such as solar and wind power. To oxidize water more efficiently and economically, a catalyst is required. In photosystem II, nature uses a Mn_4CaO_5 as the water oxidation catalyst to generate green electrons and green protons in the forms of NAD(P)H and ATP, which in turn drive the reduction of CO_2, producing biomass. In this talk, our recent studies on the water oxidation mechanisms in photosystem II and the missing steps in the catalytical cycle will be presented. Our efforts of several decades in the design and synthesis of man-made molecular catalysts for water oxidation, O-O bond formation mechanisms and their assemblies in functional devices like photoelectrochemical (PEC) cells, anion exchange membrane water electrolyzers (AEM-WE) will be discussed. Recent progress on material-based catalysts, particularly for the oxidation and reduction of biomass derived 5-hydroxymethylfurfural (HMF) into respective furandicarboxylic acid (FDCA) and 2,5-bishydroxymethylfuran (BHMF) will be illustrated. Approach for electrochemical driven regeneration of NADH coupled with enzyme mediated CO_2 reduction into value-added C3-C4 compounds will be presented.

An-Ping Zeng

Westlake University
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Prof. An-Ping Zeng jointed Westlake University in April 2022 as Chair Professor for Synthetic Biology and Bioengineering and the founding Director of the Westlake Center of Synthetic Biology and Integrated Bioengineering.

Synthetic biology and biomanufacturing: from basic research to application

Synthetic biology is an interdisciplinary field aiming to design biomolecules and organisms and even to create artificial biomolecules and life with non-natural functions under the guidance of engineering principles. A key issue is how to transfer basic research and achievements in synthetic biology into applications in biomanufacturing which has great potential to revolutionize traditional manufacturing practice for a more sustainable development of economy and our society. I will first briefly describe the trends and needs of synthetic biology and biomanufacturing, and activities of Westlake University in these emerging areas. I will then share some of our work and experiences in basic research in synthetic biology and its applications in industrial biomanufacturing with example(s). Finally, I will introduce our latest progresses in basic research in C1-Cx Synthetic Biology and Soft-Matter Synthetic Biology and their applications for next generation of biomanufacturing based on one-carbon compound (CO_2, methanol etc.) and for future biomaterials, food and biomedicine.

Plenary Lectures

Volker F. Wendisch

Genetics of Prokaryotes, Biology & CeBiTec, Bielefeld University, 33615 Bielefeld. Germany
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Prof. Dr. Volker F. Wendisch holds the Chair of Genetics of Prokaryotes at the Faculty of Biology at Bielefeld University, Germany. He serves as deputy scientific director of its Center for Biotechnology CeBiTec and is member of the board of CLIB-Cluster, an international open innovation cluster of stakeholders active in biotechnology and bioeconomy from academic institutes and universities, investors, SMEs, and industry based in Düsseldorf, Germany.

Synthetic and systems metabolic engineering of *Corynebacterium glutamicum* for bioprocesses: a focus on nitrogen

Industrial bioprocesses require strain development to meet the demand for high product titers, yields and productivities and the sustainability goal to replace the use of finite substrates by renewables without competing uses in food and feed applications. Since more than 60 years, Corynebacterium glutamicum is an established host for the production of amino acids in the million-ton-scale and a flexible feedstock concept has been established to base production on sidestreams from agri- and aqua-culture. Amino acid and amine overproducing C. glutamicum strains can thus be used to bridge the nitrogen gap, i.e., the underutilization of nitrogen in biorefineries that target mostly biofuels and carboxylic acids only.
I will present strain development to enable production of amines functionalized by halogenation or N-alkylation since these molecules are sought after in pharma and agrochemical applications. For example, about 20% of all pharmaceutical small molecule drugs and around 30% of all active compounds in agrochemistry are halogenated. N-functionalized amines occur, for example, in the antibiotic vancomycin, the immunosuppressant cyclosporine, the cytostatic actinomycin, and they are used as building blocks in peptide drugs to stabilize them against proteolysis and to increase their membrane permeability. Moreover, I will present the use of sidestreams from agri- and aqua-culture as substrates for C. glutamicum bioprocesses

Keynote Lectures

Haijia Su

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Haijia Su, Vice President of Beijing University of Chemical Technology, is a National Leading Talent under China's Ten Thousand Talents Program and a recipient of the National Science Fund for Distinguished Young Scholars.

Next-Generation Metabolic Network Models for Rational Construction of High-performance Strains

Industrial strains are the "chips" driving the development of the green biomanufacturing industry, yet developing high-performance strains is hampered by long timelines, uncertainty, and high costs. With advancements in synthetic biology, modeling, and big data, there's a need for efficient, network model-guided construction technologies for single- and multi-strain systems to overcome key bottlenecks in conversion efficiency and production costs, advancing low-carbon industrial growth and accelerating dual carbon goals.

Dra. Eamim Daidrê Squizani

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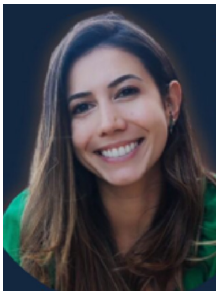
Head of Biotechnology



Sustainable Industrial Advancement through Synthetic Biology in Brazil

The Instituto SENAI de Inovação em Biossintéticos e Fibras (ISI B&F) drives industrial advancement in Brazil. Founded in 2016, ISI B&F leverages cutting-edge technologies to address market demands swiftly. At its core, ISI B&F houses a state-of-the-art biotechnology facility equipped with advanced technologies such as synthetic biology, DNA synthesis, sequencing, and bioprocess optimization. With a successful track record of over 43 completed R&D projects, our researchers collaborate closely with Brazilian industries, fostering an environment of open innovation and market-driven product design. Synthetic biology is a key focus, enabling solutions to diverse industrial challenges.

Junbiao Dai

Chinese Academy of Agricultural Science, China
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Junbiao Dai is a professor at Agricultural Genomes Institute at Shenzhen, Chinese Academy of Agricultural Sciences.

Decode and reprogram a plant genome

The synthesis of genomes from scratch has seen remarkable advancements, reaching significant milestones, especially in bacteria and yeast. However, the progress in synthesizing the genome of multicellular plants has not kept pace, likely due to the intricate nature of plant genomes, technical challenges linked to their large size and complexity, and the nuances of gene regulation and expression in plants.

Keynote Lectures

Yajun Yan
School of Chemical, Materials and Biomedical Engineering
University of Georgia, Athens, Georgia, USA
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Professor Yajun Yan has a broad academic background in Chemical and Biological Engineering. Over the past 20 years, his research has focused mainly on Synthetic Biology and Metabolic Engineering.

Metabolic Engineering Strategies towards Enhancing Synthetic Capability of Microbial Systems

The use of microbial systems for synthetic purposes holds significant promise in the realm of green manufacturing. However, in order to fully unleash the potential of these systems, it is imperative to broaden the range of products that can be synthesized and improve the efficiency of biosynthesis. Achieving these goals necessitates concerted efforts in two areas: constructing synthetic pathways for compounds that are beyond the scope of natural hosts and developing overproducing strains.

Qipeng Yuan
Beijing University of Chemical Technology, Beijing, China
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Prof. Yuan is a distinguished professor of the Changjiang Scholars Program, the recipient of the 11th China Youth Science and Technology Award and one of Beijing's "Top 100 Leading Talents".

Synthetic biology for the production of natural products

The massive consumption of fossil resources and the development of the chemical industry have driven progress of human civilization, but they are facing a series of problems such as unsustainability and environmental pollution. Bio-manufacturing of chemicals is a promising solution to achieve sustainable development, of which construction of artificial efficient cell factories is the core and it will greatly promote the development of the bioeconomy.

Petros Gikas
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Prof. Gikas is the Dean of the School of Chemical and Environmental Engineering, at TUC and Director of the "Design of Environmental Processes Laboratory". He has published more than 100 academic papers and has more than 250 scientific conference presentations.

Energy self-sustainable wastewater treatment plants: A wishful thinking or a near reality?

Our lab has manufactured a large scale demo plant for energy production from biosolids, using a novel process for low moisture-high energy biosolids production, combined with biosolids gasification. The above, if combined with novel downstream process, can drive to an energy self sustainable wastewater treatment process.

Keynote Lectures

Fuli Li

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Dr. Fuli Li, Professor and Director for C1 Biotechnology Research Center, Qingdao Institute of Bioenergy and Bioprocess Technology. He got Ph.D from Shandong University (2003) and did Postdoc research at Max-Planck Institute of Terrestrial Microbiology under the supervise of Prof. Thauer (2005-2007).

Next-Generation Metabolic Network Models for Rational Construction of High-performance Strains

China has announced that it will peak carbon dioxide emissions by 2030 and achieve carbon neutrality by 2060. To achieve this strategic goal, the Chinese government has put forward specific task requirements for various regions and industries. Key industries such as coal, electricity, steel, and chemical account for over 70% of China's total greenhouse gas (GHG) emissions, which are facing tremendous pressure to reduce CO_2 emissions.

Ricardo Antonio Polanczyk

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Prof. Ricardo Antonio Polanczyk is a Professor at Faculty of Agrarian and Veterinarian Sciences, Sao Paulo State University, Jaboticabal. His research interests include sustainable microbial control of agricultural pests; compatibility between pesticides and biopesticides; biopesticides field persistence; and interaction between biopesticides and ecosystem services.

Biological control and sustainability of bioproducts for the bioeconomy

Biological control agents, such as insect parasitoids, predators and microorganisms (fungi, bacteria) are essential approaches for sustainable bioproduct accounted for bioeconomy improvements. These biological control agents assure satisfactory agriculture productivity without or reduced amounts of pesticides, preserving the ecossystem services and the environment.

Yongqin Lv

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Prof. Yongqin Lv is a Professor at Beijing University of Chemical Technology, and Deputy Directors of International Joint Laboratory for Bioenergy of Ministry of Education and Beijing Key Laboratory of Bioprocess.

Electrochemically Driven Biocatalytic Conversion of CO_2 into Fuels and Chemicals

The transformation of carbon dioxide (CO_2) into fuels, chemicals, and materials holds great potential for reducing fossil fuel consumption and mitigating greenhouse gas emissions that drive climate change. Biocatalytic conversion of CO_2 into valuable chemicals offers distinct advantages, including high selectivity and mild reaction conditions, making it a pivotal technology for advancing the chemical and new materials industries.

Keynote Lectures

Yalin Lei

University of Geosciences, Beijing, China
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Yalin Lei, born in July 1966 in Hubei Province. She is a doctoral supervisor and professor of resources, energy, environmental economics and policy at the School of Economics and Management, China University of Geosciences, Beijing (CUGB).

The Impact of Production Factor Allocation on China's Biopharmaceutical Industry: A Decomposition Approach Based on Growth Accounting

The biopharmaceutical industry, as a strategic emerging industry in China's future worth 10 trillion yuan, faces deep-seated problems such as low resource allocation efficiency and serious resource misallocation. Previous scholars have conducted extensive research on the reconfiguration of factors between industries, but there has been insufficient research on the allocation of production factors within segmented industries.

Vagelis G. Papadakis

Department of Civil Engineering, University of Patras, Greece
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Prof. Papadakis holds a diploma in Chemical Engineering and a PhD from the University of Patras, Greece. He has long experience on scientific, demonstration and development projects, authored many papers and awarded by ACI, etc.

Agricultural residues can contribute significantly to meeting energy needs - *Technical, environmental and economic perspectives*

Fossil fuels still dominate energy production, but they contribute significantly to the worsening climate and many countries are working towards replacing them with renewable energy sources. Biofuels, such as biochar, bio-oil, biogas and hydrogen, are one of the most important renewable and sustainable energy sources and can be produced in vast amounts from agricultural residues through biochemical or thermochemical processes.

Jianhe Xu

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Dr. Xu is a professor of Enzyme Engineering at ECUST, the Executive Director of Shanghai Collaborative Innovation Center of Biomanufacturing, and the Editor-in-Chief of an international journal, Bioresources and Bioprocessing, ranking JCR Q1.

Heterologous Biosynthesis and Structual Derivation of Natural Terpene Molecules in Microbial Cell Factories

Terpenoids are one of the most diverse natural compounds, which include terpenes with a number of isoprene (C5) units, as well as C5 polymers containing phosphate, hydroxyl, carboxyl, aldehyde and other functional groups. These terpenoids play important roles in higher plants, fungi, bacteria, insects and marine organisms, such as plant hormones, carotenoids in photosynthesis, steroids in cell membrane, and quinone compounds transferring electron.

Keynote Lectures

Cintia Milagre

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Prof. Cintia Milagre is currently an Associate Professor in the Department of Biochemistry and Organic Chemistry at the Institute of Chemistry, UNESP (São Paulo State University), in Araraquara.

Unlocking the Power of Enzymes: Key Players in the Bioeconomy Revolution

This keynote lecture will explore the state-of-the-art in biocatalysis and its transformative potential for advancing the bioeconomy. Emphasizing its alignment with the United Nations Sustainable Development Goals (SDGs) outlined in the 2030 Agenda, the lecture will highlight successful industrial applications of biocatalysis. Key challenges and opportunities for scaling biocatalytic processes in Brazil will also be discussed, with a focus on overcoming current barriers and fostering collaborative initiatives to accelerate the adoption of this sustainable technology.

Jun Ge

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Dr. Jun Ge is a professor at Department of Chemical Engineering, Tsinghua University. Ge specializes in industrial enzymatic catalysis, nanobiotechnology and biomedicine. He has published over 110 papers in journals such as Nature Nanotechnology, Nature Catalysis, Nature Communications, Science Advances, JACS etc.

Construction and Application of Enzyme-Metal Hybrid Catalysts

The exploitation and application of new industrial enzymes stand as the core enabling technologies of green bio-manufacturing. To address challenges such as limited reaction types, substrate specificity, and reaction conditions of industrial enzyme catalysis, our research combines the protein cavities that can be precisely regulated for enzymatic catalysis with the designable molecular activation mechanisms of metal catalysis to construct enzyme-metal hybrid catalysts.

Rodrigo Fernando Costa Marques

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Rodrigo Fernando Costa Marques holds a degree in Chemistry from UNESP (1995), with a Master's and Ph.D. in Physical Chemistry from UNESP and the University of York (England).

The Influence of Alternating Magnetic Fields on the Biocatalytic Properties of Enzymes

Research conducted by the group highlights the influence of alternating magnetic fields on the biocatalytic efficiency of enzymes immobilized on magnetic nanoparticles. These findings open new avenues for modeling parameters to optimize the catalytic properties of magnetically activated enzymatic systems, contributing to advancements in sustainable biofuel production and other industrial applications.

Keynote Lectures

Meiping Zhao
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Professor Meiping Zhao is a former director and currently a Principal Investigator at the Institute of Analytical Chemistry, College of Chemistry and Molecular Engineering, Peking University.

Bio-Nanocomposites for Target Protein Capture, Activity Suppression, and Post-Translational Modification Profiling in Live Cells

We have developed a versatile magnetic bio-nanocomposite capable of precisely capturing the multifunctional protein, human apurinic/apyrimidinic endonuclease 1/reduction-oxidation factor 1 (APE1), within various live cells.

Peter-Leon Hagedoorn
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Associate professor Hagedoorn is an expert in the mechanistic investigation of metalloenzymes. He pioneered a new approach for metalloproteomics, called MIRAGE. Pursuing his interest in kinetic characterization of enzymes on complex substrates he advanced the use of enzyme calorimetry.

EPR for biocatalysis

Roughly one third of all enzymes contain one or more metal cofactor, and the identity, oxidation state and coordination environment of the metal cofactor provides essential functional information. Electron Paramagnetic Resonance (EPR) spectroscopy is very useful to measure metal cofactors in enzymes even in complex matrices such as whole cells, can be used to determine the redox state and obtain information on the direct environment of the Furthermore, sites.

Min Jiang
Nanjing Tech University, China
National High-Level Personnel of Special Support Program
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Prof. Min Jiang currently serves as the Dean of the Science and Technology Office. His research focuses on the biorefinery of waste carbon resources, including straw, waste plastics, and industrial waste gases, transforming them into valuable products.

Development and perspective of biorefinery from the waste carbon resourcese

With the development of synthetic biology, the biorefinery technology can produce various biochemicals and biofuels through different chassis microorganisms by using waste carbon resources as raw materials, such as CO_2, lignocellulose, waste plastics, etc. Ultimately, energy saving, emission reduction and consumption reduction in the production process can be achieved through resource substitution, route change, and industrial upgrading, and zero-carbon or negative carbon emissions throughout the life cycle of waste carbon resources can be achieved.

Keynote Lectures

Tassia Lopes Junqueira
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Dr. Tassia Junqueira is a researcher and leader of the Industrial Technologies Group at the Brazilian Biorenewables National Laboratory (LNBR), part of the Brazilian Center for Research in Energy and Materials (CNPEM).

Driving Sustainable Innovation in Biomanufacturing

The transition toward sustainable production systems is imperative in addressing global challenges such as climate change, biodiversity loss, and pollution. Biomanufacturing, leveraging biological processes to produce fuels, chemicals, and materials, holds significant promise by valorizing biomass potential and biodiversity to address these challenges. However, advancing biomanufacturing technologies requires a deep understanding of the factors that influence their performance and sustainability.

Leonardo V. Fregolente
Chemical Engineering School, University of Campinas, Brazil
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From 2006 to 2017, he worked at Petróleo Brasileiro S.A. (PETROBRAS) as a Process Engineer and Manager of operational areas at the largest Brazilian oil refinery (REPLAN). Since 2017, he has been a professor at the University of Campinas (Unicamp).

Process Design for Water Separation in Biodiesel Using Hydrogels

To address the control of water content in biodiesel and other biofuels, research is being conducted at the School of Chemical Engineering at Unicamp, within the E-RENOVA unit. These efforts focus on developing new processes for separating water from fuels using polymeric hydrogels. Different polymer formulations and process designs are being explored based on the amount of water to be removed. The results achieved have demonstrated that this new solution offers significant simplicity and flexibility in application, making it potentially competitive and advantageous in certain scenarios compared to traditional technologies available in the market.

Jinguang Hu
Department of Chemical and Petroleum Engineering,
Schulich School of Engineering, University of Calgary
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Dr. Jinguang Hu, is an Associate Professor and Schulich Research Chair in the Department of Chemical and Petroleum Engineering at the University of Calgary, Canada. He leads “Biomass & Biorefinery Research Lab” at UCalgary. His current research focus on biomass valorization, sustainable energy and bioinspired materials/ systems for Energy, Environmental and Biomedical application.

Biomass Photorefinery for Sustainable Bioeconomy

The general objective of my research is utilizing biomass, photo/bio/electro-catalysts, and cell factories to design and fabricate renewable and sustainable bioproducts and systems, via bioinspired routes, for Energy, Environmental, and Biomedical application. These hybrid technology approaches provide potential route to economically viable energy production (hydrogen + biofuels) + biomass CO_2 captured negative emission technologies (NET) (biomaterials + biochemicals), thus are clearly an important early step in the complete decarbonization of our society.

Posters

Location: Liberdade

P1. **Intelligent biomanufacturing technology and equipment**, Yingping Zhuang, East China University of Science and Technology.

P2. **Cellulose hydrogel-coated mesh as a bio-based technology for oil/water separation**, Flavia Ferreira dos Santos Vieira, Leonardo Vasconcelos Fregolente, Universidade Estadual de Campinas.

P3. **Application of multiple strategies to enhance methylparaben synthesis by the engineered *Saccharomyces cerevisiae***, Lu Liu, Kai Wang, Pan Liu, Limin Ba, Yanhui Liu, Beijing University of Chemical Technology.

P4. **Antioxidant performance of fractionated kraft lignin in biodiesel**, João Cláudio Martins Vieira, Gabriel Julio da Silva, Patricia Fazzio Martins Martinez, Universidade Estadual de Campinas.

P5. **Engineering *Corynebacterium glutamicum* for the efficient production of n-acetylglucosamineB**, Zemin Li, Wenshuang Lu, Tianwei Tan, Beijing University of Chemical Technology.

P6. **Volatile fatty acid extraction: experimental investigation of hexadecane as a selective solvent**, Riann de Queiroz Nóbrega, Igor Ferreira Fioravante, Bruno Xavier Ferreira, Jean-Christophe Bonhivers, Rubens Maciel Filho, Adriano Pinto Mariano, Jean Felipe Leal Silva, Universidade Estadual de Campinas.

P7. **Hydrogenase inspired catalyst promotes H_2-driven autotrophic growth and products accumulation of *Clostridium ljungdahlii***, Zhiqiong Wen, Wenjin Dong, Xiaoqing Ma, Jian Liu, Fuli Li, Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences.

P8. **Developed and engineered a novel *Bacillus subtilis* autoinduced extracellular expression system based on the LuxI/R device**, Dongbang Yao, Bin Wang, Zemin Fang, Yazhong Xiao, Anhui University.

P9. **The cepenfito contribution for brazilian sustainable sugarcane production**, Ricardo Antonio Polanczyk, Universidade Estadual Paulista.

P10. **Study on salt adaptation mechanism of *Halomonas elongata*: unveiling the metabolic regulation mechanism of ectoine biosynthesis through multi-omics**, Junxiong Yu, Hao Liu, Yue Zhang, Zejian Wang, East China University of Science and Technology.

P11. **De novo high-titer production of tocotrienols in Y*arrowia lipolytica***, Chenchen Xu, Tianwei Tan, Beijing University of Chemical Technology.

P12. **Illuminate the metabolism of substance transfer from cross scale and process optimization in vitamin B12 production by *Pseudomonas denitrificans***, Zejian Wang, Zemin Fang, Junxiong Yu, East China University of Science and Technology.

P13. **Material binding peptides as tool to produce stable and rainfast biological pesticides**, Florian Bourdeaux, Ulrich Schwaneberg, Rwth Aachen University.

P14. **Metabolic fluxes to complex pathways by scramble in *Yarrowia lipolytica***, Quanlu Zhao, Haoran Bi, Tianwei Tan, Beijing University of Chemical Technology.

P15. **Study on the metabolic mechanism of solvent production in *Clostridium beijerinckii* fermentation**, Dandan Jiang, Xuanyue Lu, Yixuan Fan, Kundi Zhang, Liangliang Gao, Muhammad Jawad, Fuli Li , Ziyong Liu, Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences.

P16. **Overexpression of an alkaline fungal laccase in *coprinopsis cinerea* using molasses as a carbon source**, Zemin Fang, Jie Xu, Xianhua Wang, Juanjuan Liu, Yazhong Xiao, Anhui University.

P17. **Tunnel engineering to improve the efficiency and cofactor dependence of glycolaldehyde synthase**, Xinyu Tian, Tianwei Tan, Beijing University of Chemical Technology.

P18. **Capture and reutilization of greenhouse gases CO_2 and CH_4**, Xu Zhang, Beijing University of Chemical Technology.

P19. **Assessing the potential of biofuels to mitigate greenhouse gas emissions in emerging markets of Africa and Asia**, Jean Felipe Leal Silva, Heitor Cantarella, Luis Augusto Horta Nogueira, Raffaella Rossetto, Rubens Maciel Filho, Glaucia Mendes Souza, Universidade estadual de Campinas.

P20. **Upcycling CO_2 into succinic acid via electrochemical and engineered *Escherichia coli***, Zhijin Gong, Wei Zhang, Jiayao Chen, Jingchuan Li, Beijing University of Chemical Technology.

P21. **Engineered hypermutation improves cyanobacterial carbon fixation efficiency under combined high light and high temperature stress**, Huili Sun, Guodong Luan, Xuefeng Lu, Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences.

P22. **A multi-enzyme cascade catalytic platform for the Conversion of C1 into C3 compounds**, Kaixing Xiao, Dan Wang, Zhiyao Peng, Yaqi Kang, Ruoshi Luo, Jikai Zong, Ling Zhou, Kun Rong, Yude Su, Chongqing University.

P23. **Unlocking the potentials of cyanobacterial photosynthesis for directly converting carbon dioxide into glucose**, Jiahui Sun, Shanshan Zhang, Guodong Luan, Xuefeng Lu, Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences.

P24. **Investigating the water effects on the kraft lignin solubility in deep eutectic solvents**, Fernanda Sossai Altoé, Sérgio Antônio Mendes Vilas-Boas, Julia Yukie Murata, Mariana Conceição da Costa, Universidade Estadual de Campinas.

P25. **Construction of engineered *S. cerevisiae* for amorpha-4,11-diene production based on the synergy of multiple strategies**, Yiying Huo, Tianwei Tan, Beijing University of Chemical Technology.

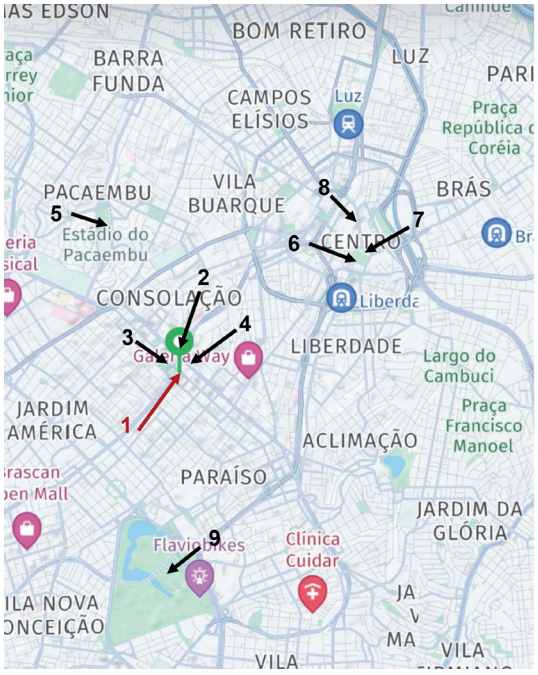
P26. **S-scheme heterojunction constructed by NH_2-mil-125@cofe PDA for realizing photocatalytic NADH regeneration**, Feixuan Li, Jintian Zhang, Shizhen Wang, Xiamen University.
P27. **Research on countermeasures for low-carbon optimization and high-quality development of China's biopharmaceutical industry driven by new-quality productivity**, Zimin Cao,Yong Jiang, Yalin Lei, Yueyue Zhang, China University of Geosciences.
P28. **Application of deep eutectic solvents for delignification and obtaining derivatives from lignocellulosic biomass**, Wellington Moreira corrêa, Universidade estadual de Campinas.
P29. **Biological synthesis of heart and kidney disease biomarkers PSA and BNP**, Yan Xu, Xiaofan Pan, Beijing University of Chemical Technology.
P30. **Preparation of keratin solutions by deep eutectic solvents for antimicrobial dressing**, Hangbin Lei, Bing Xie, Feilu Huang, Xu Hao, Shizhen Wang, Xiamen University.
P31. **Application of process control in biorefinery for enhanced second-generation biobutanol production**, Changsheng Su, Di Cai, Peiyong Qin, Beijing University of Chemical Technology.
P32. **Recovery of volatile fatty acids from fermentation broth using ethyl acetate as solvent**, Igor Ferreira Fioravante, Riann de Queiroz Nóbrega, Jean Felipe Leal Silva, Universidade Estadual de Campinas.
P33. ***Corynebacterium glutamicum* cell factory design for the efficient production of cis, cis-muconic acid**, Menglei Li, Yang Zhang, Congbin Li, Keqin He, Tianwei Tan, Beijing University of Chemical Technology.
P34. **Engineering C*orynebacterium glutamicum* for the production of carotenoids from aquaculture sidestream as feedstock**, Ina Schmitt, Florian Meyer, Nadja A. Henke, Volker F. Wendisch, Petra Peters-Wendisch, Bielefeld University.
P35. **Innovating green and low-carbon technologies to enable carbon peaking and carbon neutrality: progress of green carbon**, Xiang Qiu, Xutong Yang, Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences.
P36. **Microbial utilization of formic acid and syngas to produce ethanol**, Kai Wang, Zhuoheng Wu, Tianwei Tan, Beijing University of Chemical Technology.
P37. **MgO particles synthesis via spray pyrolysis aiming application in heterogeneous catalysis**, Vítor Mattos Visoná, Rodolfo Debone Piazza, Rodrigo Fernando Costa Marques, Universidade Estadual Paulista.
P38. **Enzymatic synthesis of 2'-fucosyllactose from mannose with cofactor regeneration system**, Chenqi Cao, Yu Ji, Luo Liu, Beijing University of Chemical Technology.
P39. **Harnessing *E. coli Nissle 1917* for the Heterologous Expression of Cecropin**, Yu Hua, Yang Zang, Yanhui Liu, Beijing University of Chemical Technology.
P40. **Investigation of the liquid-liquid phase separation induced by deep eutectic solvents with coenzyme regeneration**, Yuxin Chen, Xuefu Zeng, Jintian Zhang, Shizhen Wang, Xiamen University.
P41. **Redesign to improve the product selectivity of catechol methyltransferase in vanillin biosynthesis pathway**, Jianyu Long, Yushan Zhu, Tianwei Tan, Beijing University of Chemical Technology.
P42. **Moisture content and solid-to-liquid ratio effects on the delignification of eucalyptus wood chips with betaine-based deep eutectic solvents**, Pedro H. G. Aquino, Mariana C. da Costa, Universidade Estadual de Campinas.
P43. **Magnetic cross-linked cellulase aggregates: a strategy for cello-oligosaccharides production from lignocellulosic biomass**, Rodolfo Piazza, Guilherme Nunes Lucena, Caio Carvalho dos Santos, Gabriel Cardoso Pinto, Caroline Oliveira da Rocha, Miguel Jafelicci Júnior, Kelly Johana Dussán, Ariela Veloso de Paula, Rodrigo Fernando COsta Marques, Universidade Estadual Paulista.
P44. **Efficient expression of functional bont/a light chain fusion protein in bacillus subtilis**, Yuhan Zhang, Haobo Zhang, Beijing University of Chemical Technology.
P45. **Synthesis and Use of Hydrogel Raschig Rings for Continuous Water Removal from Biodiesel**, Henrique L. Gonçalves, Patrícia B. L. Fregolente, Maria Regina W. Maciel, Leonardo V. Fregolente, Universidade Estadual de Campinas.
P46. **Continuous oil dehydration using cellulose hydrogels: structured vs. random packing**, Bianca Ramos Estevam, Aldemir Aparecido Cavallini Junior, João B. P. Soares, Ângela Maria Moraes, Leonardo Vasconcelos Fregolente, Universidade Estadual de Campinas.
P47. **Construction of Enzyme Molecular Recognition Machines: Molecular Imprinting**, Ying Liu, Ziman Chen, Yan Li, and Yongqin Lv*, Beijing University of Chemical Technology.
P48. **Abiotic Synthetic Receptors for Selective Recognition of Microorganisms**, Shengnan Shao, Shuang Gao, Yuman Guo, Yongqin Lv*, Beijing University of Chemical Technology.
P49. **Impact of Kraft lignin concentration on Functional Solubility Parameter determination by organic solvent fractionation**, LUZ, L.T.C.; OLIVEIRA, F.P. ; MARTINS-VIEIRA, J.C. , MARTINEZ, P.F.M.*, University of Campinas.
P50. **Synthesis of lignin nanoparticles for the development of an ecological sunscreen**, MARADINI, Grazielle da Silv; VIEIRA, Joao Claudio Martins, MARTINEZ, Patricia Fazzio Martins, Universidade Estadual de Campinas.
P51. **Impact of Kraft lignin concentration on Functional Solubility Parameter determination by organic solvent fractionation**, Luiza Trench Luz, Felipe Petroff de Oliveira, João Cláudio Martins Vieira e Patricia Fazzio Martins Martinez, University of Campinas.
P52. **Synthesis of lignin nanoparticles for the development of an ecological sunscreen**, Grazielle da Silva Maradini, João Cláudio Martins Vieira, Patricia Fazzio Martins Martinez, Universidade Estadual de Campinas.

Conference Venue

Tivoli MOFARREJ SAO PAULO Hotel
Alameda Santos, 1437 - Cerqueira César

Located in Jardins, one of the noblest neighborhoods in the capital of São Paulo and one block away from Avenida Paulista, Tivoli Mofarrej São Paulo Hotel is the right choice to experience the best of the city. With all convenience of a five-star hotel and the best view of the capital of São Paulo, the hotel turns the stay of its guests in unique experiences, whether for travelers or São Paulo's residents who wish a special treatment at Anantara Spa or even in the Seen Restaurant & Bar, which offers a privileged view to the wonderful skyline of São Paulo, rocking São Paulo's nights.In addition, cozy rooms and the biggest and newest presidential suite in Latin America, excellent meeting rooms, outdoor swimming pool and the Must Restaurant make Tivoli Mofarrej São Paulo the ideal destination to discover São Paulo.

Nearby Attractions



1 Tivoli Mofarrej São Paulo Hotel
2 São Paulo Art Museum
3 Tenente Siqueira Campos Park
4 Avenida Paulista
5 the Soccer Museum
6 Catedral Metropolitana de São Paulo
7 Marco Zero
8 Centro Cultural Banco do Brasil
9 Ibilapuela Park

With a privileged location, Tivoli Mofarrej São Paulo is located in Jardins, one of the best neighborhoods in São Paulo. Close to the elegant shops of Rua Oscar Freire and less than a block from the biggest Brazilian financial center, Avenida Paulista. In addition to easy acessibility to public transportation within walking distance, we are located 9 km from Congonhas Airport, the citys central airport, accessible by bus or subway.

Transportation

Here are the following transportation methods from São Paulo/Guarulhos–Governador André Franco Montoro International Airport (GRU) to Tivoli Mofarrej São Paulo Hotel:

Taxi

- Cost: Approximately 150 Brazilian reais.
- Time: Depending on the traffic conditions, it takes about 40 - 60 minutes.

Airport Shuttle Bus

- Cost: 50 Brazilian reais.
- Time: It takes about 1 hour and 41 minutes.
- Route: Take the airport shuttle bus in the direction of Aeroporto Internacional de Guarulhos, then get off in the city center, and then take the subway or taxi to the hotel.

Combination of Subway and Bus

- Cost: The bus fare is about 5 Brazilian reais.
- Time: It takes about 1 hour or more, depending on the transfer situation.
- Route: Take the bus from the airport to the subway station in the city center (such as Penha Station), transfer to the subway to the station near the hotel (such as Trianon - MASP Station), and then walk to the hotel.

Private Transfer Service

- Cost: It depends on the quotation of the service provider, usually slightly more expensive than a taxi.
- Time: It takes about 40 - 60 minutes.
- Advantages: There is no need to worry about luggage handling and traffic routes, and the service is more comfortable and convenient.

It is recommended to choose the appropriate transportation method according to personal needs and budget. If you have a lot of luggage or want a more comfortable and convenient travel experience, you can consider taking a taxi or private transfer service. If you have a limited budget, you can choose the airport shuttle bus or the combination of subway and bus.

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