

The second Announcement

The 5th International Conference on Applied Biotechnology & EB 1.0: The First International Conference on Engineering Biology

December 4-5th, 2020, Tianjin, P.R.China

<http://www.icab2020.org/>

The International Conference on Applied Biotechnology which had been run successfully in 2012、2014、2016 and 2018, will welcome its 5th opening on December 4-5th, 2020 in Tianjin University of Science & Technology Tianjin (TUST), Tianjin, P.R.China. We have had more than 600 experts and scholars from U.S.America, the United Kingdom, Germany, Japan, and other countries and regions all around the world attending the conferences and 150 plus famous scientists sharing their academic reports. The successful convening of the international conferences has played an important role in promoting scientific and technological cooperation and healthy development in the fields of applied biotechnology domestically and globally.

Engineering biology, that is using engineering principles to simulate or redesign genes, molecules and cells, to develop new products, processes and systems, which will bring revolutionary effects in the fields of chemical materials, medical health, agricultural food, sustainable energy, ecological environment, etc.. Engineering biology is promoting the development of a new generation of biotechnology, leading the direction of industrial technological innovation and catalyzing the emerging of biological economy.

To meet the urgent needs of the development of applied biotechnology and accelerate the growth of engineering biology, the 5th International Conference on Applied Biotechnology & EB 1.0: The First International Conference on Engineering Biology will be held on 4-5th December, 2020 in Tianjin. Acknowledged scholars and entrepreneurs will be invited to share the most up-to-date research and development in industrial fields, a high-level platform will be provided for scientists and scholars of domestic and overseas universities, research institutes and enterprises to exchange ideas. The conference will, definitely, accelerate the cooperation among production, teaching and research and transformation from scientific research to industrial products and advance the qualified development of the biological technology and industry.

I Organizers:

Sponsors:

- ✧ Chinese Society of Biotechnology
- ✧ Tianjin University of Science & Technology
- ✧ Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences (TIB, CAS)

Organizers:

- ✧ Key Laboratory of Industrial Fermentation Microbiology, Ministry of Education; Tianjin Key Laboratory of Industry Microbiology
- ✧ National Engineering Laboratory for Industrial Enzymes
- ✧ CAS Key Laboratory for Microbial Systems Biotechnology
- ✧ International Science and Technology Cooperation Base of Food Nutrition/Safety and Medicinal Chemistry

- ✧ National and Local United Engineering Lab of Metabolic Control Fermentation Technology
- ✧ Tianjin Engineering Research Center of Microbial Metabolism and Fermentation Process Control
- ✧ Tianjin Society for Microbiology
- ✧ College of Biotechnology, TUST
- ✧ Tianjin Key Laboratory for Industrial Biosystems
- ✧ Bioprocess Engineering and Tianjin Engineering Center for Biocatalytic Technology

Supporting agencies:

- ✧ CanSinoBIO
- ✧ Beckman

II Dates and Venues:

Conference date: December 4-5th, 2020

III Major Topics:


Invited topics from fundamental sciences to applied technology on biology, including (but are not restricted to) the following areas:





- Biological Data Science and Engineering
- Gene Synthesis and Assembly Engineering
- Molecular Biology and Cell Engineering
- Intelligent Biological Process Engineering

IV Conference Form:

- ✧ Online

V Conference Agenda:

Date	Time	Agenda	Channel
December 4 th	09:00--11:40	Opening Ceremony Keynote Lectures	

December 4th	13:30--16:55	Parallel sessions	Session 1: Molecular Biology and Cell Engineering	
			Session 2: Biological Data Science and Engineering	
December 5th	8:30--11:40	Parallel sessions	Session 3: Intelligent Biological Process Engineering	
			Session 4: Gene Synthesis and Assembly Engineering	

VI Conference Timetable

4th December (Friday)

Time (Beijing)	Title	Speaker	Institution
09:00--09:30	Opening Ceremony		
	1. Introduction		
	2. Welcome speech		
	3. Photograph		
Keynote Lectures			
09:30--10:00	Synthetic Biology Twenty Years On	Prof. Huimin Zhao	University of Illinois at Urbana-Champaign
10:00--10:30	Synthetic Pyruvate-responsive Genetic Circuits for Dynamically Fine-tuning Metabolic Pathways in <i>Bacillus subtilis</i>	Prof. Guocheng Du	Jiangnan University
10:30--10:40	Break		
10:40--11:10	Engineering <i>Rhodococcus ruber</i> as an Efficient Whole-cell Biocatalyst for Biomanufacturing Industry	Prof. Huimin Yu	Tsinghua University
11:10--11:40	Engineering Bi-directional Microbial Electron Pathways for Energy and Chemicals Production	Prof. Hao Song	Tianjin University
Parallel sessions 1: Molecular Biology and Cell Engineering			
13:30--14:00	Molecular therapeutic targets and industrial application of fatty liver disease	Prof. Yu Li	Shanghai Institute of Nutrition and Health, Chinese Academy of Sciences
14:00--14:30	Enzyme catalyst engineering	Asso. Prof. Jun Ge	Tsinghua University
14:30--15:00	Design principles of bacterial signal transduction network	Prof. Beile Gao	South China Sea Institute of Oceanology, Chinese Academy of Sciences

15:00--15:15	Beckman workstation synthetic biology solutions	Senior Engineer Zijian Zhang	Beckman
15:15--15:25	Break		
15:25--15:55	Structural base and biosynthesis of hydroxyl amino acids	Prof. Huimin Qin	Tianjin University of Science and Technology
15:55--16:25	How to recombine beneficial substitutions? Lessons learned from CompassR analysis of a lipase	Prof. Ulrich Schwaneberg	Rheinisch-Westfälische Technische Hochschule Aachen University
16:25--16:55	Reprogramming cellular metabolism enhances yeast's fitness on xylose	Docent Yun Chen	Chalmers University of Technology
Parallel session 2: Biological Data Science and Engineering			
13:30--14:00	Some (surprisingly) simple hacks to get more out of your data	Prof. Wilson Wen Bin Goh	Nanyang Technological University
14:00--14:30	WDCM: Global Data Cooperation on Microbial Resources	Prof. Juncai Ma	Institute of Microbiology, Chinese Academy of Sciences
14:30--15:00	Data-driven de novo design of protein structure and sequence	Prof. Haiyan Liu	University of Science and Technology of China
15:00--15:10	Break		
15:10--15:40	Modeling Enzymatic Enantioselectivity using Quantum Chemical Methodology	Researcher Xiang Sheng	Stockholm University
15:40--16:10	Integration of various bio-data in metabolic network model analysis	Prof. Hongwu Ma	Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences
16:10--16:40	High quality analysis of metagenomes	Prof. Igor Goryanin	University of Edinburgh

5th December (Saturday)

Time (Beijing)	Title	Speaker	Institution
Parallel sessions 3: Intelligent Biological Process Engineering			
8:30--9:00	Construction of synthetic microbial consortium for biorefinery	Prof. Min Jiang	Nanjing Tech University
9:00--9:30	Engineering methyltrophic yeasts for overproduction of fatty acids	Prof. Yongjin Zhou	Dalian Institute of Chemical Physics, Chinese Academy of Sciences
9:30--10:00	Engineering yeast stress tolerance for efficient biorefinery: zinc responsive genes play an important role	Prof. Xinqing Zhao	Shanghai Jiao Tong University
10:00-10:10	Break		
10:10-10:40	Bioconversion of methane for the production of bio-based chemical and fuel by methanotrophs	Prof. Qiang Fei	Xi'an Jiaotong University
10:40-11:10	Bioprocess optimization, scaling up techniques and perspective on future intelligent biomanufacturing	Asso. Prof. Jianye Xia	East China University of Science and Technology
11:10-11:40	Microbial biosensing based on CRISPR-Cas system	Prof. Long Ma	Tianjin University of Science and Technology
Parallel session 4: Gene Synthesis and Assembly Engineering			
8:30--9:00	Mining and engineering of microbial secondary metabolite pathways	Prof. Youming Zhang	Shandong University
9:00--9:30	Decode and Reprogram a Genome	Prof. Junbiao Dai	Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences
9:30--10:00	Metagenomics facilitates the development of biotechnology	Dr. Linxing Chen	University of California

10:00-10:10	Break		
10:10-10:40	The application of next-generation sequencing techniques in synthetic biology	Director of R&D Ye Chen	GENEWIZ Suzhou, China
10:40-11:10	The glycosylase base editor (GBE) approach enables specific C-to-A and C-to-G genomic conversion	Prof. Changhao Bi	Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences
11:10-11:40	Gene synthesis and cloning	Senior scientist Qingwei Meng	Nanjing Genscript Biotechnology Co., Ltd.

Future Star Forum (TUST)

Date: 5th December (Saturday)

Venue: Room 206 2nd Floor, No.2 Building, TUST

No.	Time (Beijing)	Title	Speaker
1	08:30--8:45	Overview of research on metabolic mechanism of higher alcohols	Huan Wang
2	8:45--9:00	Three-dimensional ordered magnetic macroporous metal organic frameworks as a platform enzyme immobilization	Yuxiao Feng
3	9:00--9:15	Preparation of superhydrophobic membrane based on bacterial cellulose for oil-water separation	Fengping Wang
4	9:15--9:30	Study on the autolysis mechanism of <i>Bacillus amyloidotica</i> and its allogenic protein expression	Jinfang Zhang
5	9:30--9:45	Construction and application of <i>Aspergillus niger</i> engineered strain with high yield of itaconic acid	Yaqi Wang
6	9:45--10:00	WINE YEAST	Ruirui Li
7	10:00--10:15	Optimization of fermentation process for L-leucine production by <i>C. glutamicum</i>	Yufu Zhang
8	10:15--10:30	Research progress of agilawood: China's precious medicinal materials and spices	Jing Liu

9	10:30--10:45	Predication of the novel protein from de novo transcriptome assembly	Kenan Wang
10	10:45--11:00	Genes of <i>Grifola frondosa</i> related to polysaccharide synthesis and its effect on polysaccharide yield	Jian Li
11	11:00--11:15	Structural characterization, physiological activity and synthetic mechanism of extracellular polysaccharides from a strain of <i>Aureobasidium pullulans</i>	Yuting Liao
12	11:15--11:30	Research progress on silicone in diatom cell wall	Zhuo Chen
13	11:30-11:45	Growth and development in <i>Aspergillus spp</i>	Jie Li
14	11:45--12:00	Functional characteristics and research progress of melanoidins	Zhisong Wang
Break			
15	13:30--13:45	Gradient regulation of acetate ester production in <i>Saccharomyces cerevisiae</i> during Chinese Baijiu fermentation	Danyao Cui
16	13:45--14:00	Remove monosaccharide by <i>Komagataeibacter xylinus</i> and its effects on antioxidant capacity and flavor profile of Chinese wolfberry juice	Tianzhen Zhang
17	14:00--14:15	Genetic marker technology short tandem repeats (STR)	Xuying Qin
18	14:15--14:30	Study on the functional mechanism of anti-alcohol stress and alcohol metabolism of probiotics	Jiali Wang
19	14:30--14:45	Design, synthesis and optimization of efficient expression element in <i>Aspergillus niger</i>	Zhen Wei
20	14:45--15:00	Study on the probiotics protect against Fructooligosaccharides relative diarrhea	Kaiyang Chen
21	15:00--15:15	Determination of D, L-serine in rats by HPLC	Fuyue Liu
22	15:15--15:30	Tolcapone derivative (Tol-D) inhibits A β 42 fibrillogenesis, ameliorates A β 42 aggregate-induced cytotoxicity and cognitive impairment	Beibei Chen
23	15:30--15:45	Identification and analysis of temperature sensitive promoters of <i>Lactobacillus plantarum</i>	Chenghui Zhou
24	15:45--16:00	Effect of salvage synthesis pathway on oxidative stress in colon cancer cells	Xinyi Liu

VII Registration

- ✧ Registration entrance: the conference is supported online by AEIC academic center support, please scan the AEIC registration QR code.



- ✧ Fee: Free for online conferences.

VIII Contact Information

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The 5th International Conference on Applied Biotechnology & EB 1.0: The First International Conference on Engineering Biology
Organizing Committee



第五届应用生物技术国际会议暨工程生物学 1.0 国际会议

(The 5th International Conference on Applied Biotechnology & EB 1.0: The First International Conference on Engineering Biology)

第二轮通知

2020 年 12 月 4-5 日，天津，中国

<http://www.icab2020.org/>

应用生物技术国际会议 (The International Conference on Applied Biotechnology) 已于 2012 年、2014 年、2016 年及 2018 年成功举办四届，来自中国、美国、英国、德国、日本等国家和地区的 600 余位专家学者参会，150 余位知名科学家分别在大会上做了精彩的学术报告，为我国乃至世界应用生物技术领域科技合作和健康发展起到很好的推动作用。

工程生物学 (Engineering Biology) 是指采用工程化原理，模拟或重新设计基因、分子与细胞，开发新的产品、过程和系统，将为化工材料、医药健康、农业食品、可持续能源、生态环境等领域带来颠覆性影响，正在促进新一代生物技术发展，引领产业技术变革方向，催生生物经济时代到来。

为满足应用生物技术领域发展的迫切需要、推动工程生物学快速发展和学术交流，第五届应用生物技术国际会议暨工程生物学 1.0 国际会议将于 2020 年 12 月 4-5 日在天津召开。会议将邀请知名专家学者和企业家分享工程生物学领域最新科研进展和产业发展动态，为国内外相关高校、科研机构的专家、学者及企业人员提供高水平交流平台，促进产学研合作和成果转化，推动我国生物技术和产业高质量发展。

一、会议主办、承办单位

主办单位：中国生物工程学会

天津科技大学

中国科学院天津工业生物技术研究所

承办单位：工业发酵微生物教育部/天津市重点实验室

工业酶国家工程实验室

中国科学院系统微生物工程重点实验室

食品营养与安全和药物化学国际科技合作基地

代谢控制发酵技术国家地方联合工程实验室

天津市微生物代谢与发酵过程控制技术工程中心

天津市微生物学会

天津科技大学生物工程学院

天津市工业生物系统与过程工程重点实验室

天津市生物催化技术工程中心

赞助单位：康希诺生物股份公司

贝克曼库尔特商贸（中国）有限公司

二、会议时间

会议时间：2020 年 12 月 4-5 日



三、会议主要议题




- 生物数据科学与工程
- 基因合成与组装工程
- 生物分子与细胞工程
- 智能生物过程工程

四、会议形式

- 线上会议

五、会议日程

时间		日程安排		直播通道
12 月 4 日	上午	大会开幕 大会主旨报告		
	下午	平行会场	生物分子与细胞工程主题报告	

12 月 4 日			生物数据科学与工程主题报告	
12 月 5 日	上午	平行会场	智能生物过程工程主题报告	
			基因合成与组装工程主题报告	

六、大会报告安排

日期	时间（北京）	报告题目	报告人	单位
12月4日	09:00--09:30	开幕式		
	09:30--10:00	Synthetic Biology Twenty Years On	Huimin Zhao 教授	美国伊利诺伊大学 香槟分校
	10:00--10:30	Synthetic Ppyruvate-responsive Genetic Circuits for Dynamically Fine-Tuning Metabolic Pathways in <i>Bacillus subtilis</i>	堵国成 教授	江南大学
	10:30--10:40	茶歇		
	10:40--11:10	Engineering <i>Rhodococcus ruber</i> as an Efficient Whole-cell Biocatalyst for Biomanufacturing Industry	于慧敏 教授	清华大学
	11:10--11:40	Engineering Bi-directional Microbial Electron Pathways for Energy and Chemicals Production	宋浩 教授	天津大学
	生物分子与细胞工程主题报告			
	13:30--14:00	Molecular therapeutic targets and industrial application of fatty liver disease	李于 研究员	中国科学院院上海 营养与健康研究所
	14:00--14:30	Enzyme catalyst engineering	戈钧 副教授	清华大学
	14:30--15:00	Design principles of bacterial signal transduction network	高贝乐 研究员	中国科学院南海海 洋研究所
	15:00--15:15	Beckman workstation synthetic biology solutions	张子剑 高级工程师	贝克曼库尔特商贸 （中国）有限公司
	15:15--15:25	茶歇		
	15:25--15:55	Structural base and biosynthesis of hydroxyl amino acids	秦慧民 教授	天津科技大学

12月4日	15:55--16:25	How to recombine beneficial substitutions? Lessons learned from CompassR analysis of a lipase	Ulrich Schwaneberg 教授	德国亚琛工业大学
	16:25--16:55	Reprogramming cellular metabolism enhances yeast's fitness on xylose	陈云 副教授	瑞典查尔姆斯理工大学
	生物数据科学与工程主题报告			
	13:30--14:00	Some (surprisingly) simple hacks to get more out of your data	Wilson Wen Bin Goh 教授	新加坡南洋理工大学
	14:00--14:30	WDCM: Global Data Cooperation on Microbial Resources	马俊才 研究员	中国科学院微生物研究所
	14:30--15:00	Data-driven de novo design of protein structure and sequence	刘海燕 教授	中国科学技术大学
	15:00--15:10	茶歇		
	15:10--15:40	Modeling enzymatic enantioselectivity using quantum chemical methodology	盛翔 研究员	瑞典斯德哥尔摩大学
	15:40--16:10	Integration of various bio-data in metabolic network model analysis	马红武 研究员	中国科学院天津工业生物技术研究所
	16:10--16:40	High quality analysis of metagenomes	Igor Goryanin 教授	英国爱丁堡大学
12月5日	智能生物过程工程主题报告			
	8:30--9:00	Construction of synthetic microbial consortium for biorefinery	姜岷 教授	南京工业大学
	9:00--9:30	Engineering methyltrophic yeasts for overproduction of fatty acids	周雍进 研究员	中国科学院大连化学物理研究所
	9:30--10:00	Engineering yeast stress tolerance for efficient biorefinery: zinc responsive genes play an important role	赵心清 教授	上海交通大学

12月5日	10:00--10:10	茶歇		
	10:10--10:40	Bioconversion of methane for the production of bio-based chemical and fuel by methanotrophs	费强教授	西安交通大学
	10:40--11:10	Bioprocess optimization, scaling up techniques and perspective on future intelligent biomanufacturing	夏建业副教授	华东理工大学
	11:10--11:40	Microbial biosensing based on CRISPR-Cas system	马龙教授	天津科技大学
	基因合成与组装工程主题报告			
	8:30--9:00	Mining and engineering of microbial secondary metabolite pathways	张友明教授	山东大学
	9:00--9:30	Decode and reprogram a genome	戴俊彪研究员	中国科学院深圳先进技术研究院
	9:30--10:00	Metagenomics facilitates the development of biotechnology	陈林兴博士	美国加州大学伯克利分校
	10:00--10:10	茶歇		
	10:10--10:40	The application of next-generation sequencing techniques in synthetic biology	陈业研发总监	苏州金唯智生物科技有限公司
	10:40--11:10	The glycosylase base editor (GBE) approach enables specific C-to-A and C-to-G genomic conversion	毕昌昊研究员	中国科学院天津工业生物技术研究所
	11:10--11:40	Gene synthesis and cloning	孟庆伟资深科学家	南京金斯瑞生物科技有限公司

“未来之星”硕博论坛（天津科技大学）

日期：12 月 5 日

地点：泰达校区中院 2 号楼 206 会议室

序号	时间（北京）	报告题目	报告人
1	08:30--8:45	Overview of research on metabolic mechanism of higher alcohols	王欢
2	8:45--9:00	Three-dimensional ordered magnetic macroporous metal organic frameworks as a platform enzyme immobilization	冯玉晓
3	9:00--9:15	Preparation of superhydrophobic membrane based on bacterial cellulose for oil-water separation	王凤萍
4	9:15--9:30	Study on the autolysis mechanism of <i>Bacillus amyloidotica</i> and its allogenic protein expression	张金方
5	9:30--9:45	Construction and application of <i>Aspergillus niger</i> engineered strain with high yield of itaconic acid	王亚奇
6	9:45--10:00	WINE YEAST	李蕊蕊
7	10:00--10:15	Optimization of fermentation process for L-leucine production by <i>C. glutamicum</i>	张玉富
8	10:15--10:30	Research progress of agilawood: China's precious medicinal materials and spices	刘静
9	10:30--10:45	Predication of the novel protein from de novo transcriptome assembly	王舸楠
10	10:45--11:00	Genes of <i>Grifola frondosa</i> related to polysaccharide synthesis and its effect on polysaccharide yield	李健
11	11:00--11:15	Structural characterization, physiological activity and synthetic mechanism of extracellular polysaccharides from a strain of <i>Aureobasidium pullulans</i>	廖钰婷
12	11:15--11:30	Research progress on silicone in diatom cell wall	陈卓
13	11:30-11:45	Growth and development in <i>Aspergillus spp</i>	李洁
14	11:45--12:00	Functional characteristics and research progress of melanoidins	王知松
茶歇			

15	13:30--13:45	Gradient regulation of acetate ester production in <i>Saccharomyces cerevisiae</i> during Chinese Baijiu fermentation	崔丹瑶
16	13:45--14:00	Remove monosaccharide by <i>Komagataeibacter xylinus</i> and its effects on antioxidant capacity and flavor profile of Chinese wolfberry juice	张天震
17	14:00--14:15	Genetic marker technology short tandem repeats (STR)	秦旭颖
18	14:15--14:30	Study on the functional mechanism of anti-alcohol stress and alcohol metabolism of probiotics	王佳丽
19	14:30--14:45	Design, synthesis and optimization of efficient expression element in <i>Aspergillus niger</i>	魏镇
20	14:45--15:00	Study on the probiotics protect against Fructooligosaccharides relative diarrhea	陈开阳
21	15:00--15:15	Determination of D, L-serine in rats by HPLC	刘富锐
22	15:15--15:30	Tolcapone derivative (Tol-D) inhibits A β 42 fibrillogenesis, ameliorates A β 42 aggregate-induced cytotoxicity and cognitive impairment	陈贝贝
23	15:30--15:45	Identification and analysis of temperature sensitive promoters of <i>Lactobacillus plantarum</i>	周成慧
24	15:45--16:00	Effect of salvage synthesis pathway on oxidative stress in colon cancer cells	刘心怡

七、报名注意事项

1. 报名入口：会议由艾思学术支持在线报名，扫码艾思报名系统。



2. 本次会议不收取会议费，欢迎大家在线交流学习。

八、会务组联系方式

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