The University of Tokyo & Tsinghua University PhD-Students' Online Workshop on Health Biotechnology and Engineering

December 9th, 2022

15:00 - 18:00 (JST), 14:00 - 17:00 (CST)

Zoom meeting link: https://u-tokyo-ac-jp.zoom.us/j/87063267546 Meeting ID: 870 6326 7546 Passcode: 767929

15:00-15:05 JST, 14:00-14:05 CST

1. Opening remarks

Professor Yasuyuki Sakai^{1,2}

Department of Chemical System Engineering, School of Engineering, The University of Tokyo
Department of Bioengineering, School of Engineering, The University of Tokyo

15:05-15:25 JST, 14:05-14:25 CST

2. Introduction of the University of Tokyo and Tsinghua University

(8 minutes presentation + 2 minutes Q&A, total 10 minutes)

Ran Konoe Master student from The University of Tokyo

Edgar A. Galan Ph.D. student from Tsinghua University

15:25-17:25 JST, 14:25-16:25 CST

3. Presentations by Ph.D. students (8 minutes presentation + 4 minutes Q&A, total 12 minutes)

15:25-16:13 JST, 14:25-15:13 CST

Session 1

Chair: Assoc. Professor Yukiko Matsunaga (The University of Tokyo) Chair: Professor Runming Wang (Tsinghua University)

Construction of probiotic oral delivery system and its application in the treatment of ulcerative colitis

Junyu Liu¹, Huanxian Yang², Yong Qian^{2,*}, Canyang Zhang^{1,*}

- 1. Institute of Biopharmaceutical and Health Engineering, Tsinghua Shenzhen International Graduate School, Shenzhen, China.
- 2. School of Chemistry and Chemical Engineering, State Key Laboratory of Pulp and Paper Engineering, South China University of Technology, Guangzhou, China

Homogenization preparation and application of small intestinal organoids in microspheres derived from hiPSC

Yifan Xing^{1,2}, Yi Wang^{1,2}, Chong Zhang^{1,2}, Xinhui Xing^{3,4,*}

- 1. Department of Chemical Engineering, Tsinghua University, Beijing, China
- 2. Key Laboratory of Industrial Biocatalysis, Ministry of Education of China, Tsinghua University, Beijing, China
- 3. Institute of Biopharmaceutical and Health Engineering, Tsinghua Shenzhen International Graduate School, Shenzhen, China
- 4. Institute of Biomedical Health Technology and Engineering, Shenzhen Bay Laboratory, Shenzhen, China

Biomimetic oxygen delivery strategy based on porous hyperbranched dressings for scarfree wound healing

<u>Pengxu Wang</u>¹, Xinhui Xing^{1,2}, Hongliang Dai³, Xingang Wang³, Xiaorui Li³, Qianyun Lu³, Hongfeng Zhou¹, Jiayi Hu¹, Mengyao Song¹, Yanming Zhao¹, Canyang Zhang^{1,*}, Hongya Geng^{1,4,5,*}

- 1. Institute of Biopharmaceutical and Health Engineering, Tsinghua Shenzhen International Graduate School, Shenzhen, China.
- Key Laboratory for Industrial Biocatalysis, Ministry of Education, Institute of Biochemical Engineering, Department of Chemical Engineering, China Center for Synthetic and Systems Biology, Tsinghua University, Beijing, China
- 3. School of Environmental and Chemical Engineering, Jiangsu University of Science and Technology, Zhenjiang, China
- 4. Department of Materials, Department of Bioengineering, and Institute of Biomedical Engineering, Imperial College London, London SW7 2AZ, U.K.
- 5. Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm 17177, Sweden

Manufacturing of Oxygen Generation Scaffold for 3D High-density Cell Culture

Pei Zihan¹, Namiki Ayaka¹, Kida Akira¹, Kevin Montagne¹, Ushida Takashi², Furukawa Katsuko^{1, 2}

- 1. Department of Bioengineering, Graduate School of Engineering, The University of Tokyo
- 2. Department of Mechanical Engineering, Graduate School of Engineering, The University of Tokyo

16:13-16:25 JST, 15:13-15:25 CST Break time

16:25-17:25 JST, 15:25-16:25 CST

Session 2

Chair: Professor Masaki Sekino (The University of Tokyo) Chair: Professor Sanyang Han (Tsinghua University)

Development of a hands-free electrolarynx for obtaining a human-like voice using Linear Predictive Coding (LPC) residual wave

Masaki Takeuchi¹, Yutaro Soejima¹, Masaki Sekino²

- 1. Department of Electrical Engineering and Information Systems, Graduate School of Engineering, The University of Tokyo
- 2. Department of Bioengineering, Graduate School of Engineering, The University of Tokyo

Targeting TFF3 inhibits YAP-regulated anti-apoptosis in first-generation EGFR TKIresistant lung adenocarcinoma

<u>Shuwei Zhang</u>¹, Yan Qin Tan^{1,2}, Xiaoming Huang¹, Hui Guo¹, Xi Zhang³, Vijay Pandey^{1,2,*} and Peter E. Lobie^{1,2,3,*}

- 1. Tsinghua Berkeley Shenzhen Institute, Tsinghua Shenzhen International Graduate School, Tsinghua University, Shenzhen, China
- 2. Institute of Biopharmaceutical and Health Engineering, Tsinghua Shenzhen International Graduate School, Shenzhen, China
- 3. Shenzhen Bay Laboratory, Shenzhen, China

An IL-12-based nanocytokine safely potentiates anticancer immunity through spatiotemporal control of inflammation to eradicate advanced cold tumors

Pengwen Chen¹, Koji Nagaoka², Takuya Miyazaki³, Kazuhiro Kakimi², Kazunori Kataoka⁴, Horacio Cabral¹

- 1. Department of Bioengineering, Graduate School of Engineering, The University of Tokyo
- 2. Department of Immunotherapeutics, The University of Tokyo Hospital
- 3. Kanagawa Institute of Industrial Science and Technology
- 4. Innovation Center of NanoMedicine (iCONM), Kawasaki Institute of Industrial Promotion

Depth Estimation with Stereoscopic Imaging System Using a Monocular Endoscope and a Prism

Xueling Wei¹, Fan Mao¹, Tianqi Huang¹, Hongen Liao^{1,*}

1. Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China

High performance electrochemical electrode for continuous glucose sensing in interstitial fluid

Shicheng Zhou¹, Takehiro Sato¹, Madoka Takai¹

1. Department of Bioengineering, The University of Tokyo, Tokyo, Japan

17:25-17:30 JST, 16:25-16:30 CST

4. Closing Remarks

Professor Xinhui Xing^{1,2}

- 1. Institute of Biopharmaceutical and Health Engineering, Shenzhen International Graduate School, Tsinghua University
- 2. Department of Chemical Engineering, Tsinghua University

17:30-18:00 JST, 16:30-17:00 CST

5. Faculty meeting on the joint education program