

Technical Program

March 29, 2024

13:30-13:50 Open Ceremony
(银杏厅 Ginkgo Hall)
Chair: Wei Sun

13:50-14:10 Group Photo

14:10-16:10 Plenary Presentations 1
(银杏厅 Ginkgo Hall)
Chair: Wei Sun

- 14:10-14:50 Plenary Presentation 1-1**
Preservation of Cellular Bioproducts; Zhanfeng Cui, Oxford University, UK
- 14:50-15:30 Plenary Presentation 1-2**
Migrasome, from Basic Biology to Therapeutic Potential; Li Yu, Tsinghua University, China
- 15:30-16:10 Plenary Presentation 1-3**
Three-dimensional Bioprinted Hepatorganoids & 3D Bioprinting Primary Liver Cancer for Precision Medicine; Yilei Mao, Peking Union Medical College Hospital, China

16:10-16:30 Tea Break/Poster/Exhibition

Session 01
16:30-18:00
SAM01-1 – New Process, Technology and Equipment of Additive Manufacturing
(March 29, 5 号楼金缘厅 Jin Yuan, Building 5)
Co-Chair: David L. Bourell & Shoufeng Yang

- 16:30-16:50 Invited**
SAM01-I01-Mechanical Property Reliability for Polyamide Processed using Powder Bed Fusion; David L. Bourell, University of Texas at Austin, USA
- 16:50-17:10 Invited**
SAM01-I02- From Music to Sand Painting-the Next Generation of Powder Bed-based Additive Manufacturing: Multi-Materials; Shoufeng Yang, Harbin Engineering University, China
- 17:10-17:25 SAM01-O01- Liquid Metal Sssisted Laser Powder Bed Fusion (LMS-LPBF) Technique: Altering the Residual Stress and the Materials' Property;** Xiaoyu Liang, Tsinghua University, China
- 17:25-17:40 SAM01-O02-156- Laser Powder Bed Fusion under Static Magnetic Field;** Guochen Peng, National University of Singapore, Singapore

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17:40-17:55 SAM01-O03-190- **Refining the Microstructure of Al-Si Alloy using Electron Beam Melting Additive Manufacturing**; Huakang Bian, Shanghai University, China

Session 02
16:30-18:00
SBM01-1: Biomanufacturing, Biomaterials and Tissue Engineering
(March 29, 第五会议室 No.5 Meeting Room)
Co-Chair: Yin Xiao & Chengtie Wu

16:30-16:50 **Invited**
SBM01-I01-**Bio-functional Properties of Bone Bio-ink Containing Bone Particles**;
Yin Xiao, Griffith University, Australia

16:50-17:10 **Invited**
SBM01-I02-**3D Printing of Biomimetic Biomaterials**; Chengtie Wu, Shanghai Institute
of Ceramics, Chinese Academy of Sciences, China

17:10-17:30 **Invited**
SBM01-I03-**3D Printing of Multi-scale Bionic Scaffold and Application in Regeneration
for Cartilage/Subchondral Bone**; Shengmin Zhang, Huazhong University of Science
and Technology, China

17:30-17:50 **Invited**
SBM01-I04: **Research and Application of Bio-inks Based on Structural Response of
Natural Polysaccharides**, Ji Zhang, Northwestern Normal University, China

17:50-18:05 SBM01-O-123-**Electrohydrodynamic Printing of Micro/nanofibrous Conductive
Cardiac Scaffolds and Their Functions**; Qi Lei, Taiyuan University of Technology,
China

Session 03
16:30-18:00
SBM04-1: Biomanufacturing for Medical Devices and Clinical Applications
(March 29, 第八会议室 No.8 Meeting Room)
Co-Chair: Qian Yang & Xiaoying Huang

16:30-16:50 **Invited**
SBM04-I01-**Exploring Serum Neuron-Derived Exosomes for Early PD Diagnosis
& Therapeutic Strategies**; Qian Yang, The Second Affiliated Hospital of the Air Force
Medical University, China

16:50-17:10 **Invited**
SBM04-I02- **Engineered Exosomes Derived from Mesenchymal Stem Cells for
Targeted Therapy of Pulmonary Arterial Hypertension**; Xiaoying Huang, The First Affiliated
Hospital of Wenzhou Medical University, China

17:10-17:30 **Invited**
SBM04-I03- **Development of Alternative Products for Corneas**; Liqiang Wang, Chinese
PLA General Hospital, China

- 17:30-17:50 **Invited**
 SBM04-I04-**3D Bioprinting: from Organ Models to Tissues Repair**; Yong He, Zhejiang University, China

Session 04
16:30-18:00
SBM05-1: 3D Cell Printing: Novel Bioinks, Process, Technology, and Equipment
 (March 29, 第六会议室 No.6 Meeting Room)
Co-Chair: Daniel Chen & Jiang Chang

- 16:30-16:50 **Invited**
 SBM05-I01-**Bioinks and Extrusion Bioprinting Scaffolds for Tissue Engineering**; Daniel Chen, University of Saskatchewan, Canada
- 16:50-17:10 **Invited**
 SBM05-I02- **3D-printed Bioactive Composite Hydrogel Scaffold for Vascularized Adipose Tissue Restoration**; Jiang Chang, Shanghai Institute of Silicate, Chinese Academy of Sciences, China
- 17:10-17:30 **Invited**
 SBM05-I03-**Continuous DLP Printing of Multiply Cells using Yield Stress Fluid Bioink**; Jun Yin, Zhejiang University, Australia
- 17:30-17:50 **Invited**
 SBM05-I04-**3D Printed Bioresorbable Elastic Triboelectric Nanogenerator Induces Efficient Electrotherapy for Tissue Regeneration Tissue Regeneration**; Zhengwei You, Donghua University, China

Session 05
16:30-18:00
SBM08-1: Bionic Design, Modeling, Simulation and Biomechanics in Biofabrication
 (March 29, 中北厅 Zhong Bei)
Co-Chair: Feng Xu & Huawei Chen

- 16:30-16:50 **Invited**
 SBM08-I01-**Interdisciplinary Collaboration of Science, Engineering, and Medicine: From Biomechanics and Mechanobiology to Mechanopathology and Mechanomedicine**; Feng Xu, Xi'an Jiaotong University, China
- 16:50-17:10 **Invited**
 SBM08-I02-**Micro-nano Hierarchical Bioinspired Bio-interface**; Huawei Chen, Beihang University, China
- 17:10-17:30 **Invited**
 SBM08-I03-**Machine Learning Based Design for Biomanufacturing of Reconstructive Tissue Prosthesis**; Qing Li, University of Sydney, China
- 17:30-17:45 SBM08-O01-168-**Bio-manufacturing of a Micro/Nano-structured TiO₂ Surface with Dual-functional Antibacterial Effects**; Xiang Ge, Tianjin University, China
- 17:45-18:00 SBM08-O02-132-**Design, Manufacturing and Modeling of Miniaturized Pneumatic Soft Robotic Arms for Surgical Precision**; Yao Chen, Tsinghua University, China

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Session 06 16:30-18:00
SBM09-1: Biomanufacturing for Orthopedics Application – Bone
(March 29, 第一会议室 No.1 Meeting Room)
Co-Chair: Ling Qin & Jincheng Wang

- 16:30-16:50 **Invited**
SBM09-I01-**Magnesium as Essential Life Element in Bone and Its Skeletal Applications**; Ling Qin, Chinese University of Hong Kong, China
- 16:50-17:10 **Invited**
SBM09-I02-**Basic Research and Clinical Application of 3D Printed Titanium Alloy Implants in Repairing Bone Defects**; Jincheng Wang, Second Hospital of Jilin University, China
- 17:10-17:30 **Invited**
SBM09-I03-**The Efficacy and Safety of BioReBone® as a Novel Bone Substitute using the Tooth-extraction-socket-healing Model in a Clinical Trial**; Yuelian Liu, Academisch Centrum Tandheelkunde Amsterdam, Netherlands
- 17:30-17:50 **Invited**
SBM09-I04-**Borosilicate Glass(BSG) Sequentially Modulates Immunity, Angiogenesis, and Osteogenesis to Facilitate Critical Bone Defect Repair**; Haobo Pan, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

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8:30-10:30 Plenary Presentations 2
(银杏厅 Ginkgo Hall)
Chair: Shengli Mi

- 8:30-9:10 **Plenary Presentation 2-1**
Development of Support Technologies that Enhance Clinical Translation; James J. Yoo, MD, the Wake Forest Institute for Regenerative Medicine (WFIRM), USA
- 9:10-9:50 **Plenary Presentation 2-2**
The Exploration on the Low Stress, Low Roughness, and Low Cost Powder Bed Fusion Additive Manufacturing Technology; Feng Lin, Tsinghua University, China
- 9:50-10:30 **Plenary Presentation 2-3**
Finding Bacteria: The Bad, The Good, and The Better; Minjun Kim, Southern Methodist University, USA

10:30-10:50 Tea Break/Poster/Exhibition

Session 07 **10:50-12:20**
SAM 02-1 Design, Modeling and Simulation in Additive Manufacturing
(March 30, 西园 Xi Yuan, 1st floor of Building 1)
Co-Chair: David Rosen & Yonghua Chen

- 10:50-11:10 **Invited**
SAM02-I01- **Design for Additive Manufacturing**; David Rosen, A*STAR, Singapore;
GTech, USA
- 11:10-11:30 **Invited**
SAM02-I02-**3D Printing for Soft Robotic Grippers: Challenges and Opportunities**;
Yonghua Chen, The University of Hong Kong, China
- 11:30-11:50 **Invited**
SAM02-I03-**High-fidelity Modeling of Multi-material Additive Manufacturing:
From Micro-/Nano-particle Reinforced Composites to In-situ Alloying**; Wentao Yan,
National University of Singapore, Singapore
- 11:50-12:05 SAM02-O01-**Microscale Pattern Liquid Metal Nanoink by Aerosol Jet Printing**;
Benyan Xu, Tsinghua University, China
- 12:05-12:20 SAM02-O02 - **Achieving Injection Molding Interlayer Strength via Powder Assisted
Hot Isostatic Pressing in Material Extrusion Polyetheretherketone**; Weidong Wu,
Huazhong University of Science and Technology, China

Session 08 **10:50-12:20**
SBM01-2: Biomanufacturing, Biomaterials and Tissue Engineering
(March 30, 第五会议室 No.5 Meeting Room)
Co-Chair: Jian Yang & Zhuo Xiong

- 10:50-11:10 **Invited**
SBM01-I05- **Metabotissugenic Citrate Biomaterials for Regenerative Engineering**;
Jian Yang, Westlake University, China
- 11:10-11:30 **Invited**
SBM01-I06-**Satellite-Based On-Orbit Printing of 3D Tumor Models**; Zhuo Xiong,
Tsinghua University, China
- 11:30-11:50 **Invited**
SBM01-I07- **Artificial vs God-made: Dermal Scaffold for Wound Healing**; Jun Wu,
the First Affiliated Hospital, Shenzhen University, China
- 11:50-12:05 SBM01-O01-**Engineering Complex Organs with Biomimetic Vessel-neural Networks
by the Sequential Printing in Reversible Ink Template (SPIRIT) Strategy**; Yongcong
Fang, Tsinghua University, China
- 12:05-12:20 SBM01-O02-99-**Biofabrication with Structural Mimicry and Functionalization for
Regeneration of Soft Tissues**; Yang Wu, Harbin Institute of Technology (Shenzhen),
China

Session 09 **10:50-12:20**
SBM04-2: Biomanufacturing for Medical Devices and Clinical Applications
(March 30, 第八会议室 No.8 Meeting Room)
Co-Chair: Bo Zhang & Ximu Zhang

- 10:50-11:10 **Invited**
SBM04-I05-**Combination of Medicine with Engineering in Intelligent Manufacturing at TangDu Hospital Urology**; Bo Zhang, The Second Affiliated Hospital of the Air Force Medical University, China
- 11:10-11:30 **Invited**
SBM04-I06-**Development and Application of Regenerative Materials Adapted to Extreme Periodontal Environments**; Ximu Zhang, Chongqing Medical University, China
- 11:30-11:50 **Invited**
SBM04-I07 **Research and Development of Perinatal Mesenchymal Stem Cells**; Jialun Wang, SINO GREATARC GROUP, China
- 11:50-12:05 SBM04-O01-159-**3D Dioprinted Dermis Loaded with Confining Forces Promotes Full-thickness Wound Healing by Enhancing Vascularisation and Epithelialisation**; Guangliang Zhang, Dermatology Hospital affiliated to Shandong First Medical University, China
- 12:05-12:20 SBM04-O02-69-**Hybrid Fibre Printing of Tissue Engineering Scaffolds and Bioelectronic Sensors**; Wenyu Wang, Hong Kong University of Science and Technology (Guangzhou), China

Session 10 **10:50-12:20**
SBM05-2: 3D Cell Printing: Novel Bioinks, Process, Technology, and Equipment
(March 30, 第六会议室 No.6 Meeting Room)
Co-Chair: Swee Leong Sing & James Armstrong

- 10:50-11:10 **Invited**
SBM05-I05- **Complex Structures Enabled by Additive Manufacturing for Biomedical Applications**; Swee Leong Sing, National University of Singapore, Singapore
- 11:10-11:30 **Invited**
SBM05-I06-**Ultrasound-based Biofabrication**; James Armstrong, University of Bristol, UK
- 11:30-11:45 SBM05-O01-134-**Alternating Viscous and Inertial Force Jetting for Patterning and Examining Astrocytes in Low Cell Density Culture**; Ao Li, Tsinghua University, China
- 11:45-12:00 SBM05-O02-**Study on Dual-responsive Composite Hydrogels Based on Oriented Nanocellulose**; Lina Dong, Tsinghua Shenzhen International Graduate School, China
- 12:00-12:15 SBM05-O03-181-**Design and Study of Spiral Milling Cavity Preparation Process based on Oral Implant Robots**; Chaofan Li, Zhejiang University of Technology, China

Session 11 **10:50-12:20**
SBM07-1: Biomanufacturing with Stem Cells, Organoids and Organ-on-chips:
(March 30, 银杏厅 Ginkgo hall)
Co-Chair: Jianhua Qin & Wen Zeng

- 10:50-11:10 **Invited**
 SBM07-I01-**Organs on Chips to Advance Biomedical Research**; Jianhua Qin, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China
- 11:10-11:30 **Invited**
 SBM07-I02-**Construction and Application of Bioartificial Organs using in vitro Expanded Primary Cells**; Pengyu Huang, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences & Peking Union Medical College, China
- 11:30-11:50 **Invited**
 SBM07-I03-**Stem Cells and the Regeneration of Tissue Engineered Blood Vessels**; Wen Zeng, Army Medical University, China
- 11:50-12:10 **Invited**
 SBM07-I04 **3D Model of Ovarian Cancer Progression to Recapitulate Cancer Stem Cell Niche and Chemoresistance for Anti-cancer Drug Discovery**; Sik Yoon, Pusan National University, Korea
- 12:10-12:25 SBM07-O01-133-A **Microfluidic Method for Evaluating Interactions Between Orthopedic Biomaterials and Cells**; Lingkai Jiang, Tsinghua University, China

Session 12 **10:50-12:20**
SBM08-2: Bionic Design, Modeling, Simulation and Biomechanics in Biofabrication
(March 30, 中北厅 Zhong Bei)
Co-Chair: Lin Feng & Khoon Lim

- 10:50-11:10 **Invited**
 SBM08-I04-**Optical Tweezers Micromanipulation and Magnetically Controlled Micro- and Nanorobotics**; Lin Feng, Beihang University, China
- 11:10-11:30 **Invited**
 SBM08-I05-**Spatio-temporal Presentation of Physical and Biological Cues in Biofabricated Constructs**; Khoon Lim, University of Sydney, Australia
- 11:30-11:50 **Invited**
 SBM08-I06-**Automatic Designing Framework of Orbital Patient-Specific Implants via 2.5-Dimensional Autoencoder Based on Depth Feature Maps**; Yi Sun, University Hospital Leuven, Belgium
- 11:50-12:05 SBM08-O03-25-**Biomanufacturing of Bacteriorhodopsin-embedded Hydrogel Construct for Biocompatible Photosensitive Device**; Mian Wu, Tsinghua University, China
- 12:05-12:20 SBM08-O04-131-**Micron-scale 3D Printed Paraffin Wax-based Phase Change Material Bionic Soft Robots**; Zilong Peng, Qingdao University of Technology, China

Session 13
10:50-12:20
SBM09-2: Biomanufacturing for Orthopedics Application – Bone
(March 30, 第一会议室 No.1 Meeting Room)
Co-Chair: Xin Zhao & Kai Zheng

- 10:50-11:10 **Invited**
SBM09-I05-Triply Periodic Minimal Surface Scaffolds for Enhanced Bone Regeneration; Xin Zhao, The Hong Kong Polytechnic University, China
- 11:10-11:30 **Invited**
SBM09-I06-3D Printing of Bioactive Glass-containing Composites for Bone Repair; Kai Zheng, Nanjing Medical University, China
- 11:30-11:50 **Invited**
SBM09-I07-3D Printed Biomimetic Scaffold for Integrative Osteochondral Regeneration; Di Wu, The Sixth Affiliated Hospital of Shanghai Jiao Tong University, China
- 11:50-12:05 SBM09-O01-75-Alveolar Bone Repair of Rhesus Monkeys by using BMP-2 Gene and Mesenchymal Stem Cells Loaded Three-dimensional Printed Bioglass Scaffold; Weikang Xu, Institute of Biological and Medical Engineering, Guangdong Academy of Sciences, China
- 12:05-12:20 SBM09-O02-71-Research and Development of Bioactive Interface of Artificial Joint Prosthesis with Osteoporosis Microenvironment Regulation Function; He Liu, Second Hospital of Jilin University, China

Session 14
10:50-12:20
SBM11-1: AM and BM for industry and clinical application
(March 30, 第二会议室 No.2 Meeting Room)
Co-Chair: Xiang Dong & Tao Xu

- 10:50-11:10 **Invited**
SBM11-I01-Naton's Additive Manufacturing Journey: Innovations in Medical Products & Materials Research; Xiang Dong, Naton, China
- 11:10-11:30 **Invited**
SBM11-I02-Exploration and Industrialization Practice of Bio 3D Printing Technology for Clinical Application; Tao Xu, Research Institute of Tsinghua University in Shenzhen, China
- 11:30-11:45 SBM11-O01-The Functions and Applications of SUNP 3D Bioprinter; Lina Wang, Sunpbiotech, China
- 11:45-12:00 SBM11-O02-X-ray Industrial CT in Additive Manufacturing: Monitoring, Optimization and Quality Control; John Zou, Always Imaging Ltd., China
- 12:00-12:15 SBM11-O03- Rapid Bioprinting of Biomimetic Tissues in Multi-well Plates for Drug Screening and Disease Modeling; Wei Zhu, Celllink, USA

12:30-13:30 Lunch
(赏园 Shang Yuan、东园 Dong Yuan, Building 5)

13:30-15:30 Plenary Presentations 3
(银杏厅 Ginkgo hall)
Chair: Feng Lin

- 13:30-14:10 **Plenary Presentation 3-1**
Engineering Bioresponsive Drug Delivery Devices; Zhen Gu, Zhejiang University, China
- 14:10-14:50 **Plenary Presentation 3-2**
Bio-to-Bionic Manufacturing of Micro/Nano Structure and Function; Deyuan Zhang, Beihang University, China
- 14:50-15:30 **Plenary Presentation 3-3**
Harnessing Cell-instructive Microenvironments for Scalable Biofabrication of Functional Tissues; Tim Woodfield, University of Otago Christchurch, New Zealand

15:30-15:50 Tea Break/Poster/Exhibition

Session 15
15:50-18:15
SAM 03-1:AM with Metallic, Ceramics, Polymer and Composite Materials
(March 30, 西园 Xi Yuan, 1st floor of Building 1)
Co-Chair: Ke Yang & Akihiko Chiba

- 15:50-16:10 **Invited**
SAM03-I01- Additive Manufacture of Novel Cu-bearing Titanium Alloy with Unique Performance; Ke Yang, Institute of Metal Research, Chinese Academy of Sciences, China
- 16:10-16:30 **Invited**
SAM03-I02- Technical Challenges and Potential of Electron Beam Additive Manufacturing; Akihiko Chiba, Tohoku University, Japan
- 16:30-16:50 **Invited**
SAM03-I03-Enhancing the Precision of Metal Additive Manufacturing with Ultraprecision Machining Enhanced by Mechanochemical Effect; Hao Wang, National University of Singapore, Singapore
- 16:50-17:05 **SAM03-O01- Bionic Layered Ceramic-metal Composites: Integrating Tortoiseshell and Crysomallon Squamiferum Shell Structures for Enhanced Toughness and Damage Resistance;** Hailong Wu, Liaocheng University, China
- 17:05-17:20 **SAM03-O02-Electron Beam Powder Bed Fusion of Refractory Superalloy;** Yang Li, Tsinghua University, China
- 17:20-17:35 **SAM03-O03-88- Electrically/Magnetically Dual-Driven Shape-Memory Composites Fabricated by Multi-material Magnetic Field-assisted 4D Printing;** Tianyu Yu, Harbin Institute of Technology, China

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- 17:35-17:50 SAM03-O04-144-**Machinable and High-temperature strong Nb-silicide Intermetallic Composites by Electron Beam Powder Bed Fusion**; Bo Wei, Tsinghua University, China
- 17:50-18:10 SAM03-O05-248-**Research on Additive Manufacturing of High Performance Difficult-to-form Materials**; Wenzheng Wu, Jilin University, China

Session 16
15:50-18:15
SBM01-3: Biomanufacturing, Biomaterials and Tissue Engineering
 (March 30, 第五会议室 No.5 Meeting Room)
Co-Chair: Hongwei Ouyang & Jiankang He

- 15:50-16:10 **Invited**
 SBM01-I08-**Musculoskeletal Tissue Science and Tissue Engineering**; Hongwei Ouyang, Zhejiang University, China
- 16:10-16:30 **Invited**
 SBM01-I09-**Micro/Nanoscale Electrohydrodynamic Bioprinting to Regulate Cell/Tissue Growth**, Jiankang He, Xi'an Jiaotong University, China
- 16:30-16:50 **Invited**
 SBM01-I10- **Bioprinting Technology for Advanced Tissue Therapeutics**; Jinah Jang, POSTECH, Korea
- 16:50-17:10 **Invited**
 SBM01-I11-**Filamented Light Biofabrication for Tissue Engineering of Tendon and Muscle**; Marcy Zenobi-Wong, ETH, Switzerland
- 17:10-17:30 **Invited**
 SBM01-I12-**Low Immunogenic Decellularized Bioactive Materials**; Huaqiong Li, Wenzhou Institute, University of Chinese Academy of Sciences, China
- 17:30-17:45 SBM01-O03-**The Role of Energy Density in the Microstructure and Mechanical Biocompatibility Behavior for Ti35Nb15Zr (at. %) Alloy Fabricated by Laser Powder Bed Fusion**;Pengcheng Lv, Guangxi University, China

Session 17
15:50-18:15
SBM04-3: Biomanufacturing for Medical Devices and Clinical Applications
 (March 30, 第八会议室 No.8 Meeting Room)
Co-Chair: Cijun Shuai & Wei Wu

- 15:50-16:10 **Invited**
 SBM04-I08-**Additive Manufacturing Technology and Equipment for Regenerative Artificial Tissue**;Cijun Shuai, Central South University, China
- 16:10-16:30 **Invited**
 SBM04-I09-**Tissue Engineering Retina**; Wei Wu, 301 Hospital, China
- 16:30-16:50 **Invited**
 SBM04-I10-**Biological Photosensitive Memory Device based on Light-Activated Phase Separation of Live Cells**; Yu Song, Tsinghua University, China
- 16:50-17:10 **Invited**
 SBM04-I11- **3D Cultured Stem Cell Delivery System for the Treatment of Corneal Chemical Injury**; Yun Feng, Peking University Third Hospital, China

- 17:10-17:25 **SBM04-O03-51-Fabrication of Engineered Vasculature and Tissue Regeneration;** Shuai Li, The First Affiliated Hospital of Zhejiang University School of Medicine, China
- 17:25-17:40 **SBM04-O04-46-A Novel Suture-free Nephroplication with 3D-printed Bag for Giant Hydronephrosis;** Zhirong Luo, The Second Affiliated Hospital of the Air Force Medical University, China
- 17:40-17:55 **SBM04-O05-232-Thermostabilising Functional Proteins with Matrix Assisted Room Temperature Drying;** Yejiang Yu, University of Oxford, UK

Session 18
15:50-18:15
SBM05-3: 3D Cell Printing: Novel Bioinks, Process, Technology, and Equipment
 (March 30, 第六会议室 No.6 Meeting Room)
Co-Chair: Yasuyuki Sakai& Liliang Ouyang

- 15:50-16:10 **Invited**
 SBM05-I07- **Gas-Permeable Membrane-Based Direct Oxygenation Enables Cellular Aerobic Respiration in Microphysiological Systems;** Yasuyuki Sakai, University of Tokyo, Japan
- 16:10-16:30 **Invited**
 SBM05-I08- **Enabling Bioinks with Tunable Mechanical and Topological Cues for 3D Cell Culture and Vascularization;** Liliang Ouyang, Tsinghua University, China
- 16:30-16:50 **Invited**
 SBM05-I09- **Multiscale Biofabrication through 3D(bio)printing, Bioassembly, and Fibre-of-things;** Shery Huang, University of Cambridge, UK
- 16:50-17:10 **Invited**
 SBM05-I10-**Hyperdynamic Structural Hydrogel Regulates Mechanical Perception of 3D Cultured Stem Cells to Promote Tissue Regeneration;** Liming Bian, South China University of Technology, China
- 17:10-17:30 **Invited**
 SBM05-I11-**Fiber Scaffolds for Tissue Repair and Regeneration;** Jiajia Xue, Beijing University of Chemical Technology, China
- 17:30-17:50 **Invited**
 SBM05-I12- **Bionic Construction of Novel Functional Bacterial Cellulose Composites and the Application for Tissue Regeneration;** Yudong Zheng, University of Science and Technology Beijing, China

Session 19
15:50-18:15
SBM07-2: Biomanufacturing with Stem Cells, Organoids and Organ-on-chips
 (March 30, 银杏厅 Ginkgo hall)
Co-Chair: Will Shu & Bing Zhao

- 15:50-16:10 **Invited**
 SBM07-I05-**Biofabrication for Microvasculature and Bioartificial Blood Vessels;** Will Shu, University of Strathclyde, UK

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- 16:10-16:30 **Invited**
SBM07-I06-**Application of Human Organoids in Disease Modeling for Translational Medicine**; Bing Zhao, Nanchang University, China
- 16:30-16:50 **Invited**
SBM07-I07-**Bioreactor Derived Human Fetal Mesenchymal Stem Cell Secretome Promote Diabetic Skin Wound Healing**; Gang Li, The Chinese University of Hong Kong, China
- 16:50-17:10 **Invited**
SBM07-I08-**Assembly and Printing of Cell Spheroids to Construct Large-size and High-cell Density Bionic Tissues-organoids**; Kui Zhou, Nanchang University, China
- 17:10-17:30 **Invited**
SBM07-I09-**Bioprinting Metabolic and Neurovascularized Bone Organoid for Regenerative Repair**; Xiaolin Tu, Chongqing Medical University, China
- 17:30-17:50 **Invited**
SBM07-I10-**Construction and Application of Complex Skin Organoid**; Ling Leng, Peking Union Medical College Hospital, China
- 17:50-18:05 SBM07-O02-**Reprogrammable Magnetic Soft Actuators with Microfluidic Functional Modules Via Pixel-Assembly**; Hongyi Yao, Tsinghua University Shenzhen International Graduate School, China

Session 20 **15:50-18:15**
SBM08-3: Bionic Design, Modeling, Simulation and Biomechanics in Biofabrication
(March 30, 中北厅 Zhong Bei)
Co-Chair: U Kei Cheang & Shichao Niu

- 15:50-16:10 **Invited**
SBM08-I07-**Fabrication, Control, and Biomedical Applications of Magnetically Actuated Achiral Microswimmers**; U Kei Cheang, Southern University of Science and Technology, China
- 16:10-16:30 **Invited**
SBM08-I08-**Micro-and Nanoscale Template Manufacturing Technology for Bionic Functional Surfaces**; Shichao Niu, Jilin University, China
- 16:30-16:45 SBM08-O05-95-**Research Progress on the Design of Bone Scaffolds with Different Single Cell Structures**; Yadi Sun, Tianjin Hospital, China
- 16:45-17:00 SBM08-O06-82-**High-resolution 3D Printing of Gradient Aperture Annulus Fibrous Scaffolds for Intervertebral Disc Regeneration**; Zhao Liu, Suzhou Industrial Park Xinguo University Research Institute, China
- 17:00-17:15 SBM08-O07-45-**Biomechanical Design and Printing for Mandibular Implant with Novel Structures** Yunfeng Liu, School of Mechanical Engineering, Zhejiang University of Technology, China
- 17:15-17:30 SBM08-O08-36-**A Stretchable, Strain-limiting, and Mechanically Stable Bio-inspired Microfiber for Wearable Applications**; Hanif Adeela, Pohang University of Science and Technology (POSTECH), Korea

- 17:30-17:45 SBM08-O09-139-**3D-bioprinted Scaffolds for Osteochondral Regeneration in Osteoarthritis**; Xinluan Wang, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China
- 17:45-18:00 SBM08-O10-177-**Femtosecond Laser Structuring and In Vivo Evaluation of Hierarchical Platinum-Iridium Neural Electrodes**; Linze Li, Tsinghua University, China
- 18:00-18:15 SBM08-O11-194-**3D-printed Scaffold with Halloysite Nanotubes Laden as a Sequential drug delivery system regulates vascularized bone tissue healing**; Jingyuan Ji, Tsinghua University, China

Session 21 15:50-18:15
SBM09-3: Biomanufacturing for Orthopedics Application – Bone
 (March 30, 第一会议室 No.1 Meeting Room)
Co-Chair: Hong Li & Jie Weng

- 15:50-16:10 **Invited**
 SBM09-I08- **Construction of Biomimetic Bone Tissue Repair Materials based on 3D Printing** ; Hong Li, Jinan University, China
- 16:10-16:30 **Invited**
 SBM09-I09-**Construction of Pore Diversity in Tissue Engineering Scaffolds and Its Regulation of Bone Tissue Regeneration**; Jie Weng, Southwest Jiaotong University, China
- 16:30-16:50 **Invited**
 SBM09-I10-**Biofabrication of Multiple Biomaterials for Customized Bone Tissue Defect Repair**; Changchun Zhou, Sichuan University, China
- 16:50-17:10 **Invited**
 SBM09-I11-**Diagnosis and Regulation of Wound Inflammatory Microenvironment using ROS Responsive Nanomaterials**; Jun Deng, PLA Army Medical University (Third Military Medical University), China
- 17:10-17:30 **Invited**
 SBM09-I12-**3D Printed PLGA Scaffold with Nano-hydroxyapatite Carrying Linezolid for Treatment of Infected Bone Defects**; Alimu Krumu, Xinjiang Kashgar first People's Hospital, China
- 17:30-17:50 **Invited**
 SBM09-I13-**Multiple Cations Enriched in Bone Tissue Microenvironment can Induce Superior Bone Regeneration Mediated by the CNS-skeletal Circuit**; Kelvin Wai Kwok Yeung, University of Hong Kong, China
- 17:50-18:05 SBM09-O03-**Hierarchical Porous Ecm Scaffolds Incorporating Gdf-5 Fabricated By Cryogenic 3D Printing To Promote Articular Cartilage**; Liwei Fu, Institute of Orthopedics, Chinese PLA General Hospital, China

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Session 22 **15:50-18:15**
SBM11-2: AM and BM for industry and clinical application
(March 30, 第二会议室 No.2 Meeting Room)
Co-Chair: Xia Wang & Cai Lin

- 15:50-16:10 **Invited**
SBM11-I03-**Med+X Technology Transfer: Challenges and Advances**; Xia Wang, Institute for Precision Medicine, Tsinghua University, China
- 16:10-16:30 **Invited**
SBM11-I04-**Lycopene Attenuates Ischemic-hypoxic Injury in Random Skin Flaps via the Nrf2/HO-1 Signaling Pathway**; Cai Lin, The First Affiliated Hospital of Wenzhou Medical University, China
- 16:30-16:50 **Invited**
SBM11-I05-**The Development of 3D Printing in Medical Science**; Jiahe Liang, The Second Affiliated Hospital of Air Force Military Medical University, China
- 16:50-17:10 **Invited**
SBM11-I06-**Functional Design and Transformation Paradigm of 3D Printed Personalized Bone Implants**; Xiaowen Zhao, Shenzhen Aikesailong Technology Co., LTD, China
- 17:10-17:25 SBM11-O04: **Immuno-privileged Artificial Pancreas for Clinical Curative Treatment of Type 1 Diabetes**; Jingqi Hu, Biomanufacturing Center, Department of Mechanical Engineering, Tsinghua University, China
- 17:25-17:40 SBM11-O05-**EFL Solution For Research On Tissue Regeneration**; Qing Gao, EFL, China
- 17:40-17:55 SBM11-O06-**Strengthening New Forms of Book Building to Boost the Bio-manufacturing Sector**; Wenfang Gong, Tsinghua University Press, China
- 17:55-18:10 SBM11-O07- **PuSL 3D Printing of Functional Polymer and Its Potential Applications**; Penny Peng, BMF Precision Tech Inc., China

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Session 23 **8:30-10:25**
SAM02-2 – Design, Modeling and Simulation in Additive Manufacturing
(March 31, 5 号楼金缘厅 Jin Yuan, Building 5)
Co-Chair: Yunfeng Zhang & Dongdong Gu

- 8:30-8:50 **Invited**
SAM02-I04- **Additive Manufacturing with Dual Robot Manipulators: the Path Planning Issues and Solutions**; Yunfeng Zhang, National University of Singapore, Singapore

- 8:50-9:10 **Invited**
SAM02-I05- **Bio-inspired Additive Manufacturing of Metallic Components towards Multifunctionality**; Dongdong Gu, Nanjing University of Aeronautics and Astronautics, China
- 9:10-9:30 **Invited**
SAM02-I06-**3D Micro/nanoscale Additive Manufacturing using Focused Ion Beam Chemical Vapor Deposition**; Dengji Guo, Shenzhen University, China
- 9:30-9:45 SAM02-O03-56- **Multiphysics Modelling of Digital Light Processing 3D Printing**; Guang Liu, (A*STAR), Singapore
- 9:45-10:00 SAM02-O04- **Establishing a Computational Framework for the Design of Fe–Co–Ni–Cu High-entropy Alloys for Laser Powder Bed Fusion**; Erik Asker Emanuel Jarloev, Nanyang Technological University, Singapore
- 10:00-10:15 SAM02-O05-128- **Modeling and Simulation of Bulk Metallic Glass Crystallization During Laser Powder Bed Fusion**; Zerong Yang, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany
- 10:15-10:30 0SAM02-O06-220-**The Investigation on the Evolution of Smoking Phenomenon in Electron Beam Powder Bed Fusion Process**; Dongfang Wang, Tsinghua University, China

Session 24
08:30-10:25
SBM01-4: Biomanufacturing, Biomaterials and Tissue Engineering
(March 31, 第五会议室 No.5 Meeting Room)
Co-Chair: Renjun Pei & Xiaoxiao Han

- 8:30-8:50 **Invited**
SBM01-I13-**Injectable Hydrogels for Tissue regeneration**; Renjun Pei, Suzhou Institute of Nanotechnology and Nanobionics, Chinese Academy of Sciences, China
- 8:50-9:10 **Invited**
SBM01-I14-**Biomimetic Design and Precise Bioprinting of Large Cell-laden Scaffolds**; Xiaoxiao Han, Hunan University, China
- 9:10-9:30 **Invited**
SBM01-I15-**Advanced Biomaterials and Biofabrication for Tissue Regeneration**; Jinhua Li, Beijing Institute of Technology, China
- 9:30-9:50 **Invited**
SBM01-I16-**Biomimetic Materials of Tribology and Their Applications**; Zhiguang Guo, Hubei University, China
- 9:50-10:10 **Invited**
SBM01-I17- **Research on Bone Augmentation Based on Osteoinductivity of Bioactive Glass**; Fujian Zhao, South China University of Technology, China
- 10:10-10:25 SBM01-O04- **Spheroid On-demand Printing and Drug Screening of Endothelialized Hepatocellular Carcinoma Model at Different Stages**; Tiankun Liu, Tsinghua university, China

Session 25 **08:30-10:25**
SBM03-1: Biomanufacturing and Application of in vitro Tumor Model
 (March 31, 第一会议室 No.1 Meeting Room)
Co-Chair: Zhigang Zhang & Jong-Young Kwak

- 8:30-8:50 **Invited**
 SBM03-I01-**The Monoamine Neurotransmitter Serotonin in Tumor Progression;** Zhigang Zhang, Shanghai Cancer Research Institute, China
- 8:50-9:10 **Invited**
 SBM03-I02-**Three-dimensional Coculture System to Mimic Epithelial Tissue Containing Immune Cell;** Jong-Young Kwak, Ajou University, Korea
- 9:10-9:30 **Invited**
 SBM03-I03- **Heterogeneous Microenvironmental Stiffness Regulates Pro-metastatic Functions of Breast Cancer Cells;** Chun Liu, The First Affiliated Hospital of Sun Yat-sen University, China
- 9:30-9:50 **Invited**
 SBM03-I04- **Multicellular 3D Bioprinted Human Gallbladder Carcinoma for in vitro Mimicry of Tumor Microenvironment and Intratumoral Heterogeneity;** Huayu Yang, Peking Union Medical College Hospital, China
- 9:50-10:10 **Invited**
 SBM03-I05-**Construction of Fully Bioengineered Tissues based on Cell Sheet Technology and their in vitro application;** Botao Gao, Guangdong Academy of Sciences, China
- 10:10-10:25 **SBM03-O01- Personalized Tumor Model: From Patient Tumor to Three-dimensional Printing of in vitro Model and Drug Testing;** Shuangshuang Mao, Tsinghua University, China

Session 26 **08:30-10:25**
SBM05-4: 3D Cell Printing: Novel Bioinks, Process, Technology, and Equipment
 (March 31, 第六会议室 No.6 Meeting Room)
Co-Chair: Huiqi Xie & Maling Gou

- 8:30-8:50 **Invited**
 SBM05-I13- **Extracellular Matrix Materials for Tissue Engineering: From Research to Product;** Huiqi Xie, Sichuan University, China
- 8:50-9:10 **Invited**
 SBM05-I14-**Bioprinting Using a Nanostructured Hydrogel;** Maling Gou, West China Hospital of Sichuan University, China
- 9:10-9:30 **Invited**
 SBM05-I15- **Tension-induced Directional Migration of Hepatic Stellate Cells Coordinates Liver Fibrosis Progression;** Yanan Du, Tsinghua University, China
- 9:30-9:50 **Invited**
 SBM05-I16-**Multi-Material Embedded Printing for a Tri-Layered Artery Physiological Model;** Hongzhao Zhou, Zhejiang University, China

- 9:50-10:05 SBM05-O04-166-Towards Development of a High-corrosion Resistance Mg Alloy and Beneficial Microenvironments for Bone Regeneration with Sc-assisted Growth of Passive Film; Zhengguang Wang, Peking University Third Hospital, China
- 10:05-10:20 SBM05-O05-151-Volumetric Bioprinting of Protein-based (bio)inks; Maobin Xie, Guangzhou Medical University, China

Session 27
08:30-10:25
SBM02-1: Biomanufacturing for Disease Modeling and Drug Testing
 (March 31, 中北厅 Zhong Bei)
Co-Chair: Guangdong Zhou & Rui Huang

- 8:30-8:50 **Invited**
 SBM02-I01-Key Technologies of Bone and Cartilage Regeneration as well as their Clinical Translation; Guangdong Zhou, Shanghai 9th People's Hospital, Shanghai Jiao Tong University School of Medicine, China
- 8:50-9:10 **Invited**
 SBM02-I02-The Application of Innovative Materials and Intelligent Models in Drug Issue Governance; Rui Huang, Southwest University of Political Science and Law, China
- 9:10-9:30 **Invited**
 SBM02-I03-Coaxial Bioprinting of Vascular Grafts and Disease Models; Ge Gao, Beijing Institute of Technology, China
- 9:30-9:50 **Invited**
 SBM02-I04-Manufacturing Flexible Fiber-optic Chemical Sensors for Disease Dynamic Monitoring; Nan Jiang, Sichuan University, China
- 9:50-10:05 SBM02-O01-90-In vitro Reconstruction of Epithelial Wrinkling and Wrinkle-to-Fold Transition; Jaeseung Youn, POSTECH

Session 28
8:30-10:25
SBM10-1: Biomanufacturing for Orthopedics Application – Cartilage
 (March 31, 第八会议室 No.8 Meeting Room)
Co-Chair: Jiakuo Yu & Bin Li

- 8:30-8:50 **Invited**
 SBM10-I01-In situ Bioprinting for Cartilage Repair using a Parallel Manipulator; Jiakuo Yu, Tsinghua Changgeng Hospital, Beijing, China
- 8:50-9:10 **Invited**
 SBM10-I02-Intervertebral Disc Regeneration: Materials and Mechanics; Bin Li, Soochow University, China
- 9:10-9:30 **Invited**
 SBM10-I03-Designing and Preparation of Mg²⁺-containing Biomaterials for Enhanced Bone and Cartilage Regeneration; Qing Cai, Beijing University of Chemical Technology, China

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- 9:30-9:50 **Invited**
SBM10-I04-**Current Practice and Promise of Tissue Engineering in Rhinoplasty**;
Jianjun You, Chinese Academy of Medical Sciences & Peking Union Medical College,
Plastic Surgery Hospital and Institute, China
- 9:50-10:10 **Invited**
SBM10-I05- **The Research and Translation of PHA Energetic Materials for Bone
Regeneration**, Peng Zhang, Shenzhen Advanced Institute, Chinese Academy of
Sciences, China

Session 29 **8:30-10:25**
SBM06-1: Biomanufacturing for Human Organ Physiopathology Emulation:
(March 31, 第二会议室 No.2 Meeting Room)
Co-Chair: Qi Gu & Zibing Jin

- 8:30-8:50 **Invited**
SBM06-I01-**Utilizing Cellular Mobility to Connect Engineered and Natural Organs**;
Qi Gu, Institute of Zoology, Chinese Academy of Sciences, China
- 8:50-9:10 **Invited**
SBM06-I02-**The Near-future Feasibility of Artificial Biological Eyes at Tongji
University**; Zibing Jin, Beijing Tongren Hospital, China
- 9:10-9:30 **Invited**
SBM06-I03- **Vascularised Complex Tissue and Organ Construction**; Chuhong Zhu,
Army Medical University, China
- 9:30- 9:50 **Invited**
SBM06-I04-**From the Petri Dish Towards Whole Organs: Scaling Up 3D
Bioprinting**; Mark A. Skylar-Scott, Stanford University, USA
- 9:50-10:10 **Invited**
SBM06-I05-**Biomaterials Regulate Stem Cell Fate and Neuroorganoid Construction**;
Rongrong Zhu, Tongji University, China
- 10:10-10:25 SBM06-O01-102-**Supramolecular Biofabricated Living Materials as an in vitro Lung
Epithelial Infection Model**; Yuanhao Wu, Union Hospital Affiliated to Tongji Medical
College, Huazhong University of Science and Technology, China

10:25-10:45 Tea Break/Poster/Exhibition

Session 30 **10:45-12:20**
SAM03-2 – AM with Metallic, Ceramics, Polymer and Composite Materials
(March 31, 金缘厅 Jin Yuan, Building 5)
Co-Chair: Jerry Fuh & Chunze Yan

- 10:45-11:05 **Invited**
SAM03-I04- **Additive Manufacturing (AM) Technologies for Non-metallic
Composites**; Chunze Yan, Hust (Huazhong University of Science and Technology), China

- 11:05-11:25 **Invited**
SAM03-I05- **3D Printing of Field's Metal for High-performance Sensors and Electronics**; Jerry Fuh, National University of Singapore, Singapore
- 11:25-11:40 SAM03-O06- **Enhanced Prediction of Build Quality by Considering the Formation Instability in Laser Powder Bed Fusion**; Chaochao Wu, Fuzhou University, China
- 11:40-11:55 SAM03-O07- **3D Printing of Inherently Nanoporous Polymers with Advanced Functionalities**; Zheqin Dong, School of Stomatology, Shandong University, China
- 11:55-12:10 SAM03-O08- **Forming Deviation Coupling Model and Control Method in the Photopolymerization Process of Ceramic Slurry**; Qian Feng, Tsinghua University, China

Session 31 **10:45-12:20**
SBM01-5: Biomanufacturing, Biomaterials and Tissue Engineering
(March 31, 第五会议室 No.5 Meeting Room)
Co-Chair: Yuanyuan Liu & Yuxiao Lai

- 10:45-11:05 **Invited**
SBM01-I18- **Bio-additive Composite Molding and Its Application in the Construction of in vitro Skin Models**; Yuanyuan Liu, Shanghai University, China
- 11:05-11:25 **Invited**
SBM01-I19- **Functional Biomedical Materials for Repairing Challenging Bone Defect**; Yuxiao Lai, Shenzhen Advanced Institute of Chinese Academy of Sciences, China
- 11:25-11:45 **Invited**
SBM01-I20- **Fabrication of Dynamic-crosslinked Microgel Assembly Bioinks and Its Application in Biomedical Engineering**; Qi Feng, South China University of Technology, China
- 11:45-12:05 **Invited**
SBM01-I21- **3D Printing Alginate-based Bioinks in the Fabrication of Biomaterial Designs for Soft Tissue Repair**; Xiaojie Lian, Taiyuan University of Technology, China
- 12:05-12:20 SBM01-O05-50- **Biocompatibility and Osteogenic Capacity of Additively Manufactured Biodegradable Porous WE43 Scaffolds: an in vivo Study in a Canine Model**; Yifei Gu, Suzhou Dushu Lake Hospital (Dushu Lake Hospital Affiliated to Soochow University), China

Session 32 **10:45-12:20**
SBM03-2: Biomanufacturing and Application of in vitro Tumor Model
(March 31, 第一会议室 No.1 Meeting Room)
Co-Chair: Xuejun Yang & Yuan Pang

- 10:45-11:05 **Invited**
SBM03-I06- **Digital and Intelligence Neurosurgery Promotes the Formation of New Paradigms in Preoperative Planning, Virtual Surgery, and Intraoperative Guidance for Brain Tumors**; Xuejun Yang, Beijing Tsinghua Changgung Hospital, China

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- 11:05-11:25 **Invited**
SBM03-I07- **Biofabrication for Tumor Precision Medicine**; Yuan Pang, Tsinghua University, China
- 11:25-11:45 **Invited**
SBM03-I08-**Neutrophil Extracellular Traps in Basic and Clinical Research of Oncology**; Jianzhong Shou, Cancer Hospital, Chinese Academy of Medical Sciences, China
- 11:45-12:00 SBM03-O02- **Three-dimensional Bioprinting of Personalized Lung Adenocarcinoma Models for Therapeutic Screening**; Yikun Yang, Shenzhen Cancer Hospital, China
- 12:00-12:15 SBM03-O03- **Three-dimensional Bioprinting of Vascularized Breast Tumor Models with Spatially Defined Microenvironments to Study Intratumoral Heterogeneity and Drug Resistance**; Tianying Yuan, Tsinghua University, China

Session 33 10:45-12:20
SBM05-5: 3D Cell Printing: Novel Bioinks, Process, Technology, and Equipment
(March 31, 第六会议室 No.6 Meeting Room)
Co-Chair: Pu Chen & Changshun Ruan

- 10:45-11:05 **Invited**
SBM05-I17-**Faraday Wave Bioassembly for Primary Cell Based 3D Biofabrication**; Pu Chen, Wuhan University, China
- 11:05-11:25 **Invited**
SBM05-I18- **A Small-Molecule Polycationic Crosslinker Boosts Alginate-based Bioinks for Extrusion Bioprinting**; Changshun Ruan, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China
- 11:25-11:40 SBM05-O06-137-**Embedded 3D Printing of Soft and Biological Materials: Embedded Shapeability via Supportive Bath Matching and Applications to Human Cochlear Modelling**; Iek Man Lei, Department of Electromechanical Engineering, University of Macau, China
- 11:40-11:55 SBM05-O07-119-**A Regulable Supporting Bath for Embedded Printing of Soft Biomaterials**; Qi Li, Hangzhou Normal University, China
- 11:55-12:10 SBM05-O08-101-**Water-assisted Vacuum Embossing Process for Patterned Porous Culture Platform**; Jisang Lee, POSTECH
- 12:10-12:25 SBM05-O09-213-**Microfiber-templated Porogel Bioinks for 3D Bioprinting and in-situ Endothelialization**; Yuzhi Guo, Tsinghua University, China

Session 34 10:45-12:20
SBM10-2: Biomanufacturing for Orthopedics Application – Cartilage
(March 31, 第八会议室 No.8 Meeting Room)
Co-Chair: Yujiang Fan & Peng Wen

- 10:45-11:05 **Invited**
SBM10-I06-**Additive Manufactured Bioactive Bone Regeneration Scaffold with Multilevel Structures**; Yujiang Fan, Sichuan University, China

- 11:05-11:25 **Invited**
SBM10-I07- **Three Level Bioadaptive Strategies and Mechanisms of Additively Manufactured Biodegradable Metal Implants**; Peng Wen, Tsinghua University, China
- 11:25-11:45 **Invited**
SBM10-I08-**Research on Additive Manufacturing Technology for Bone Tissue Engineering Applications**, Yanen Wang, Northwestern Polytechnical University, China
- 11:45-12:00 SBM10-O01-**Scale-up Fabrication of “All-in-one” Functional Microspheres as Multifunctional System for Minimally Invasive Cartilage Regeneration**; Feifei Zhou, The First Affiliated Hospital of Zhejiang University School of Medicine, Hangzhou, China
- 12:00-12:15 SBM10-O02--**Experimental Study of Bone and Cartilage Replacement Materials for 4D Printed Polyurethane Prosthesis**; Chenyu Wang, First Hospital of Jilin University, China

Session 35
10:45-12:20
SBM11-3: AM and BM for industry and clinical application
(March 31, 第二会议室 No.2 Meeting Room)
Co-Chair: Enderwick Pei & Yu Guo

- 10:45-11:00 SBM11-O8- **Application Practice of Medical Polymer 3D Printing**; Enderwick Pei, Raise3D, China
- 11:00-11:15 SBM11-O9- **Research Progress of Orthopedic Implants Fabricated by Selective Electron Beam Melting**; Yu Guo, Xi'an Sailong AM Technologies Co., Ltd. State Key Laboratory of Powder Metallurgy, Central South University, China
- 11:15-11:30 SBM11-O10- **State-of-the-art 3D Bioprinting Technology for Biomanufacturing**; Kar Perng Low, CELLINK bioprinting AB, China
- 11:30-11:45 SBM11-O11-**Development and Application of EBSM® Electron Beam Metal 3D Printing in Orthopaedic Medicine Field**; Wenbin Kan, Beijing QuickBeam Tech. Co.Ltd., China
- 11:45-12:00 SBM11-O12-**Application of Fibroin in Human Health and Regenerative Medicine**; Nan Ma, Zhejiang Xingyue Biotechnology Co., LTD, China
- 12:00-12:15 SBM11-O13-17-**Concurrent Data Compression and Defect Detection in Additive Manufacturing Based on Physics-Constrained Dictionary Learning**; Yanglong Lu, The Hong Kong University of Science and Technology, China

Session 36
10:45-12:20
SBM02-2: Biomanufacturing for Disease Modeling and Drug Testing
(March 31, 中北厅 Zhong Bei)
Co-Chair: Yu Song & Yongcong Fang

- 10:45-11:00 SBM02-O03-31-**Berberine-GelMA Gel in Tympanic Drug Delivery: A Novel Approach for Treating Sensorineural Hearing Loss**; Jingbin Hao, School of Mechanical and Electrical Engineering, China University of Mining and Technology, China

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- 11:00-11:15 SBM02-O04-A Novel 3D in vitro Neural Model for Neurotoxicity Test of New Psychoactive Substances; Yiming Wang, Tsinghua University, China
- 11:15-11:30 SBM02-O05-Epileptic Model of Engineered Brain-like Tissue Constructs via 3D Cell-printing Technology; Wei Chen, Tsinghua University, China
- 11:30-11:45 SBM02-O06-Three-dimensional Bioprinting Model of Ovarian Cancer for Identification of Patient-specific Therapy Response; Jiangang Zhang, Department of Liver Surgery, PUMCH, Beijing, China
- 11:45-12:00 SBM02-O07-Construction and Application of Personalized Tumor Models based on Droplet Microfluidic Technology, Yanmei Zhang, Institute of New Materials and Advanced Manufacturing, Beijing Academy of Science and Technology, China

12:30-13:30 Lunch (赏园 Shang Yuan、东园 Dong Yuan, Building 5)

Session 37 **13:30-15:50**
SAM03-3 – AM with Metallic, Ceramics, Polymer and Composite Materials
 (March 31, 5 号楼金缘厅 Jin Yuan, 1st floor of Building 5)
Co-Chair: Changjun Han & Yufan Zhao

- 13:30-13:50 **Invited**
 SAM03-I06 - Laser Powder Bed Fusion Additive Manufacturing of Biodegradable Zinc: Processing, Design, and Performance; Changjun Han, School of Mechanical and Automotive Engineering, South China University of Technology, China
- 13:50-14:05 SAM03-O09-Improving Mechanical Properties in Laser Powder Bed Fusion of AlSi10Mg by in-situ High-speed Scanning Remelting; Yufan Zhao, Northwestern Polytechnical University, China
- 14:05-14:20 SAM03-O10- Porous Bio-high Entropy Alloy Scaffolds Fabricated by Direct Ink Writing; Guangbin Zhao, Xi'an Jiaotong University, China
- 14:20-14:35 SAM03-O11- Band-Aid-like Light-Responsive Smart Periosteum for Accelerated Bone Regeneration; Xingguo Zhou, Shandong University, China
- 14:35-14:50 SAM03-O12- Phenomenological Analysis and Multiphysics Simulation of Laser Additive Manufacturing: Application on the Development of H13 Steel Tool; Jichang Xie, Tsinghua University, China
- 14:50-15:05 SAM03-O13-Online Process Monitoring and Control of Laser Powder Bed Fusion Additive Manufacturing; Yingjie Zhang, South China University of Technology, China
- 15:05-15:20 SAM03-O14-Materials and Process Design of 2xxx Aluminum Alloys for Laser Additive Manufacturing; Jinliang Zhang, Wuhan University of Technology, China
- 15:20-15:35 SAM03-O15- Progress on Electron Beam-Laser Hybrid Manufacturing; Mohan Jiao, Tsinghua University, China
- 15:35-15:50 SAM03-O16- Digital Design and Performance Evaluation of Grinding Wheel with Configurable Interior Structure Based on Laser Powder Bed Fusion Technology; Meng Ye, Tsinghua University, China

Session 38 **13:30-15:50**
SBM01-6: Biomanufacturing, Biomaterials and Tissue Engineering
 (March 31, 第五会议室 No.5 Meeting Room)
Co-Chair: Jin Zhou & Lei Zhang

- 13:30-13:50 **Invited**
 SBM01-I22-**Research on the Functional Reconstruction of Mandibular Segmental Defects Regenerative Implants**; Chao Wang, Beihang University, China
- 13:50-14:10 **Invited**
 SBM01-I23-**Construct Artificial Cornea based on Bio-manufacturing Technology**; Shengli Mi, Tsinghua Shenzhen International Graduate School, China
- 14:10-14:30 **Invited**
 SBM01-I24-**3D-printed Bioresorbable Stent Coated with Dipyridamole-Loaded Nanofiber for Restenosis Prevention and Endothelialization**; Lei Zhang, Tsinghua University, China
- 14:30-14:50 **Invited**
 SBM01-I25-**Development of a Hybrid Selective Laser Melting and CNC Milling System**; Changyong Liu, Shenzhen University, China
- 14:50-15:10 **Invited**
 SBM01-I26-**Bionic Construction of Engineered Cardiac Tissue and Heart Regeneration Research**; Jin Zhou, Academy of Military Medical Sciences, China
- 15:10-15:35 SBM01-O06 **Programmable Ceramic 4D Printing via Multi-material Vat Photopolymerization**; Pengcheng Zhao, Tsinghua University, China

Session 39 **13:30-15:50**
SBM05-6: 3D Cell Printing: Novel Bioinks, Process, Technology, and Equipment
 (March 31, 第六会议室 No.6 Meeting Room)
Co-Chair: Ding Weng & Renjian Xie

- 13:30-13:50 **Invited**
 SBM05-I19- **Bio Mimetic Surface Microstructure for Air Drag Reduction Applications**; Ding Weng, Tsinghua University, China
- 13:50-14:10 **Invited**
 SBM05-I20-**Double-channel Perfusable Construct: A Potential and Robust 3D Model for Tissue Engineering and Drug Screen**; Renjian Xie, Gannan Medical College, China
- 14:10-14:30 **Invited**
 SBM05-I21-**Droplet-based Microfluidic Flow Cytometric Bioprinting**; Pengfei Zhang, Beihang University, China
- 14:30-14:50 **Invited**
 SBM05-I22- **The Fabrication and Application of Biomimetic Double-network Hydrogels**; Zhongwei Guo, Zhengzhou University, China

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- 14:50-15:05 SBM05-O09-17-**Coaxial Bioprinting of Vascular Grafts and Disease Models**; Yanglong Lu, The Hong Kong University of Science and Technology, China
- 15:05-15:20 SBM05-O10-**Enabling 3D Printability and Vascular Morphogenesis with Double Network Dynamic Hydrogels**; Runze Xu, Tsinghua University, China
- 15:20-15:35 SBM05-O11-247-**Primary Clinical Applications of Novel Custom PEEK TMJ Implant Based On 3D Printing Technology**; Lei Tian, School of Stomatology, The Fourth Military Medical University, Xi'an, China

Session 40 13:30-15:50
SBM07-3: Biomanufacturing with stem cells, organoids and organ-on chips:
 (March 31, 第一会议室 No.1 Meeting Room)
Co-Chair: Jie Na & Shaohua Ma

- 13:30-13:50 **Invited**
 SBM07-I11-**Organoid Printing for Precision Cancer Medicine and Regeneration and Repair**; Shaohua Ma, Tsinghua University Shenzhen International Graduate School, China
- 13:50-14:10 **Invited**
 SBM07-I12-**3D Bioprinting Facilitated the Engineering of Organoids for Regenerative Medicine**; Jie Na, Tsinghua University, China
- 14:10-14:30 **Invited**
 SBM07-I13-**Manufacturing of Hematopoietic Cells: From 2D to 3D Organoid Culture**; Yanhua Li, Beijing Institute of Radiation Medicine, China
- 14:30-14:50 **Invited**
 SBM07-I14-**Starting from the Treatment of Liver Cancer with Yttrium 90 SIRT to the Interdisciplinary Project of Medical Science and engineering**; Xiaobin Feng, Beijing Tsinghua Changgung Hospital, China
- 14:50-15:05 SBM07-O03-**Engineered Brain-like Constructs for Defined Development Models via in situ Neural Progenitor Cells Differentiation**; Ke Gai, Tsinghua University, China
- 15:05-15:20 SBM07-O04-**Study of Paraquat-induced Pulmonary Fibrosis using Biomimetic Micro-lung Chips**; Jingjing Xia, Tsinghua University, China

15:50-16:20 **Closing Ceremony** (5 号楼金缘厅 Jin Yuan, Building 5)

Poster Session

	Reg.ID	Title	Name	Affiliate
1	52	Intravital imaging of hepatic lipid droplets and liver macrophages in a mouse model of diet-induced non-alcoholic fatty liver disease	In-Jeong Lee	3D Immune System Imaging Core Center
2	54	3D-Printed PEEK Stents in Unusual Types of Nutcracker Syndrome	Yunhua Ji	The Second Affiliated Hospital of the PLA Air Force Military Medical University
3	70	Smart tissue engineering scaffolds with sensing functions	Wenyu Wang	Hong Kong University of Science and Technology (Guangzhou)
4	82	High-resolution 3D printing of gradient aperture annulus fibrous scaffolds for intervertebral disc regeneration	Zhao Liu	NUS (Suzhou) Research Institute
5	110	A Hydrogen bond regulation strategy for programmable channel networks fabrication	Zhencheng Liao	University of Macau
6	111	A “Nonsolvent Quenching” Strategy for 3D Printing of Polysac-charide Scaffolds with Immunoregulatory Accuracy	Chonghao Chen	University of Macau
7	113	Structural design and optimization of a helical milling end effector for robotic dental implanting	XiXi Xu	Zhejiang University of Technology
8	114	Overview of structural optimization of mechanical components based on bionic structures	Xuzhe Han	Shandong University
9	121	Gradient porous implant design based on TPMS for mandibular reconstruction	Qingqing Zhang	Zhejiang University of Technology
10	124	Jetting-based Bioprinting of E. coli Biofilm Enabling Detection of Mercury(II) in Water	Xudong Guo	Center for Eco-Environment Research, Chinese Academy of Sciences
11	125	A non-circular cross-section implant suitable for robot implantation	Tingyu Li	Zhejiang University of Technology
12	127	Microgels as the bioprinting platform allows fabrication of perfusable vascularized pancreatic tissue with customized design	Karn Chagsorn	University of Tokyo
13	129	Strong textured beta titanium alloy with low e/a ratio fabricated by electron beam melting	Chengqian Lu	And the Institute of Metal Research, Chinese Academy of Sciences
14	130	Engineering blood-brain barrier construct for drug screen based on multi-cell 3D-printing	Chenyujun Hu	Beijing Institute of Cardiopulmonary and Vascular Diseases
15	142	A Hierarchical 3D Graft Printed with Nanoink for Functional Craniofacial Bone Restoration	Yang Shi	The Affiliated Stomatological Hospital of Zhejiang University School of Medicine

16	146	A novel simultaneous preheating process using dual-electron-gun to achieve the high and steady powder bed temperature	Yang Li	Tsinghua University
17	147	Electrospray Preparation Method and Biomedical Application of Multifunctional Gelatin-Based Microgel	Mingjun Xie	Zhejiang Provincial People's Hospital
18	148	Intelligent Components Conformally Embedded with Fiber Bragg Gratings in the Additive Process	Ao Zhang	Wuhan University Of Technology
19	150	Research on integrated 3D printing method of lamellar corneal substitute with gelatin-based hydrogel	Qian Xue	institute of advanced machines zhejiang university
20	154	Study on Electron Beam Powder Bed Fusion Process for High Strength Al2024 Alloy	Mohan Jiao	Tsinghua University
21	160	Additively manufactured Si3N4 fiber-reinforced PEEK porous scaffold with osteogenic, angiogenic, and antibacterial capacity for bone repairing	shengxin zeng	Peking University Third Hospital
22	163	Combinatory electric-field-guided deposition for spatially regulated deposition of microparticles	Zhiyuan Zheng	University of Science and Technology of China
23	170	Effect of Selective Laser Melting process parameters on the mechanical and tribological properties of GH4169 superalloy at 650℃ .	Muri Na	Inner Mongolia University of Technology
24	188	Aerosol Jet Printing Organic Electrochemical Transistor Force Sensor With Multidimensional Force Sensing	Xinchao Zhou	Beijing University of Aeronautics and Astronautics
25	196	Research on quasi-static mechanical properties of melt-cast explosives based on FDM 3D printing	Chao Guo	Nanjing University of Science & Technology
26	197	Development of a 3D bioprinting-based integrated manufacturing system	Changru Liu	Tsinghua University
27	203	Bioprinting for the construction of three-dimensional alveoli and their toxic gas/toxin evaluation research	Chang Zhou	Tsinghua University
28	205	A Novel 3D in vitro Neural Model for Neurotoxicity Test of New Psychoactive Substances	Yiming Wang	Tsinghua University
29	206	Scalable formation of highly viable and functional hepatocellular carcinoma spheroids in an oxygen-permeable microwell device for anti-tumor drug evaluation	Jianyu He	Biological Manufacturing Center, Mechanical Department, Tsinghua University
30	208	AI-driven 3D bioprinting for regenerative medicine: from bench to bedside	Zhenrui Zhang	Tsinghua University
31	211	A hierarchical data storage system based on DNA molecules and nanodot array capable of repeatable random access	Ben Pei	Tsinghua University
32	214	Endothelialized aggregate assembly based on 3D printing for rapid construction of vascularized tissues	Zhenzhen Zhou	Tsinghua University

33	215	The influence of β -TCP on cell cytoactive of bio-fabricated poly epsilon-caprolactone-based composite scaffolds	Yueming Tian	Tsinghua University
34	216	Construction and Application of Tumor-on-Chip for Multi-Drug Combination Evaluation	Yuting Guo	Tsinghua University
35	218	An Application of Extracellular Matrix Materials in Regulating Vascularized Spheroids Growth	Zhendong Liao	Tsinghua University
36	235	A Novel Integration and Applied Research on Early Precision Authentication of Mild Traumatic Brain Injury (mTBI): A Bio-Manufacturing and Biosensor Systems-based Approach	Jian Shi	Central South University
37	239	Strength and Fracture Characteristics of Silica Sol Shell Reinforced with Abaca Fibers Impregnated with Aluminum Dihydrogen Phosphate	Hao Liu	Inner Mongolia University of Technology
38	240	Strength and Failure mechanism of Sodium Silicate Shell via Acetic Acid Droplet Hardening	Juan Zhong	Inner Mongolia University of Technology
39	241	Strength Evolution and Fracture Feature of Carbon Fiber Reinforced Silica Sol Shell for Investment Casting	Zhiran Zhang	Inner Mongolia University of Technology
40	243	Exploring Bionic Design in Machine Tool Industry: Applications, Modeling, Simulation, and Biofabrication	jian wang	Shandong University
41	245	3D-Printed PEEK Stents in Unusual Types of Nutcracker Syn-drome	Yunhua Ji	The Second Affiliated Hospital of the PLA Air Force Military Medical University

General Information

Conference Venue

The conference center of the Xijiao hotel has 21 small and medium-sized conference rooms and a ginkgo hall that can accommodate 500 people, which can meet the needs of all kinds of meetings. The hotel has received high-level meetings of the government for many times. It is the designated reception hotel of the central government and Beijing municipal government. The well-equipped recreation center here is a paradise away from the hustle and bustle on holidays. It is also a wise choice for business people and corporate groups. The hotel is based on the service concept of ‘warmth like water and respect for guests like heaven’. The professional service team is always waiting for guests from all over the world with warm and high-quality service.

Transportation

The Xi Jiao Hotel (Beijing Xijiao Binguan, http://www.xijiao-hotel.com.cn/en_US/) is located in Zhongguancun High-tech Development Zone, convenient to many universities including Tsinghua University and Peking University. This Beijing hotel has more than 400 guest rooms ranging from single rooms to suites equipped with satellite TVs, international direct dial telephones, Internet access and mini bars. On-site dining outlets serve Chinese, Japanese and Korean dishes. For business travelers, this Beijing hotel provides a business center and various well-equipped conference rooms. In terms of relaxation, guests can burn calories at the gym, pay a visit to the spa or go bowling.

Distance:

Capital airport (30km)

Beijing Railway Station (20km)

Beijing West Railway Station (16km)

Beijing North Railway Station (8km)

Beijing South Railway Station (19km)

Methods to go:

1) Taxi: around 1 hour from the airport, 150RMB

师傅，请带我去北京西郊宾馆（北京市海淀区五道口王庄路），谢谢！

2) Subway: Line13 at Wudaokou station.

3) Shuffle Bus from airport: at Tsinghua Science Park station.





