



fmz



International Conference on Biofabrication

BIOFABRICATION

2018 WÜRZBURG

October 28-31 2018 Würzburg, Germany



Annual Meeting of the
International Society for Biofabrication



UCLA



UNIVERSITÄT WÜRZBURG



南方科技大学
SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY



UNIVERSITY OF OXFORD



東京大学
THE UNIVERSITY OF TOKYO



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Monday, 29.10.2018

Tuesday, 30.10.2018

Wednesday, 31.10.2018

8.00	Registration: Open all 3 days				
8.15	Opening Ceremony				
8.30					
8.45	Plenary Lecture: Brian Derby				
9.00					
9.15					
9.30	Coffee Break				
9.45					
10.00					
10.15	Session 1: Bioinks	Session 2: Musculoskeletal Applications	Session 3: Cell containing Building Blocks		
10.30					
10.45					
11.00					
11.15					
11.30					
11.45					
12.00	Lunch Break				
12.15					
12.30	Lunchsymposium SFB/TRR 225				
12.45					
13.00	Plenary Lecture: Jason Burdick				
13.15					
13.30	Session 4: Bioinks	Session 5: Musculoskeletal Applications	Session 6: Biofabrication in Germany		
13.45					
14.00					
14.15					
14.30					
14.45					
15.00	Coffee Break				
15.15					
15.30					
15.45					
16.00	Session 7: Bioinks	Session 8: Young Scientists Chapter - Scientific Session	Session 9: Cell containing Building Blocks		
16.15					
16.30					
16.45					
17.00					
17.15					
17.30	General Assembly Meeting				
17.45					
18.00					
18.15					
18.30					
18.45					
19.00	Young Scientists Chapter - Social Event				
19.15					
19.30					
23.00					

10.30	Plenary Lecture: Matthias Lutolf	Session 10: Vascularization Approaches	Session 11: Biofabrication and Cancer	Session 12: Droplet Based Bioprinting Approaches
10.45				
11.00	Coffee Break			
11.15	Session 13: Cell containing Building Blocks	Session 14: Melt Electrowriting	Session 15: Light-based Approaches for Imaging and Fabrication	
11.30				
11.45				
12.00	Lunch Break			
12.15				
12.30	Young Scientists Event: "Meet the Editor"			
12.45				
13.00	Session 16: Cell containing Building Blocks	Session 17: Biofabrication and Cancer	Session 18: Novel Fabrication Approaches	
13.15				
13.30	Poster Session 16.15 - 16.30 Award Ceremony - 3D Bioprinting Solutions Young Investigators Poster Award for "Innovations in Bioink Development"	SFB/TRR 225 & Young Scientists event "meet the legends"		
13.45				
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19.30				
23.00				

10.30	Plenary Lecture: Fiona Wood	Session 19: Liver Tissue	Session 20: Neural Cells	Session 21: Skin
10.45				
11.00	Coffee Break			
11.15	Session 22: Industry Session	Session 23: Translational Biofabrication	Session 24: Bioprinting and Stem Cells	
11.30				
11.45				
12.00	Lunch Break			
12.15				
12.30	Session 25: Industry Session	Session 26: Cardiac Tissue	Session 27: Novel Approaches	
12.45				
13.00	Closing Ceremony			
13.15				
13.30	Departure			
13.45				
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23.00				

10.30	Room: Panorama 3			
10.45	Young Scientists Event: "Career session"			
11.00				
11.15				
11.30				
11.45				
12.00				

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Welcome note of the conference chair



Welcome to International Society for Biofabrication Conference 2018

On behalf of the scientific and local organization committees, I would like to welcome you to the Annual Conference of the International Society for Biofabrication (ISBF) in Würzburg.

The objective of this conference is to provide a broad communication platform for this multi-disciplinary and growing community to enable researchers, clinicians and industry participants to exchange and disseminate the recent scientific discoveries, research activities, development and emerging applications in the field of Biofabrication. We thank the contributors for their commitment and are confident that the scientific program composed of 4 plenary lectures, 23 keynote talks as well as 98 contributed lectures and 181 posters that span the complete field and will stimulate scientific discussions.

Würzburg is a historic city with rich culture including the famous residence palace, a UNESCO world cultural heritage and one of the most important baroque palaces in Europe with daily guided tours in English. Enjoy scientific discussion in this unique flair accompanied by the famous local wine at the conference dinner that will be initiated by a sparkling wine reception in the residence palace. I also recommend to have a wine on the old bridge over the Main river and to pay a visit to the lab where Wilhelm Conrad Röntgen discovered X-Rays in 1895!

Welcome to Würzburg!

Jürgen Groll



Locations

DATE

28-31 October 2018

CONFERENCE WEBSITE

www.biofabrication2018.org

CONFERENCE



Quelle: Congresscenter Würzburg

Congress Centrum Würzburg
Pleichertorstr. 5
97070 Würzburg

GET TOGETHER



Quelle: www.wikimedia.org

Kulturspeicher Würzburg
Museum im Kulturspeicher
Veitshöchheimer Str. 5
97080 Würzburg

<https://www.kulturspeicher.de>



Locations

YOUNG SCIENTISTS SOCIAL EVENT

Waldschänke Dornheim

Talaveraplatz

97082 Würzburg

<https://www.waldschaenke-dornheim.de>

SPARKLING WINE RECEPTION



Quelle: www.wikimedia.org

Residence Palace

Residenzplatz

97070 Würzburg

<http://www.residenz-wuerzburg.de/englisch/residenz/index.htm>

CONFERENCE DINNER LOCATION

Wine cellar of the Residence Palace

Residenzplatz

97070 Würzburg

<https://www.hofkeller.de>



Finding your way in Würzburg



- 1** Congress Centrum Würzburg
- 3** Museum im Kulturspeicher
- 5** Dornheim
- 2** Residence Palace
- 4** Main Station

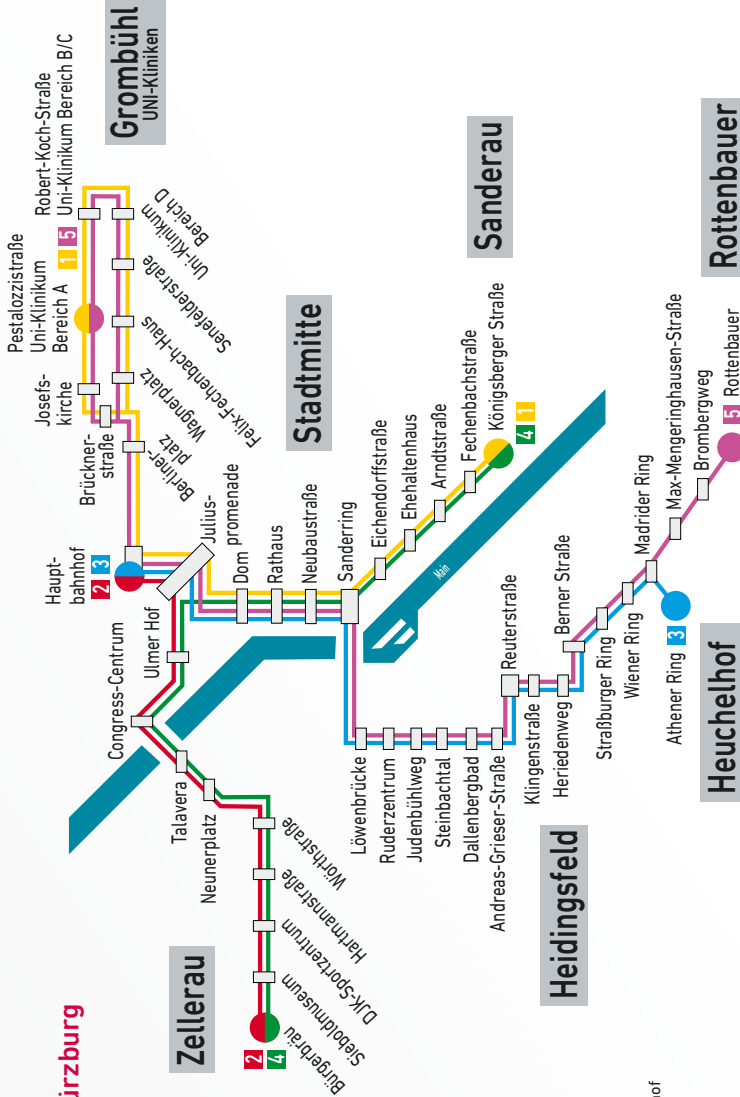


LINIENNETZ der Straßenbahnen in Würzburg



Taxis can be found to the left after exiting the main station.
If none are available, or also for the time during the meeting, taxis
can be ordered by phone e.g. via +49 09 3119400 or +49 09 3142004.

Ihr Partner im



- **Straßenbahnlinie 1**
Sanderau - Hauptbahnhof - Grombühl / Uni-Kliniken
- **Straßenbahnlinie 2**
Hauptbahnhof - Zellerau
- **Straßenbahnlinie 3**
Hauptbahnhof - Heidingsfeld - Heuchelhof
- **Straßenbahnlinie 4**
Sanderau - (Hauptbahnhof) - Zellerau
- **Straßenbahnlinie 5**
Rottenbauer - Heuchelhof - Heidingsfeld - Hauptbahnhof - Grombühl / Uni-Kliniken

⊠ Haltestelle der Straßenbahn
● Endhaltestelle der Straßenbahn

Organization

CONFERENCE CHAIR

Prof. Dr. Jürgen Groll
Universitätsklinikum Würzburg
Department of Functional Materials in Medicine and Dentistry
Pleicherwall 2
97070 Würzburg/DE

LOCAL ORGANIZING TEAM

Dr. Andrea Ewald
Tomasz Jüngst

SCIENTIFIC ORGANIZATION COMMITTEE

Prof. Dr. Aldo Boccaccini
Prof. Dr. James Yoo
Prof. Dr. Jos Malda
Prof. Dr. Lorenzo Moroni
Prof. Dr. Paul Dalton
Prof. Dr. Thomas Scheibel
Prof. Dr. Torsten Blunk
Prof. Dr. Tim Woodfield
Asst. Prof. Dr. Riccardo Levato
Asst. Prof. Dr. Ing. Miguel Dias Castilho
Dr. Khoon Lim

PROFESSIONAL CONGRESS ORGANIZER

mes GmbH
Liliencronstr. 17
12167 Berlin/DE
<http://www.mes-berlin.com>

GRAPHICS AND HOMEPAGE

Daimon Hall
<http://carbonandneon.com>



General information

CONFERENCE LANGUAGE

The conference language is English.

REGISTRATION AND GENERAL INFORMATION - OPENING HOURS

Sunday	Monday	Tuesday	Wednesday
16.00-19.00	07.30-18.00	07.30-17.00	07.30-12.00

NAME BADGE

Please wear your name badge during all conference events. Admission to scientific sessions and to the industrial exhibition is restricted to participants wearing their badge. Participants will receive their name badge at the check-in.

WIFI ACCESS

WIFI is available for free throughout the whole conference area. Please ask at the check-in for the login data.

REGISTRATION FEES - ONSITE

Regular delegates	600 EUR
Students*	400 EUR
Social Evening**	90 EUR

* Proof required, ** different venue – limited number of tickets

PAYMENT AND CONFIRMATION OF PAYMENT

An invoice will be sent to you via e-mail within 14 days. It is a valid invoice which may be submitted to the local tax and revenue office. All fees are due upon receipt of the invoice. Payment transfers must include participant's name and invoice number. Payment is also accepted by credit card (Master-/Eurocard, American Express, VISA). In case you have transferred the registration fee shortly before the start of the conference (up to 10 days prior to conference opening), we ask you to please present your transfer remittance slip onsite.

THE CONFERENCE FEE INCLUDES:

- Admission to all scientific sessions and access to the industrial exhibition
- Get Together
- Conference material
- Food and drinks during the breaks
- Young Scientist Chapter events***

*** undergraduate student, graduate student, PhD Candidates, PostDocs (< 5 years after graduation)

CERTIFICATES OF ATTENDANCE

Certificates of attendance can be picked up at the check-in on the last conference day.



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Sponsors and Exhibitors

Sponsor	Status
BPI	Goldsponsor
Cellink GmbH	Goldsponsor
EFRE	Goldsponsor
SunPBiotech	Goldsponsor
Merck KGaA	Bronzesponsor
SFB/TRR 225	Bronzesponsor & Lunchsymposium
Carl Zeiss AG	Sponsor
Dunn Labortechnik GmbH	Sponsor
AspectBiosystems Ltd.	Exhibitor
Biofluidix GmbH	Exhibitor
EnvisionTEC GmbH	Exhibitor
EXAKT Advanced Technologies GmbH	Exhibitor
Gesellschaft für Silizium-Mikrosysteme mbH	Exhibitor
IL Biosystems GmbH	Exhibitor
IOP	Exhibitor
MiltenyiBiotec GmbH	Exhibitor
Nanosurf GmbH	Exhibitor
Poietis	Exhibitor
RegenHULtd	Exhibitor



Social Program

GET TOGETHER

Come together for drinks and snacks to enjoy the evening. Allow yourself interesting conversations with colleagues, old friends, exhibitors and meet new acquaintances.

Date	Sunday, October 28
Time	18.00–22.00
Venue	Kulturspeicher
Fee	included in the conference fee

SPARKLING WINE RECEPTION AND CONFERENCE DINNER (ACCOMPANIED BY A WINE TASTING IN THE HISTORICAL WINE CELLAR OF THE RESIDENCE WÜRZBURG)

We would like to invite you to the Social Evening of the conference in the wine cellar “Staatlicher Hofkeller” of the Residence Würzburg. Learn more about the buildings historic past in the time-honoured rooms of the wine-growing estate. Enjoy the evening with Franconian cuisine and a wine tasting in a calm and sociable atmosphere.

Date	Tuesday, October 30
Time	17.30–23.00
Venue	Residence Palace Würzburg and Wine Cellar „Staatlicher Hofkeller“
Fee	90 EUR (can be booked during registration) – the number of seats is limited



Young Scientist Events

YOUNG SCIENTISTS EVENT: "MEET THE EDITOR"

This lunch symposium will focus on how to write a high impact scientific paper, with a particular intrinsic perspective of what publishers, editors and reviewers are seeking when making decisions on submitted manuscripts. A general overview of how to structure and write a scientific paper, as well as further steps of publishing a paper in the field of biofabrication, will be explained by experienced scientists from the editorial board, editors and publishers of the leading journal IOP Biofabrication (IF = 6.84). We are happy to announce that Dr. Antigoni Messaritaki, Prof. Dr. Tim Woodfield and Prof. Dr. Wei Sun will give short presentations and will be available for discussions.

YOUNG SCIENTISTS SCIENTIFIC SESSION

The scientific session will support young scientists by providing them a stage to disseminate their research. Each selected student will get a chance to present an 8 min talk. There will be time for questions and this session will be rounded up by a keynote talk given by Assoc. Prof. Dr. Ferry Melchels. Dr. Melchels' CV and his scientific contributions are an inspiring example for young scientists working in the field of biofabrication.

YOUNG SCIENTISTS SOCIAL EVENT

On Monday evening all young scientists are invited to a social event at the Waldschänke Dornheim. This will be a great opportunity to meet other young scientists working on biofabrication topics and to share experiences. Thanks to the ISBF, drinks and food will be included.

SFB/TRR 225 & YOUNG SCIENTISTS EVENT: "MEET THE LEGENDS"

This event is sponsored by the SFB/TRR 225, a German collaborative research center focusing on biofabrication. It will enable an open discussion with senior researchers, a chance to share ideas and to get input from experienced leaders in the field of biofabrication. There will be a limited number of slots for interested participants. Information will be available at the registration desk.

YOUNG SCIENTISTS EVENT: "CAREER SESSION"

As many students struggle with the decision "what shall I do after graduation?", this event will offer the possibility to communicate with representatives from university and industry and also with those who have experienced both professions. After an introduction of the speakers and short presentations of their CVs along with the decisions they made during their career, there will be time for questions and an open discussion.



Invited Speakers

PLENARY SPEAKERS

Prof. Dr. Matthias Lutolf

Laboratory of Stem Cell Bioengineering
Institute of Bioengineering
School of Life Sciences (SV) and School
of Engineering (STI), Ecole Polytechnique
Fédérale de Lausanne (EPFL)
Lausanne, Switzerland

Prof. Dr. Jason Burdick

Department of Bioengineering,
University of Pennsylvania,
Philadelphia, USA

Prof. Dr. Brian Derby

School of Materials
University of Manchester,
Manchester, UK

Prof. Dr. Fiona Wood

Fiona Wood Foundation
Fiona Stanley Hospital Perth, Australia
Burns Service of Western Australia,
Fiona Stanley Hospital,
Perth, Australia

KEYNOTE SPEAKERS

Prof. Dr. Ir. Jos Malda

Department of Equine Sciences,
Faculty of Veterinary Medicine, Utrecht
University, Utrecht, Netherlands
Department of Orthopaedics, University
Medical Center Utrecht
Utrecht, Netherlands

Prof. Dr. Wojciech Świąszkowski

Faculty of Materials Science and
Engineering,
Warsaw University of Technology,
Warsaw, Poland

Prof. Dr. Paul Gatenholm

Wallenberg Wood Science Center and
Biopolymer Technology,
Department of Chemistry and Chemical
Engineering, Chalmers University of
Technology,
Gothenburg, Sweden

Prof. Dr. James Yoo

Wake-Forest Institute for Regenerative
Medicine,
Winston-Salem, USA

Prof. Dr. Koichi Nakayama

Department of Regenerative Medicine
and Biomedical Engineering,
Saga University,
Saga City, Japan

Prof. Dr. Vladimir Mironov

Chief Scientific Office
3D Bioprinting Solutions
Leading scientist
Regenerative Medicine Institute,
Sechenov Moscow Medical University,
Moscow, Russia



Invited Speakers

Prof. Dr. Monica Laronda

Division of Reproductive Science in
Medicine, Department of Obstetrics and
Gynecology,
Feinberg School of Medicine,
Northwestern University,
Chicago, USA

Prof. Dr. Heungsoo Shin

Department of Bioengineering,
Hanyang University,
Seoul, South Korea

Prof. Dr. Tim Woodfield

Christchurch Regenerative Medicine and
Tissue Engineering (CReaTE) Group,
Department of Orthopaedic Surgery
and Centre for Bioengineering &
Nanomedicine, University of Otago,
Christchurch, New Zealand.

Assoc. Prof. Dr. Sarah Heilshorn

Department of Materials Science and
Engineering,
Stanford University,
Stanford, USA

Prof. Dr. Gabor Forgacs

Department of Physics, Biology and
Biomedical Engineering,
University of Missouri,
Columbia, USA

Dr. Fabien Guillemot

Tissue Bioengineering,
University of Bordeaux,
Bordeaux, France
Poietis, Pessac, France

Prof. Dr. Gordon Wallace

ARC Centre of Excellence for
Electromaterials Science,
Intelligent Polymer Research Institute,
University of Wollongong,
Wollongong, Australia

PD Dr. Gereon Hüttmann

Institute of Biomedical Optics,
University of Lübeck,
Lübeck, Germany

Prof. Dr. Hala Zreiqat

Biomaterials and Tissue Engineering
Research Unit, School of Aerospace,
Mechanical and Mechatronic
Engineering,
University of Sydney,
Sydney, Australia

Prof. Dr. Paul Dalton

Department for Functional Materials in
Medicine and Dentistry,
University of Würzburg,
Würzburg, Germany

Assoc. Prof. Dr. Ferry Melchels

School of Engineering & Physical
Sciences, Institute of Biological
Chemistry, Biophysics and
Bioengineering
Heriot Watt University
Edinburgh, Scotland, United Kingdom



SPEAKERS SPECIAL SESSION "BIOFABRICATION IN GERMANY"

Prof. Dr. Aldo Boccaccini

Institute of Biomaterials
Department of Materials Science and
Engineering
University of Erlangen-Nuremberg
Erlangen, Germany

Prof. Dr. Boris Chichkov

Laser Zentrum Hannover e.V.
Hannover, Germany

Prof. Dr. Horst Fischer

Universitätsklinikum RWTH Aachen
Zahnärztliche Werkstoffkunde und
Biomaterialforschung (ZWBF)
Aachen, Germany

Prof. Dr. Michael Gelinsky

Zentrum fuer Translationale
Knochen-, Gelenk- und
Weichgewebeforschung
Universitaetsklinikum Carl Gustav
Carus und Medizinische Fakultät der
Technischen Universität Dresden
Dresden Germany

Prof. Dr. Leonid Ionov

Faculty of Engineering Science -
Biofabrication
University of Bayreuth
Bayreuth, Germany

Dr. Peter Koltay

Institut für Mikrosystemtechnik - IMTEK
microTEC Südwest e.V. Freiburg, Germany
Universität Freiburg
Institut für Mikrosystemtechnik – IMTEK
Freiburg, Germany



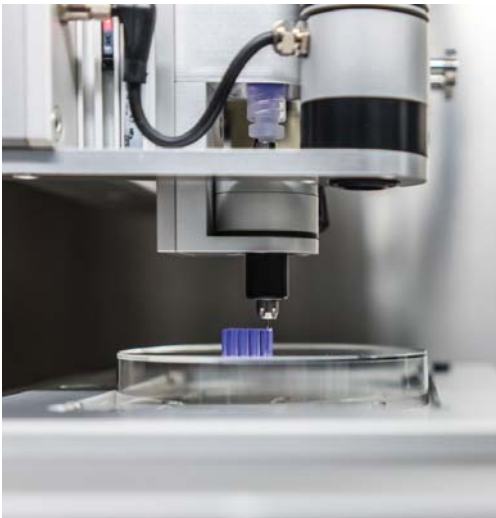
EFRE-Bio3D Print

This project is focused on transferring technology to small and medium sized enterprises in Bavaria with the aim to position them early in these fresh and evolving markets.

The technology transfer is focused on 3D Bioprinting as well as Melt Electrowriting and comprises three levels:

- Digitalisation and software development
- Hardware components and plant engineering
- Material development

The network is constantly open for interested new industry partners!
















Supported by the European Regional Development Fund
Strengthening of research, technological development and innovation
Technology transfer University - small and medium-sized businesses



European Union

European Regional
Development Fund

	Room: Franconia-Saal	Room: Panorama 1	Room: Panorama 2
8.00	Registration: Open all 3 days		
8.15			
8.30	Opening Ceremony		
8.45			
9.00	Plenary Lecture: I-01 Biofabrication: Looking back and looking forward, Brian Derby 		
9.15			
9.30	Coffee Break (Industry Exhibition) 		
9.45			
10.00	Session 1: Bioinks	Session 2: Musculoskeletal Applications	Session 3: Cell containing Building Blocks
10.15	Keynote: I-02 Adaptable Hydrogels as Custom Bioinks, Sarah Heilshorn	Keynote: I-03 Osteochondral Bioprinting, Jos Malda	Keynote: I-04 3D Bioassembly of modular tissue spheroids and bioinks, Tim Woodfield
10.30			
10.45			
11.00	Lunch Break (Industry Exhibition)		
11.15			
11.30	Lunchsymposium SFB/TRR 225 "Biofabrication"		
11.45			
12.00	Plenary Lecture: I-05 Designing Bioinks for Bioprinting, Jason Burdick 		
12.15			
12.30			
12.45			
13.00	Session 4: Bioinks	Session 5: Musculoskeletal Applications	Session 6: Biofabrication in Germany
13.15	Keynote: I-06 Suspended Manufacturing of Low Viscosity Bioinks, Megan Cooke	Keynote: I-07 Innovative materials and bioengineering of musculoskeletal tissues, Hala Zreiqat	
13.30			
13.45			
14.00	Coffee Break (Industry Exhibition) 		
14.15			
14.30	Session 7: Bioinks	Session 8: Young Scientists Chapter – Scientific Session	Session 9: Cell containing Building Blocks
14.45	Keynote: I-14 In-vitro and in-vivo Evaluation of Bioprinting, Wojciech Świąszkowski	Keynote: I-15 Biomaterials for Biofabrication, Ferry Melchels	Keynote: I-16 Surface-functionalized materials for biofabrication of musculoskeletal tissue, Heungsoo Shin
15.00			
15.15			
15.30	General Assembly Meeting		
15.45			
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19.15			
19.30	Young Scientists Chapter – Social Event (Waldschänke Dornheim) 		
23.00			



Monday, 29.10.2018

MONDAY 29/10/2018

08.30 – 09.00 Opening Ceremony*Room: Franconia-Saal***09.00 – 09.45 Plenary lecture***Room: Franconia-Saal*

Chair: Jürgen Groll

**I-01 Biofabrication: Looking back and looking forward
Brian Derby****09.45 – 10.15 Coffee break (Industry Exhibition)****10.15 – 11.45 Session 1: Bioinks***Room: Franconia-Saal*

Chairs: Jason Burdick, Khoon Lim

**Keynote: I-02 Adaptable Hydrogels as Custom Bioinks
Sarah Heilshorn**

O-01 Spatiotemporal Functionalization of Biofabricated Constructs via Cytocompatible Supramolecular Complexation

Tom Kamperman

O-02 Pseudo-polypeptides forming thermoresponsive, biocompatible bioinks

Robert Luxenhofer

O-03 Combining the Versatility of Polyurethane Chemistry and 3D Bioprinting to Design Tissue Engineered Scaffolds

Stephano Calzone

O-04 3D bioprinting of cell-laden molecularly engineered PEG-based hydrogels

Bahattin Koc



10.15 – 11.45

Session 2: Musculoskeletal Applications

Room: Panorama 1

Chairs: Hala Zreiqat, Riccardo Levato

Keynote: I-03 Osteochondral Bioprinting Jos Malda

O-05 Towards Bioprinting of vascularized Bone Tissue

Petra Kluger

O-85 Nanocomposite Bioink for Ex Vivo and In Vivo Evaluation of Bone Tissue Regeneration

Gianluca Cidonio

O-07 Volume -By -Volume Bioprinting of High Temperature Thermoplastics for Cartilage Regeneration

José Manuel Baena

O-08 3D Printing of Scaffolds for Meniscus Tissue Engineering - Mimicking Function through Structure

Stefan Scheurer



10.15 – 11.45

Session 3: Cell containing Building Blocks

Room: Panorama 2

Chairs: Vladimir Mironov, Anja Lode

Keynote: I-04 3D Bioassembly of modular tissue spheroids and bioinks: strategies for Biofabrication of the musculoskeletal tissue niche and high throughput screening Tim Woodfield

O-09 Drop-on-Demand Bioprinting Process for Single-Spheroid Deposition and Immobilization

Kevin Tröndle

O-10 Formative Biofabrication: From Scaffold to Scaffold.

Elena A. Bulanova

O-11 Pre-set extrusion bioprinting for multiscale heterogenous tissue structure fabrication

Donggu Kang

O-12 Bioprinting Magnetic Bioinks with Characteristic Collagen Signatures and Ionically Reinforced Hydrogels as a Translational Strategy for Cartilage Tissue Engineering

Daniela F. Duarte Campos



Monday 29/10/2018

**11.45 – 13.00****Lunch break (Industry Exhibition)****12.30 – 13.00****Lunchsymposium SFB/TRR 225 “Biofabrication”***Room: Panorama I*

SFB/TRR 225 “From the fundamentals of biofabrication towards functional tissue models”

**13.00 – 13.45****Plenary Lecture***Room: Franconia-Saal*

Chair Jos Malda

I-05 Designing Bioinks for Bioprinting**Jason Burdick****13.45 – 15.15****Session 4: Bioinks***Room: Franconia-Saal*

Chairs: Christopher B. Highley, Ferry Melchels

Keynote: I-06 Suspended Manufacturing of Low Viscosity Bioinks**Megan Cooke**

O-13 Photo Clickable Allylated Gelatin and Thiolated Heparin as Chondro Instructive Bioinks for 3D-Biofabrication

Gabriella Lindberg

O-14 Thiolated Crosslinker effect on Physico-Chemical properties and Laser-Based Processing of Gelatin Thiol-ene Hydrogels

Jasper Van Hoorick

O-15 INNO V GEL: A biocompatible injectable hydrogel as an innovative solution for cell engineering and regenerative medicine

Marlène Rippe

O-16 A Tyramine-Modified Hyaluronan Bioink with Double Gelation Mechanism for Independent Tuning of Shear-Thinning and Post-Printing Curing

Matteo D'Este



13.45 – 15.15

Session 5: Musculoskeletal Applications

Room: *Panorama 1*

Chairs: Jos Malda, Daniela F. Duarte Campos

Keynote: I-07 Innovative materials and bioengineering of musculoskeletal tissues

Hala Zreiqat

O-17 Strontium-based nanocomposite bioink for 3D-bioprinting of scaffolds with long-term shape retention and improved osteogenic differentiation of mesenchymal stromal cells

Cesar Alcala Orozco

O-18 3D-Plotting of Multiphasic Osteochondral Constructs based on a CaP Cement and a Chondrocyte-laden Hydrogel

David Kilian

O-19 Nanocomposite Hydrogels of Agarose/Nanosilicates for 3D Bioprinting Applications

Ali Nadernezhad

O-20 Effects of Freezing and Thawing on Cell Viability of Bioprinted Bone Constructs

Edgar B. Montufar



13.45 – 15.15

Session 6: Biofabrication in Germany

Room: *Panorama 2*

Chair: Jürgen Groll

I-08 Towards a generic 3D-Bioprinting Platform

Peter Koltay

I-09 Materials and methods for additive manufacturing of biomaterial scaffolds and tissue constructs

Michael Gelinsky

I-10 Development of composite bioinks incorporating bioactive inorganic particles

Aldo Boccaccini

I-11 Biofabrication in 3D and 4D

Horst Fischer

I-12 4D Biofabrication by Shape-Morphing Polymers

Leonid Ionov

I-13 Laser printing of biomaterials and living cells

Boris Chichkov



Monday 29/10/2018



15:15 – 16.00

Coffee Break (Industry Exhibition)

16.00 – 17.30

Session 7: Bioinks*Room: Franconia-Saal*

Chairs: Sarah Heilshorn, Christopher B. Highley

Keynote: I-14 In-vitro and in-vivo Evaluation of Bioprinting Wojciech Świąszkowski

O-21 3D Printing of Cartilage with High Printing Fidelity utilizing Nanocomposite Bioink comprising Cationic Nanoparticles and Anionic Polysaccharides

Mihyun Lee

O-99 Supramolecular biofabrication of hierarchically mineralised structures

Alvaro Mata

O-23 Advanced bioink formulations: challenging the hydrogel dilemma in 3D - bioprinting

Andreas Blaeser

O-24 A Quiescently Gelled Gelatin Supportive Medium to Facilitate 3D Biofabrication

Ian Mackenzie

16.00 – 17.30

Session 8: Young Scientists Chapter – Scientific Session*Room: Panorama I*

Chairs: Khoon Lim, Tomasz Jüngst

Keynote: I-15 Biomaterials for Biofabrication Ferry Melchels

O-25 Development of a Novel Photo-crosslinkable, Tissue-specific, Extracellular Matrix Bioink for Elastic Cartilage Bioprinting

*Dafydd Visscher*O-26 Complex Bioassemblies of Cartilage Intermediate μ Tissues Maintain Spatial Properties In Vivo*Gabriella Nilsson Hall*

O-27 3-D bioprinted human omentum model: Imitation of the mesothelial cell layer and its microenvironment

Manuela Estermann

O-28 A Double Take on Temperature: MEW Processing with Two Stage Heating

Paul Wieringa

O-29 3D Bioprinting of Functional Islets of Langerhans in Alginate-based Hydrogels

Sarah Duin

O-30 3D Bioprinting of Mineralized Tissue Equivalents – Combination of a Calcium Phosphate Cement with Different Bioinks

Tilman Ahlfeld



16.00 – 17.30

Session 9: Cell containing Building Blocks

Room: Panorama 2

Chair: Gabor Forgacs, Peter Koltay

Keynote: I-16 Surface-functionalized materials for biofabrication of musculoskeletal tissue
Heungsoo Shin

O-31 Scaffold free Ligament Structures produced by using BioThree-dimensional Printer.

Daiki Murata

O-32 Enhancement of OATP Activity in ECM-loaded Hepatic Multicellular Spheroids

Nobuhiko Kojima

O-33 Production of Mesenchymal Stromal Cell Aggregates via Micro Valve Deposition

Joseph Dudman

O-34 Single-cell High Throughput (SCHT) 3D bio-printing platform

Yu-Han Ho

17:30 – 19:00

General Assembly Meeting

Room: Franconia-Saal



















19:30 – 23:00

Young Scientists Chapter – Social Event

Waldschänke Dornheim



Tuesday, 30.10.2018

	Room: Franconia-Saal	Room: Panorama 1	Room: Panorama 2
8.00	Plenary Lecture: I-17 Converting organoids into functional mini-organs through biofabr. , Matthias Lutolf 		
8.15			
8.30			
8.45	Session 10: Vascularization Approaches 	Session 11: Biofabrication and Cancer 	Session 12: Droplet Based Bioprinting Approaches 
9.00			
9.15			
9.30			
9.45	Coffee Break (Industry Exhibition) 		
10.00			
10.15	Session 13: Cell containing Building Blocks Keynote: I-18 Cell spheroids as building blocks for organ printing, Vladimir Mironov 	Session 14: Melt Electrowriting Keynote: I-19 Electrowriting: Bridging the Divide between 3D Printing and Electrospinning, Paul Dalton 	Session 15: Light-based Approaches for Imaging and Fabrication Keynote: I-20 Label-free imaging and process control in biofabrication by optical coherence tomography (OCT), Gereon Hüttmann 
10.30			
10.45			
11.00			
11.15			
11.30			
11.45	Lunch Break (Industry Exhibition) 	Young Scientists Event: "Meet the Editor" 	
12.00			
12.15			
12.30			
12.45			
13.00	Session 16: Cell containing Building Blocks Keynote: I-21 The Kenzan method: from bench to bedside, Koichi Nakayama 	Session 17: Biofabrication and Cancer Keynote: I-22 3D printed functional ovary for oncofertility, Monica Laronda 	Session 18: Novel Fabrication Approaches Keynote: I-23 Customised Printers to Create Customised Structures for Clinical Applications, Gordon Wallace 
13.15			
13.30			
13.45			
14.00			
14.15			
14.30	Poster Session 16.15 - 16.30 Award Ceremony - 3D Bioprinting Solutions Young Investigators Poster Award for "Innovations in Bioint Development" 	SFB/TRR 225 & Young Scientists event "meet the legends" Keynote: I-15 Biomaterials for Biofabrication, Ferry Melchels 	
14.45			
15.00			
15.15			
15.30			
15.45			
16.00			
16.15			
16.30			
16.45			
17.00	Sparkling wine Reception and Conference Dinner (Residenz Palace Würzburg) 		
17.15			
17.30			
23.00			



TUESDAY, 30.10.2018

**08.00 – 08.45 Plenary Lecture***Room: Franconia-Saal*

Chair: Michael Gelinsky

I-17 Converting organoids into functional mini-organs through biofabrication
Matthias Lutolf
**08.45 – 09.45 Session 10: Vascularization Approaches***Room: Franconia-Saal*

Chair: Michael Gelinsky, Debby Gawlitta

O-35 Engineering of Vessel Grafts using Alginate di-aldehyde–Gelatin Bioinks

Rainer Detsch

O-36 Bioinspired Engineering of Bi-layered Electrospun Blood Vessels

Iris Pennings

O-37 Direct Prevascularization of Tissue Engineered Constructs via Melt Electrowriting of Thermoresponsive Poly-Oxazolines

Matthias Ryma

O-38 On-Chip Two-Photon Polymerization of Vascular Structures

Agnes Dobos**08.45 – 09.45 Session 11: Biofabrication and Cancer***Room: Panorama I*

Chair: Monica Laronda, Tim Woodfield

O-39 Tumor-on-a-chip microfluidic devices for personalized cancer drug testing

Shiny Rajan

O-40 3D bioprinted glioma stem cells for glioma vascularization

Xuanzhi Wang

O-41 Maturation of a Bioprinted Multicellular Glioblastoma Model

Nathalie Dusserre

O-42 Development of a Tumor- Like Lung Cancer Model Based on 3D Bioprinting

Xiong Wang

Tuesday, 30.10.2018

**08.45 – 09.45 Session 12: Droplet Based Bioprinting Approaches***Room: Panorama 2*

Chair: Brian Derby, Andreas Blaeser

O-43 Multicomponent Inkjet Printing of Cell-Instructive Hydrogels for Tissue Engineering

Ralf Zimmermann

O-44 Reactive Jet Impingement Process for Drop on Demand Printing of High Cell Density Gels

Kenneth Dalgarno

O-45 Inkjet-Spray Hybrid Printing for 3D Freeform Fabrication of Multilayered Hydrogel Structures

Sungjune Jung

O-46 Piezoelectric Drop-on-Demand 3D Bioprinting for Cell-Laden High Viscosity Thermosensitive Hydrogel

Huixuan Zhu**09.45 - 10.15****Coffee Break (Industry Exhibition)****10.15 – 11.45****Session 13: Cell containing Building Blocks***Room: Franconia-Saal*

Chair: Koichi Nakayama, Marcy Zenobi-Wong

Keynote: I-18 Cell spheroids as building blocks for organ printing
Vladimir Mironov

O-47 Development of aligned cell-laden hydrogel yarns astendon tissue model

Chiara Rinoldi

O-48 Fabrication of cell fibers with hollow alginate hydrogel molds for bio assembly of large-sized tissues and organs

Takuya Muroe

O-49 Using sound for cell assembling: 3D Sound Induced Morphogenesis, 3D-SIM

Tiziano Serra

O-50 Biofabrication of stem cell spheroids for vascularized bone regeneration

Jinkyu Lee



10.15 – 11.45

Session 14: Melt Electrowriting

Room: Panorama 1

Chair: Lorenzo Moroni, Tomasz Jüngst

Keynote: I-19 Electrowriting: Bridging the Divide between 3D Printing and Electrospinning
Paul Dalton

O-51 Melt electro writing of ultra- stretchable micro- structured fibre scaffolds for human myocardial tissue engineering

Miguel Castilho

O-52 Highly Organized Osteochondral implant: a multi - scale, single- step bio fabrication process

Mylène de Ruijter

O-53 Thermally Stable and Photo-Cross-Linkable Copolymers for Melt Electrospinning Writing Applications

Brian Amsden

O-54 Melt Electrostatic Writing of a Human Trabecular Meshwork

Malgorzata Wlodarczyk-Biegun



10.15 – 11.45

Session 15: Light-based Approaches for Imaging and Fabrication

Room: Panorama 2

Chair: Boris Chichkov, Camelo De Maria

Keynote: I-20 Label-free imaging and process control in biofabrication by optical coherence tomography (OCT)
Gereon Hüttmann

O-55 Monitoring of 3D Vascular Networks Produced by Geometrical Regulation of Angiogenesis using Optical Coherence Tomography

Yujin Ahn

O-56 Behaviour of Stem Cells from the Apical Papilla with BioRoot RCS cement in a Laser- Assisted Bioprinted model

Deborah Roth



Tuesday, 30.10.2018

O-57 Laser Bioprinting of Human Induced Pluripotent Stem Cells with Different Biomaterials

Lothar Koch

O-58 Gelatin-based bio-resins for biofabrication of cell-laden constructs with perfusable three-dimensional convoluted channels via digital light processing

Riccardo Levato



11.45 – 13.00

Lunch (Industry Exhibition)



12.15 – 13.00

Young Scientists Event: “Meet the Editor”

Room: Panorama I



13.00 – 14.30

Session 16: Cell containing Building Blocks

Room: Franconia-Saal

Chair: Heungsoo Shin, Bahattin Koc

Keynote: I-21 The Kenzan method: from bench to bedside Koichi Nakayama

O-59 Healing of Long-bone Critical Size Defects with μ Tissue Assemblies

Ioannis Papantoniou

O-60 Biofabrication of perfusable hepatocyte constructs and artificial bile ducts

Kerstin Schneeberger

O-61 3D cell printing of implantable vascularized pancreatic construct using tissue-specific bioink and islet for T1D

Jaewook Kim

O-62 Bioprinting of Non-Mammalian Cells: Chances and Challenges

Anja Lode





13.00 – 14.30

Session 17: Biofabrication and Cancer*Room: Panorama 1*

Chair: Anja Bosserhoff, Liliang Ouyang

**Keynote: I-22 3D printed functional ovary for oncofertility
Monica Laronda**

O-63 Peptide-Protein Self-Assembling Bioink for Tumour Spheroid Development: Towards mimicking the Ovarian Cancer Microenvironment

Clara Louise Hedegaard

O-64 3D Bioassembly of Physiologically Relevant Breast Cancer Models

Khoo Lim

O-65 Bioprinted models of the tumor microenvironment: in vivo evaluation and computer simulations

Adrian Neagu

O-66 Fabrication of a bioprinted endosteal and perivascular bone marrow niche model for multiple myeloma

Maaike V.J. Braham

13.00 – 14.30

Session 18: Novel Fabrication Approaches*Room: Panorama 2*

Chair: Hyun-Wook Kang, Gregor Lang

**Keynote: I-23 Customised Printers to Create Customised Structures for Clinical Applications
Gordon Wallace**

O-67 Development of a dual air- brush/extrusion hand - held biopen

Daniel Nieto

O-68 3D bioprinting of hepatocytes co-culture systems – towards biofabrication of liver models

Rania Abdelgaber

O-69 Soft-Molecular Imprinting of Electrospun Scaffolds













Carmelo De Maria

O-70 Printable and degradable optical waveguides to deliver light inside the human body

Jun Feng

	14.30 – 16.30	Poster Session
	16.15 - 16.30	Award Ceremony - 3D Bioprinting Solutions Young Investigators Poster Award for "Innovations in Biopink Development"
	14.30 – 16.30	SFB/TRR 225 & Young Scientists event "meet the legends" – subscription necessary <i>Room: Panorama 1 and Panorama 2</i>
	17.30 - 23.00	Sparkling wine Reception and Conference Dinner <i>(Residenz Palace Würzburg)</i>



	Room: Franconia-Saal	Room: Panorama 1	Room: Panorama 2
8.00			
8.15			
8.30	Plenary Lecture: I-24 Spray on Skin Solutions – bringing basic science to the bedside, Fiona Wood 		
8.45			
9.00			
9.15			
9.30	Session 19: Liver tissue 	Session 20: Neural Cells 	Session 21: Skin 
9.45			
10.00	Coffee Break (Industry Exhibition) 		
10.15			
10.30	Session 22: Industry Session Keynote: I-25 Biofabricated leather, Gabor Forgacs	Session 23: Translational Biofabrication Keynote: I-26 Bioprinting: Translational Pathway to the Clinic, James Yoo	Session 24: Bioprinting and Stem Cells Keynote: I-27 3D Bioprinting with Adult Stem Cells. Translation to Clinic, Paul Gatenholm
10.45			
11.00			
11.15			
11.30			
11.45			
12.00	Lunch Break (Industry Exhibition)		
12.15			
12.30			
12.45			
13.00	Session 25: Industry Session Keynote: I-28 Tissue Manufacturing by Bioprinting: Challenges and Opportunities, Fabien Guillemot 	Session 26: Cardiac Tissue 	Session 27: Novell Approaches 
13.15			
13.30			
13.45			
14.00	Closing Ceremony		
14.15			
14.30	Departure		
14.45			

	Room: Panorama 3
10.30	
10.45	
11.00	Young Scientists Event: "Career session"
11.15	
11.30	
11.45	
12.00	



WEDNESDAY, 31.10.2018

**08.30 – 09.15 Plenary Lecture**

Room: Franconia-Saal

Chair: Paul Dalton

I-24 Spray on Skin Solutions – bringing basic science to the bedside.

Fiona Wood

**09.15 – 09.45 Session 19: Liver tissue**

Room: Franconia-Saal

Chair: Rainer Detsch

O-71 Biofabrication of functional tissue substitutes: endothelialized liver tissue and implantable cervix

Yuan Pang

O-72 Development of the 3D Liver-on-a-chip using Cell-printing and its Application as a Liver Fibrosis Model

Hyungseok Lee

**09.15 – 09.45 Session 20: Neural Cells**

Room: Panorama 1

Chair: Carmen Villmann

O-73 Neural signals detection in 3D bioprinting layered brain like structure

Yu Song

O-74 A Comparable Study on Neural Stem Cells in Different Biofabricated Microenvironments

Xinda Li

**09.15 – 09.45 Session 21: Skin**

Room: Panorama 2

Chair: Gordon Wallace

O-75 Rapid 3D printing of complex, vascularized scaffold with high resolution for skin regeneration

Feifei Zhou

O-76 Development of Ulvan-based Bioinks for Wound Healing Application

Xifang Chen





09.45 – 10.15 **Coffee Break (Industry Exhibition)**



10.45 – 11.45 **Young Scientists Event: "Career session"**

Room: Panorama 3



10.15 – 11.45 **Session 22: Industry Session**

Room: Franconia-Saal

Chair: Fabien Guillemot, Wei Sun

Keynote: I-25 Biofabricated leather
Gabor Forgacs

O-77 3D Bioprinted Human Tissue Models for Pharmaceutical and Cosmetic Product Testing

Itedale Namro Redwan, Cellink

O-78 Utilizing Tissue Fabrication Technologies for more than cells
Qudus Hamid, SunP

O-79 Recombinant Human Collagen as BioInk for 3D-Bioprinting
Revital Zarka, Collplant

O-80 Collagen Viscoll: a new Bioink for direct extrusion 3D Bioprinting
Egor O. Osidak, Imtek Ltd.



10.15 – 11.45 **Session 23: Translational Biofabrication**

Room: Panorama 1

Chair: Wojciech Świążkowski, Alvaro Mata

Keynote: I-26 Translational Pathway to the Clinic
James Yoo

O-81 In-Body Fabrication of "Biosheet" for Aortic Valve Reconstruction
Takeshi Terazawa

O-82 3D cell-printing of spatially graded patch for rotator cuff repair
Suhun Chae

O-83 Large-scale preparation of hair follicle germs using hydrogel bioprinting
Tatsuto Kageyama

O-84 3D cell printed pre-vascularized muscle tissue for functional muscle recovery in VML injuries
Yeong-Jin Choi



Wednesday, 31.10.2018

**10.15 – 11.45****Session 24: Bioprinting and Stem Cells***Room: Panorama 2*

Chair: Will Shu, Kerstin Schneeberger

**Keynote: I-27 Bioprinting with Adult Stem Cells.
Translation to Clinic
Paul Gatenholm**

O-06 Comparison of Serum-Containing Media and Serum-Free Media with Human Platelet Lysate for the Production of 3D Printed Poly(propylene fumarate) Tissue Engineered

David Dean

O-86 Influence of a Zonal Configuration of Constructs on Cartilage Repair: Results in a Long-Term Equine Model

Irina Mancini

O-87 Bioprinting Method of Vascularized Heterogeneous Cell-laden Tissue-like Structure

Heran Wang

O-88 Bioprinting of pluripotent stem cells

Rui Yao**11.45 – 12.45****Lunch (Industry Exhibition)****12.45 – 13.45****Session 25: Industry Session***Room: Franconia-Saal*

Chair: Tao Xu, Paul Gatenholm

**Keynote: I-28 Tissue Manufacturing by Bioprinting:
Challenges and Opportunities
Fabien Guillemot**

O-89 Classical Histology for Methylmethacrylates - Special and Standard Staining for Technovit 7200 and for Technovit 9100

Katrin Rohde, Morphisto

O-90 Ready to use bioink formulations for extrusion 3D bioprinting

Bryce Nelson, Merck



12.45 – 13.45

Session 26: Cardiac Tissue*Room: Panorama 1*

Chair: James Yoo, Miguel Castilho

O-91 3D Bioprinted Functional and Contractile Cardiac Tissue Constructs

Sang Jin Lee

O-92 Electroconductive Biofabricated Cardiac Tissue with Enhanced Biological and Functional Properties

Kaveh Roshanbinfar

O-93 Vascularized Myocardial Tissue Fabrication and a Multi-Functional Heart-on-a-chip Device

Ting Zhang

O-94 Combinatorial Therapeutic Approach Using 3D Printed Cardiac Patch with High Performance Genetically Engineered Stem Cells for Cardiac Repair

Sanskrita Das

12.45 – 13.45

Session 27: Novel Approaches*Room: Panorama 2*

Chair: David Dean, Tiziano Serra

O-95 Multi-material Bioprinting of Thermosensitive Hydrogels with Rapid On/Off Property Based on High-Precision Multi-Nozzle Extrusion Technology

Yanxu Hu

O-96 Comparative study of myogenic potential of mesenchymal stem cells from alveolar mucosa in 2D and 3D culture

Nastasia V. Kosheleva

O-97 Lab-on-a-Printer™ - a Unique Bioprinting Platform for the Rapid Fabrication of Functional Human Tissues on Demand

Tamer Mohamed, Aspect

O-98 GMP Manufacture of Electrospun Drug Delivery Products: a First Case Study

Thomas Hayes, Bioinicia

13.45 - 14.30

Closing Ceremony Room: Franconia-Saal

14.30 – 14.45

Departure

From the fundamentals of biofabrication towards functional

Content of the CRC/TRR 225 is the exploration of the fundamentals of biofabrication and its systematic exploitation with the aim and vision to generate functional human tissue models.

Uniklinikum  Würzburg

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Erlangen

Posters

- P-01 Online Measurement of Local Oxygen Distribution in 3D Bioprinted Constructs using O₂ SensinNanoparticle | Michael Gelinsky, Germany
- P-02 Development of a Hybrid Alginate-ECM Hydrogel as a Potential Bioink for 3D Bioprinting Pulmonary Tissue | Martina De Santis, Sweden
- P-03 Biofabrication of Micro Blood Vessel Network from Hydrogel Beads | Ding Weng, China
- P-04 Electrohydrodynamic printing of poly(ϵ -caprolactone)/zein composite scaffolds for 3D cell culture applications with improved bio-degradability and bio-compatibility | Linzhi Jing, China
- P-05 3D Printing of Hydrophilic Polymers: Fabrication of Microperiodic Hydrogel Scaffolds via Melt Electrowriting | Daniel Nahm, Germany
- P-06 „Can Fused Deposition Angle-Ply Scaffolds Replicate Multiaxial Annulus Fibrosus Mechanics? | Mitchell Page, USA Colorado
- P-07 Developing an Epithelial Model of Crohn’s Disease | Jennifer Huling, USA
- P-08 3D - electrochemical fabrication of complex collagen composites | Marius Berthel, Germany
- P-09 Intrinsic Vascularization of Recombinant eADF4(C16) Spider Silk fibrous matrices in the Arteriovenous Loop Model | Stefanie Heltmann-Meyer, Germany
- P-10 Encapsulation of mesenchymal stem cells improves vascularization of alginate-based scaffolds | Ajay Peddi, Germany
- P-11 Towards a Perusable Nephron Model Consisting of 3D Printed Hollow Hydrogel Fibers and a Microfluidic System | Akkineni Ashwini Rahul, Germany
- P-12 Biomimetic Thin Polycarbonate/Gelatin Membrane for Alveolar-capillary Barrier Application | Ali Doryab, Germany
- P-13 „Establishment and Characterization of a 3D Endometrial Epithelial Human Tissue Model for Studying Neisseria gonorrhoeae Infection., | Motaharehsadat Heydarian, Germany
- P-14 Versatility of Melt Electro-Writing for Biofabrication | Naomi Paxton, Australia
- P-15 Fabrication of a Biomimetic Neural Platform | Afonso Malheiro, Netherlands
- P-16 Clinical Relevant Bioinks for Enhanced Cartilaginous Matrix Deposition | Benjamin Kessel, Switzerland
- P-17 Cytotoxicity of Resorbable and Strong Mg-1.2Zn-0.5Ca-0.5Mn Skeletal Fixation Hardware | David Dean, USA
- P-18 3D Electrophoresis-Assisted Lithography (3DEAL): A New Fabrication Technique for Creating Complex and Anisotropic Functional Environments | Gastón A. Primo, UK
- P-19 Sensitized Two-Photon Micropatterning in Presence of Cells | Markus Lunzer, Austria



Posters

- P-20 Bioprinting strategies for the study of pancreatic cell plasticity related with cancer | Davit Hakobyan, France
- P-21 Biomimetic Design Strategy of 3D Bioprinted Tissue Construct for Craniofacial Bone Reconstruction | Sang Jin Lee, USA
- P-22 3D bioprinting of methylcellulose hydrogels for cell delivery applications | Nicola Contessi Negrini, Italy
- P-23 „Design and Implementation of a 3D PEG-Fibrinogen Hydrogel System for High-throughput Diagnostics and Cancer Cell growth Characterization“ | Tamara Birman, Israel
- P-24 In-Body Fabrication of Long “Biotube” Vascular Grafts with 50 cm Length | Yasuhide Nakayama, Japan
- P-25 Expansion culture of hair follicle stem cells while maintaining hair regeneration ability | Sugi Hirano, Japan
- P-26 „Bacterial nanocellulose stimulates mesenchymal stem cell expansion, differentiation and formation of stable collagen-I networks,, | Martin Vielreicher, Germany
- P-27 3D Printed Elastomers as Skeletal Muscle Tissue Substitute | Pinar Huri, Turkey
- P-28 Fabrication of collagen tubular structure for perfusable capillary-like network in vitro | Miki Sekine, Japan
- P-29 Fabrication of Biofibers from Viscous Sols | Bastian Christ, Germany
- P-30 „Non -Porous 3D Bioprinting Strategy for Vascular Tissue Fabrication,, | Liliang Ouyang, UK
- P-31 The Inks and Scaffolds from Natural Tissues | Qi Gu, China
- P-32 „3D - fibrous fibrinogen scaffolds “on demand”,, | Dorothea Brüggemann, Germany
- P-33 „Photo - clickable thiol- allyl gelatin bioinks offers a wider biofabrication window compared to thiol- norbornene chemistry,, | Bram George Soliman, New Zealand
- P-34 Photosensitive Hydrogel with Strong Adhesiveness for Broken Heart | Shufang Zhang, China
- P-35 Fabrication and In Vitro Characterization of Electrochemically Compacted Collagen/Sulfated Xylorhamnoglycuronan Matrix for Wound Healing Applications | Lingzhi Kamg, Australia
- P-36 Potentials of 3D Bioprinting for Space Exploration | Nieves Cubo Mateo, Germany
- P-37 A Molecular Dynamics Simulation for 3D-SIM, a Sound-Induced Biofabrication Technology | Daniele Pellicciotta , Switzerland
- P-38 „Improvement of mechanical properties of electrospun nanofibers using vapor treatment,, | Jeong Hwa Kim, Korea
- P-39 „The use of Skeletal Muscle-Derived Pericytes in Tissue Engineering of Skeletal Muscle Graft based on 3D Pluronic-Fibrinogen (FF-127) Hydrogel Environment,, | Raz Hamami, Israel
- P-40 Extrusion-based bioprinting of human subcutis equivalents | Ann-Cathrin Volz, Germany



- P-41 Development of 3D Human Skin Equivalents for Toxicity Testing and Bioprinting Fibroblasts | Mohammed M. Ahmed, UK
- P-42 High- Precision Single-Cell 3D Printing Based on Flow Cytometry with Sorting Method | Song Li, China
- P-43 Induced adipogenic hBMSC differentiation by geometrically defined 3D functionalized fiber scaffolds | Carina Blum, Germany
- P-44 „3D bioprinted GelMA bioink with high structural fidelity for skeletal muscle regeneration,, | Nehar Celikkin , Poland
- P-45 „3D printing of GelMA based hybrid hydrogel with high cell viability and well cell spreading,, | Kai Guo, China
- P-46 Design of 3D bioprinting protocol for thermo- and photo-sensitive bio-inks | Stefano Calzone, Singapore
- P-47 3D-Bioprinted Scaffolds with a Spatially Defined Factor Release System for Osteogenic Differentiation | Silvia Cometta, Germany
- P-48 Building 3D Architectures for Cardiomyocytes | Aylin Turgut, UK
- P-49 Two Compartment Culture Chamber for Perfusion of Bi-layered Vascular Grafts | Iris Pennings, Netherlands
- P-50 Electrofabrication: Enlisting Electrical Signals to Build Hydrogel Structure and Confer Redox Function | Gregory F. Payne, USA
- P-51 „Tunable Melanogenesis in Biopolymer Materials Enabled by Self -Assembling Monolayers,, | Josh Van Zak, USA
- P-52 Improved implant/host tissue integration of decellularized bovine pericardium matrix following cross-linking | Ekaterina Ivukina, Russia
- P-53 „Poly (glycerol sebacate) addition to 3D printed poly (ϵ -caprolactone) based scaffolds for cartilage regeneration: morphological, thermal and mechanical properties” | Pedro Gil Frade Morouço, Portugal
- P-54 „Design and Development of Self -Assembling Antibacterial Peptide Nano structures and Functional Materials,, | Lee Schnaider, USA
- P-55 Manufacturing of biologically active bone implants by extrusion 3D printing | Nasim Golafshan, Netherlands
- P-56 Protein disorder-order interplay to guide the growth of highly-ordered mineralized structures | Sherif Elsharkawy, UK
- P-57 Fabrication of cylindrical constructs using additive manufacturing for medical applications | Maxim Brodmerkel, Australia
- P-58 Graphene obtention and its possible applications on wastewater dies treatments | Juan Zarate, Colombia
- P-59 Monolithic photo-patterned 3D cell culture constructs with multiple domains for quantitative cancer cell motility and viability analysis in a microfluidic device | Shiny Rajan, USA
- P-60 Development of an In vitro Blood Brain Barrier Model | Tao Xu, China
- P-61 „Nanocellulose crystal production from waste fibers and its potential use in tissue engineering,, | Juan Zarate, Colombia

Posters

- P-62 3D Printed Calcium Silicate Scaffold with Phenol-inspired Surface Nanolayers for Bone Tissue Regeneration | Ming-You Shie, Taiwan
- P-63 „High Resolution 3D Printing of Recombinant Human Collagen Type III for Corneal Tissue Engineering„ | Rory Gibney, Belgium
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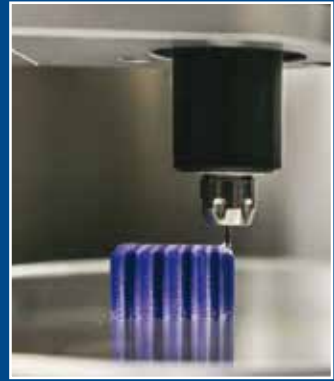
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