Biofabrication for Hierarchical in Vitro Tissue Models

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Editors:

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Tuesday, June 6, 2017

07:30 – 09:00	Breakfast
09:00 – 09:10	Opening and Introduction Co-Chairs: Jürgen Groll and Jos Malda ECI Technical Liaison: Aldo Boccaccini
09:10 – 09:50	**Biofabrication: Status quo of the field** .....N/A Jos Malda, University Medical Centre Utrecht, The Netherlands
10:00 – 12:30	**Morning Session: Fabrication of tissue models**
10:00 – 10:30	**Biofabrication of 3D hard-soft and composite constructs for bone regeneration** .....1 Aldo R. Boccaccini, University of Erlangen-Nuremberg, Germany; Tobias Zehnder, Rainer Detsch, University of Erlangen-Nuremberg, Germany
10:30 – 11:00	Coffee Break
11:00 – 11:30	**Extrusion-based bioprinting in musculoskeletal tissue engineering** .....2 Wojciech Swieszkowski, Warsaw University of Technology, Poland; Marco Costantini, Università Campus Bio-Medico di Roma, Italy; Joanna Idaszek, Alicja Kosik, Warsaw University of Technology, Poland
11:30 – 12:00	**Landmarks from kidney primordia for organ printing strategies** .....3 Seppo Vainio, Biocenter Oulu & InfoTech Oulu, Oulu University, Finland
12:00 – 12:30	**Integrating cell sheets for kidney-on-a-chip applications .....4** William Loewenhardt, University of Manchester, United Kingdom; Sahithi Kuravi, Rachel E. Saunders, Rachel Lennon, Brian Derby, University of Manchester, United Kingdom
12:30 – 14:00	Lunch
14:00 – 16:00	**Afternoon Session: Fabrication technologies**
14:00 – 14:30	**Development of injet printing technology for the biofabrication of in vitro 3D tissues .....N/A** Waka Lin, Shigeo Hatada, Aino Hasegawa, Shiomoto Shusaku, Shunpei Kamono, Daisuke Takegi, Ricoh Company, Ltd.
14:30 – 15:00	**Multiphoton lithography of 3D hydrogel structures within microfluidic chips** .....5 Aleksandr Ovsianikov, Vienna University of Technology, Austria
15:00 – 15:30	**Laser printing of biomaterials and living cells**.....N/A Boris Chichkov, Leibniz University Hannover and Laser Zentrum Hannover e.V., Germany
15:30 – 16:00	**Melt electrospinning writing and the biofabrication of voluminous tissues and organs .....6** Paul Dalton, University of Wurzburg, Germany
16:00 – 16:30	Coffee break and networking

Tuesday, June 6, 2017 (continued)

16:30 - 17:00	**Biofabrication for TERM – A FET flagship initiative** .....N/A Jos Malda, University Medical Centre Utrecht, The Netherlands
17:00 – 18:00	**Plenary discussion: European perspectives on biofabrication, TE and RM: Societies, networks and common preparation of funding opportunities**
18:00 – 19:00	Networking
19:00	Dinner followed by social period

Wednesday, June 7, 2017

07:30 – 09:00	Breakfast
09:00 – 12:00	**Morning Session: Bioinks**
09:00 – 09:30	**Intelligent hydrogel design: Towards more performing hydrogel processing** .....7 Sandra Van Vlierberghe, Ghent University, Belgium; Annemie Houben, Jasper Van Hoorick, Heidi Declercq, Peter Dubruel, Ghent University, Belgium; Aleksandr Ovsianikov, Peter Gruber, Marica Markovic, Vienna University of Technology, Austria; Penny Martens, The University of New South Wales, Australia; Patrice Roose, Hugues Van Den Bergen, Dirk Bontinck, Allnex, Belgium
09:30 – 10:00	**Biofabrication using recombinant spider silk proteins as a biomaterial** .....8 Tamara B. Aigner, University of Bayreuth, Germany; Elise K. DeSimone, Thomas Scheibel, University of Bayreuth, Germany
10:00 – 10:30	**Medical adhesives for 3D printing** .....24 Malgorzata K. Wlodarczyk-Biegun, Leibniz Institute for New Materials, Saarbrucken, Germany; Julieta Paez, Maria Villiou, Aranzazu del Campo, Leibniz Institute for New Materials, Saarbrucken, Germany
10:30 – 11:00	Coffee Break
11:00 – 11:30	**Control of cross-linking density in bioinks and integration of nanotechnology** .....25 Jürgen Groll, University of Würzburg, Germany
11:30 – 12:00	**A self-assembly based supramolecular bioink with hierarchical control As a new bioprinting tool** .....26 Clara L. Hedegaard, Queen Mary University of London, United Kingdom; Estelle Collin, Carlos Redondo-Gomez, J. Rafael Castrejón-Pita, Alvaro Mata, Queen Mary University of London, United Kingdom; Kee Woei Ng, Nanyang Technological University, Singapore, Alfonso A. Castrejón-Pita, University of Oxford, United Kingdom
12:00 – 12:30	Discussion/Networking
12:30 - 14:00	Lunch
14:00 – 15:00	Tour of historic Schloss Hernstein – conducted by Peter Glaser (Please meet at lobby reception at 14:00)
15:00 --15:30	Networking
15:30 - 16:00	Afternoon Coffee
16:00 - 17:30	**Afternoon Session: Bioink Assessment**

Wednesday, June 7, 2017 (continued)

16:00 – 16:30 **Tensiometric estimation of material properties of tissue spheroids** 27
Vladimir Mironov, 3D Bioprinting Solutions, Russia; Karalkin P., Bulanova E., Koudan E., Pereira F., Gryadunova A., Knyaseva A., Hesuani Yu., Mironov V.0, 3D Bioprinting Solutions, Russia; Kasyanov V, Riga Stradins University & Riga Technical University, Latvia; Chernikov V, Institute of Human Morphology of Russian Academy of Science, Russia; Korneva J., I. D. Papanin Institute for Biology of Inland Waters of Russian Academy of Science, Russia

16:30 – 17:00 **Two-step screening process to evaluate printability of inks for extrusion-based bioprinting** 28
Tomasz Jüngst, University of Würzburg, Germany; Naomi Paxton, Willi Smolan, Jürgen Groll, University of Würzburg, Germany

17:00 – 17:30 **Evaluation of bioink printability with quantitative methods to aid material development** 29
Lotte Groen, Alexandre Ribeiro, University Medical Center Utrecht, The Netherlands; Maarten Blokzijl, Wim Hennink, Tina Vermonden, Utrecht University, The Netherlands; Riccardo Levato, Miguel Castilho, Jos Malda, University Medical Center Utrecht, The Netherlands

17:30 – 19:00 Poster presentations

19:00 – 19:30 Free time for networking

19:30 Dinner followed by social period

Thursday, June 8, 2017

07:30 – 09:00	Breakfast
09:00 – 11:45	**Morning Session: In Vitro Tissue Models**
09:00 – 09:45	**Complex and patient-specific scaffolds and tissue engineering constructs by extrusion-based 3D (bio) printing** .....30 Michael Gelinsky, Technische Universität Dresden, Germany
09:45 – 10:15	**Bioprinting of vascularized bone tissue equivalents** .....31 Petra J. Kluger, Fraunhofer Institute for Interfacial Engineering and Biotechnology and Reutlingen University, Germany; Annika Wenz, University of Stuttgart, Germany ; Iva Tjoeng, Julia Rogal, Kirsten Borchers, Fraunhofer Institute for Interfacial Engineering and Biotechnology, Germany
10:15 – 10:45	Coffee Break
10:45 – 11:15	**Suspended manufacture of biological structures** .....32 Megan Cooke, University of Birmingham, United Kingdom; Samuel Moxon, University of Manchester, United Kingdom; Sophie Cox, Simon Jones, Liam Grover, University of Birmingham, United Kingdom; Martyn Snow, Lee Jeys, Royal Orthopaedic Hospital, United Kingdom; Alan Smith, University of Huddersfield, United Kingdom
11:15 – 11:45	**Application of different cell populations in hydrogel bioinks for zonal .....33 Cartilage biofabrication** Iris Otto, University Medical Center Utrecht, The Netherlands; Riccardo Levato, University Medical Center Utrecht, The Netherlands; Richard Webb, Ilyas Khan, Swansea University, United Kingdom; René van Weeren, Utrecht University, The Netherlands; Jos Malda, University Medical Center Utrecht and Utrecht University, The Netherlands
12:00	Pick up boxed lunches and maps of Vienna in hotel reception (No served lunch today)
12:15 – 18:00	Excursion to Vienna
18:30 - 19:30	Poster session (with afternoon coffee)
20:00	Dinner followed by social hour

Friday, June 9, 2017

07:30 - 09:00	Breakfast
09:00 – 12:00	**Morning Session: New Technologies and Outlook**
09:00 – 09:30	**3D-microfibers improve the shear modulus of hydrogel composites** .....34 Mylène de Ruijter, University Medical Center Utrecht, The Netherlands; Andrei Hrynevich, Jodie N. Haigh, Gernot Hochleitner, Jürgen Groll, Paul D. Dalton, University of Würzburg, Germany; Miguel D. Castilho, Jos Malda, University Medical Center Utrecht, The Netherlands
09:30 – 10:00	**Changing the diameter of 3D printed tissue engineering scaffolds made via melt electrospinning writing .....35** Andrei Hrynevich, University of Würzburg, Germany; B. Şen Elçi, G. Hochleitner, Jodie N. Haigh, J. Groll, P. D. Dalton, University of Würzburg, Germany
10:00 – 10:30	Coffee break
10:30 – 10:45	Bring luggage to storage area by hotel reception
10:45 – 11:15	**A multiangular approach towards biofabrication of an auricular cartilage implant .....36** Iris Otto, University Medical Center Utrecht, The Netherlands; Riccardo Levato, Corstiaan Breugem, Moshe Kon, University Medical Center Utrecht, The Netherlands; Jos Malda, University Medical Center Utrecht and Utrecht University, The Netherlands.
11:15 – 11:45	**Visions for the field by a pioneer** .....37 Vladimir Mironov, 3D Bioprinting Solutions, Russia
11:45 – 12:00	**Closing discussion and review of conference** Jürgen Groll, University of Würzburg, Germany
12:00	Lunch and departures

Poster Presentations List