



3RD INTERNATIONAL CONFERENCE ON 3D PRINTING IN MEDICINE



DATE
MAY 4-5, 2018



LOCATION
Electoral Palace in Mainz
(Kurfürstliches Schloss zu Mainz)
Germany



REGISTRATION
www.3dprint-congress.com



PROGRAM
3D Printing in Medicine



Deutsche Gesellschaft
für Implantologie



Technologien made in Rheinland-Pfalz
Transferinitiative RLP



www.3dprint-congress.com

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Unter www.mt-medizintechnik.de finden Sie ab sofort ein zusätzliches Online-Informationsangebot zur Zeitschrift *mt medizintechnik*.

Tagesaktuell erhalten Sie hier:

- News aus den Bereichen medizinisch-technische Industrie, Forschung, Wirtschaft, Medizinprodukterecht und vieles mehr,
- Marktinformationen zu Herstellern, Zulieferern und Dienstleistern rund um die Medizintechnik,
- Terminhinweise zu wichtigen Kongressen, Tagungen, Messen und Seminaren.

Abonnenten der *mt medizintechnik* haben darüber hinaus einen exklusiven Zugriff auf die ePaper-Versionen der jeweils letzten 6 Ausgaben der Zeitschrift und das Fachartikelarchiv.

www.mt-medizintechnik.de

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WELCOME

DEAR COLLEAGUES,



Hardly any field of medicine develops as fast as that of 3D printing and 3D bioprinting, which are branches of additive manufacturing. The Society for 3D Printing in Medicine was launched at the last conference on 3D printing in Mainz. We would like to invite colleagues to share their information and experience again in 2018, and to give researchers, biologists, materials scientists, surgeons and other interested people the opportunity to meet and discuss presentations.

The interdisciplinary approach means seeing how 3D printing is understood and applied in other disciplines. It is also important to establish a link between groundwork and hospital work and to ensure that 3D printing is geared for the future. Only then 3D printing will become reality in hospitals.

Mainz offers a wonderful setting for this, and we look forward to lively discussions and debate taking place at what promises to be an exciting trade fair.

Special Dental Day

We want this year's conference to present for the first time an exhibition on the world of dentistry. The exhibition will be shown in a separate room. The aim is to identify which 3D printing methods are already practicable and what is now being done. Most colleagues will not be aware of what is already possible.

We would therefore like to use a combination of trade fair, lectures and workshops on Saturday to showcase a practical application, which we also want to introduce to practitioners by teaming up with the Central German Association for Dental Implantology (MVZI).

Prof. Dr. Dr. Bilal Al-Nawas

WELCOME

DEAR COLLEAGUES,



This year's conference will also be used to further shape the Society for 3D Printing in Medicine, launched last year.

With already more than 90 members the society will be a strong player in this exciting field and will help to stimulate research, interdisciplinary exchange, commercialization and teaching in all related fields. As 3D printing for biomedical applications is a highly multidisciplinary research topic the society locates itself at the interfaces between the different disciplines. It will support exchange of knowledge and experiences and help to translate between the different special 'languages'.

Of crucial importance is the integration of clinicians as the proposed end-users of 3D printing in medicine as they are the ones defining current needs and interesting new potential applications.

The 3rd Conference on 3D Printing in Medicine will be the optimal opportunity to learn about newest developments in the field, to meet colleagues and friends – and also to join the new society!

Prof. Dr. Michael Gelinsky

GENERAL INFORMATION

CHAIRMEN

3rd International Conference
on 3D Printing in Medicine

Bernhard Dorweiler
Philipp Drees
Thomas Engstrand
Gabor Forgacs
John Geibel
Michael Gelinsky
Andreas Giannopoulos

Yong Huang
Stefan Kamlage
Vladimir Mironov
Werner E. G. Müller
Andreas Thor

CHAIRMEN

Dental Day

Bilal Al-Nawas
Andreas Schultheiss

Congress President

Prof. Dr. Dr. Bilal Al-Nawas

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Congress Organization

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Congress Venue

Electoral Palace in Mainz

Diether-von-Isenburg-Straße | 55116 Mainz | Germany

FACULTY

GUEST FACULTY | 3RD INTERNATIONAL CONFERENCE ON 3D PRINTING IN MEDICINE

Sylvain Catros
Bordeaux, France

Thomas Engstrand
Stockholm, Sweden

Gabor Forgacs
Brooklyn NY, USA

John Geibel
New Haven CT, USA

Michael Gelinsky
Dresden, Germany

Andreas Giannopoulos
Zurich, Switzerland

Murat Guvendiren
Newark NJ, USA

Yong Huang
Gainesville FL, USA

Vladimir Mironov
Moscow, Russia

Werner E. G. Müller
Mainz, Germany

Ibrahim Ozbolat
University Park PA, USA

Jan Schöneberg
Aachen, Germany

Andreas Thor
Uppsala, Sweden

GUEST FACULTY | DENTAL DAY

Michael Berthold
München, Deutschland

Dan Brüllmann
Mainz, Deutschland

Collin Jacobs
Mainz, Deutschland

Björn Roland
Klein-Winternheim, Deutschland

Andreas Schuttheiss
Heimsheim, Deutschland

Marcus Seiler
Filderstadt, Deutschland

PROGRAM | MAY 4, 2018

Friday | May 4, 2018

8:30 am - 9:15 am

Registration

„3rd International Conference on 3D Printing in Medicine“

9:15 am - 9:25 am

Welcome

Konrad Wolf

(Minister for Science, Further Education and Cultural Affairs of Rhineland-Palatinate)

9:25 am - 9:35 am

Welcome

Ulrich Förstermann

(Chief Scientific Officer and Dean University Medical Center Mainz, Germany)

9:35 am - 9:45 am

Welcome

Bilal Al-Nawas (Congress President, Mainz - Germany)

9:45 am - 11:00 am

Intelligent Materials and Biofabrication I

Chair: J. Geibel, M. Gellinsky

9:45 am - 10:05 am

Novel implementation of three-dimensional bioprinting

Yong Huang (Gainesville - FL, USA)

10:05 am - 10:25 am

Bioprinting of the world first functional and vascularised human organ

Vladimir Mironov (Moscow - Russia)

10:25 am - 10:45 am

3D Organ and Tissue Printing: State of the Art

Gabor Forgacs (Brooklyn - NY, USA)

15 min Discussion

11:00 am - 11:30 am | Coffee Break

PROGRAM | MAY 4, 2018

11:30 am - 12:35 pm

Intelligent Materials and Biofabrication II

Chair: J. Geibel, M. Gellinsky

11:30 am - 11:50 am

Applications of 3D Printing in Medicine

Murat Guvendiren (Newark - NJ, USA)

11:50 am - 12:00 pm

Printable Tissue Adhesives

Malgorzata Katarzyna Wlodarczyk-Biegun (Saarbrücken - Germany)

12:00 pm - 12:10 pm

Novel bioactive crosslinker for hydrogel 3D bioprinting

Ana Mora Boza (Madrid - Spain)

12:10 pm - 12:20 pm

Biofabrication of vascularized tissue models using a novel 3D-bioprinting strategy

Andreas Blaeser (Aachen - Germany)

15 min Discussion

12:35 pm - 1:35 pm | Lunch Break

12:35 pm - 1:35 pm

Lunchsymposium Materialise (Room: Spiegelsaal)

How 3D Printing in Medicine redefines Healthcare today

Hartmut Böhm (Würzburg - Germany), Tobias Nowak (Mainz - Germany)

PROGRAM | MAY 4, 2018

1:35 pm - 3:00 pm

Blood Vessels and Soft Tissue I

Chair: B. Dorweiler, W. E. G. Müller

1:35 pm - 1:55 pm

Multilayer Print Technologies to improve vascular and gastrointestinal repair

John Geibel (New Haven - CT, USA)

1:55 pm - 2:15 pm

Cardiovascular 3D Printing: Clinical Applications, Educational Opportunities, Future Perspectives

Andreas Giannopoulos (Zurich - Switzerland)

2:15 pm - 2:35 pm

Bioprinted vascular channels mimicking in vivo conditions as a tumor angiogenesis model

Jan Schöneberg (Aachen - Germany)

2:35 pm - 2:45 pm

3D-printing of liver organoid structures for patient-specific drug screening in tumor therapy

Meik Neufurth (Mainz - Germany)

15 min Discussion

3:00 pm - 3:45 pm | Coffee Break | Postersession I

3:45 pm - 4:40 pm

Blood Vessels and Soft Tissue II

Chair: B. Dorweiler, W. E. G. Müller

3:45 pm - 3:55 pm

3D Bioprinting of Organ Models for Infection Studies

Jens Kurreck (Berlin - Germany)

3:55 pm - 4:05 pm

Hollow Vascular Models of Intracranial Aneurysms for Neurointerventional Treatment Training

Johanna Spallek (Hamburg - Germany)

PROGRAM | MAY 4, 2018

4:05 pm - 4:15 pm

Physical, soft cardio-vascular models directly 3D printed with silicone

Hannah Riedle (Erlangen-Nürnberg - Germany)

4:15 pm - 4:25 pm

Melt Electrostatic Writing of a complex hierarchical structures for Human Trabecular Meshwork reconstruction

Malgorzata Katarzyna Wlodarczyk-Biegun (Saarbrücken - Germany)

15 min Discussion

4:40 pm - 6:15 pm

Challenges of Market Access

Chair: G. Forgacs, A. Giannopoulos, S. Kamlage

4:40 pm - 5:30 pm

3D Printing of Medical Devices: Legal and technical challenges ahead

Andreas Leupold (Munich - Germany), Christian Tillmanns (Munich - Germany)

5:30 pm - 5:45 pm

Implementation of additive manufacturing technologies within medical field

Gregor Reischle (Munich - Germany)

5:45 pm - 6:00 pm

Making 3D Printing Accessible to Prosthetists & Orthotists - A Startup Perspective

Manuel Opitz (Munich - Germany)

15 min Discussion

6:15 pm - 6:45 pm

General meeting „3D Printing in Medicine“

7:30 pm - 8:15 pm

City Tour with english speaking guide

Meeting point: Hotel Hilton Mainz - Lobby | Rheinstraße 68 | 55116 Mainz

8:15 pm

Social Evening at „Eisgrub Bräu“

Venue: Weissliliengasse 1a | 55116 Mainz

PROGRAM | MAY 5, 2018

Saturday | May 5, 2018

07:30 - 08:00 Uhr
Registrierung
„Dental Day“

08:00 - 10:40 Uhr
Dental Day
Chair: B. Al-Nawas, A. Schultheiss

08:00 - 08:05 Uhr
Welcome
Bilal Al-Nawas (Kongress Präsident, Mainz - Deutschland)

8:05 - 8:35 Uhr
Entwicklung des 3D Drucks in der Dentalwelt
Andreas Schutlheiss (Heimsheim - Deutschland)

08:35 - 08:55 Uhr
Additive Fertigung in der Zahntechnik
Björn Roland (Klein-Winternheim - Deutschland)

08:55 - 09:10 Uhr
Anwendung des 3D Drucks in der KFO
Collin Jacobs (Mainz - Deutschland)

09:10 - 09:20 Uhr
Überprüfung der Maßhaltigkeit digital abgeformter Kiefermodelle
Karin Frank (Krems an der Donau - Österreich)

09:20 - 09:40 Uhr
3D Planung und Druck in der Endodontie
Dan Brüllmann (Mainz - Deutschland)

09:40 - 10:00 Uhr
Individuelle, wurzelanaloge Implantate
Michael Berthold (München - Deutschland)

10:00 - 10:20 Uhr
Titangitter und die Zukunft
Marcus Seiler (Filderstadt - Deutschland)

20 Min Diskussion

PROGRAM | MAY 5, 2018

10:40 am - 11:15 am | Coffee Break

10:45 am - 11:15 am
Registration
„3rd International Conference on 3D Printing in Medicine“

11:15 am - 12:30 pm
OMF and Neurosurgery I
Chair: Y. Huang, V. Mironov

11:15 am - 11:35 am
With simple methods to complex constructs: 3D plotting for soft and hard tissue reconstruction
Michael Gelinsky (Dresden - Germany)

11:35 am - 11:55 am
Development and characterization of a poly (lactic-co-glycolic) acid - hydroxyapatite composite material to fabricate 3d-printed scaffolds for bone tissue engineering
Sylvain Catros (Bordeaux - France)

11:55 am - 12:15 pm
Repair of large cranial defect with bone-regenerative material and patient-customized design
Thomas Engstrand (Stockholm - Sweden)

15 min Discussion

12:30 pm - 1:30 pm | Lunch break

PROGRAM | MAY 5, 2018

1:30 pm - 2:35 pm

OMF and Neurosurgery II

Chair: Y. Huang, V. Mironov

1:30 pm - 1:50 pm

10 years of Virtual planning in Maxillofacial surgery: where are we going?

Andreas Thor (Uppsala - Sweden)

1:50 pm - 2:00 pm

Digital Workflow of Facial Prosthesis Manufacturing: Direct 3D Printing vs. Rapid Prototyping

Alexey Unkovskiy (Tübingen - Germany)

2:00 pm - 2:20 pm

Intraoperative hybrid tissue bioprinting for craniofacial reconstruction

Ibrahim Ozbolat (University Park - PA, USA)

15 min Discussion

2:35 pm - 3:45 pm

Orthopedic Applications I

Chair: P. Drees, T. Engstrand, A. Thor

2:35 pm - 2:55 pm

3D bio-printed smart biomaterials, based on amorphous polyphosphate nano/micro-particles, for personalized orthopedic implants

Werner E. G. Müller (Mainz - Germany)

2:55 pm - 3:05 pm

Osteoconductive bone substitutes by additive manufacturing

Franz Weber (Zurich - Switzerland)

3:05 pm - 3:15 pm

Towards Osteoarticular Regeneration through Bioprinting: simultaneous deposition of termostatics, hydrogels and cells

Nieves Cubo Mateo (Madrid - Spain)

PROGRAM | MAY 5, 2018

3:15 pm - 3:25 pm

3D printing of core/shell calcium phosphate cement (CPC) scaffolds – novel method for growth factor delivery in bone regeneration

Ashwini Rahul Akkinen (Dresden - Germany)

3:25 pm - 3:35 pm

A simplified workflow for bone segmentation and 3D printing

Mihai Tarce (Leuven - Belgium)

10 min Discussion

3:45 pm - 4:15 pm | Coffee Break | Postersession II

4:15 pm - 5:45 pm

Orthopedic Applications II

Chair: P. Drees, T. Engstrand, A. Thor

4:15 pm - 4:25 pm

Antimicrobial and osteoconductive postprocessing of selective laser sintered PEEK based spinal implants

Jürgen Lackner (Graz - Austria)

4:25 pm - 4:35 pm

Prebending of Osteosynthesis Plates Versus Screw and Cerclage Fixation for Os Acromiale or Acromion Fracture

Julie Mannaerts (Hasselt - Belgium)

4:35 pm - 4:45 pm

Prebending of osteosynthesis plate using 3D printed models to treat symptomatic os acromiale and acromial fracture

Hanne Biesmans (Hasselt - Belgium)

4:45 pm - 4:55 pm

A New Bone Substitute Developed from 3D-Prints of Polylactide (PLA) Loaded with Collagen I

Ulrike Ritz (Mainz - Germany)

PROGRAM | MAY 5, 2018

4:55 pm - 5:05 pm

Bone Sialoprotein coating of three-dimensional plotted calcium phosphate cement scaffolds and its effects on bone formation in vivo

Andreas Baranowsky (Mainz - Germany)

5:05 pm - 5:15 pm

Fracture toughness of additiv manufactured PEEK charpy tests dependend on the printbed orientation

Uwe Popp (Karlsruhe - Germany)

5:15 pm - 5:25 pm

Success factors beside the implant design - Why can your patient-specific implant fail?

Martin Herzmann (Munich - Germany)

20 min Discussion

5:45 pm - 6:00 pm

Awards and final words

Bilal Al-Nawas (Congress President, Mainz - Germany)

POSTER

- 1. A New Bone Substitute Developed from 3D-Prints of Polylactide (PLA) Loaded with Collagen I**
Philipp Wolf (Mainz - Germany)
Mehmet Rüzgar, Rebekka Gerke, Hermann Götz, Stefan Stein, Pol Maria Rommens, Ulrike Ritz
- 2. Implant coating with antibiotic active mesoporous nano-depots for prevention of post-implantation infection**
Anna Watermann (Mainz - Germany)
Sven Kurch, Wolfgang Tremel, Juergen Brieger
- 3. Low temperature printing of self-setting calcium phosphate ceramics for bone regeneration**
Tilman Ahlfeld (Dresden - Germany)
Paula Korn, Anja Lode, Michael Gelinsky
- 4. Statistical bone model from CT-data: basis for modelling defect implants**
Ralf Schulze (Mainz - Germany)
Thomas Gietzen, Robert Brylka, Katja zum Hebel, Elmar Schoemer, Ulrich Schwanecke
- 5. 3D printing of degradable optical platforms**
Jun Feng (Saarbrücken - Germany)
Malgorzata Katarzyna Wlodarczyk-Biegun, Aránzazu Del Campo
- 6. Development of a gelatin-Laponite paste for extrusion-based bioplotting**
Janina Spangenberg (Dresden - Germany)
Tilman Ahlfeld, David Kilian, Anja Lode, Michael Gelinsky
- 7. Design and additive manufacturing of clinically relevant individualized constructs via extrusion-based 3D-printing of a CaP cement**
David Kilian (Dresden - Germany)
Tilman Ahlfeld, Stefan Holtzhausen, Philipp Sembdner, Anja Lode, Ralph Stelzer, Michael Gelinsky
- 8. Evaluation of 3D imaging methods for epithetic reconstruction of facial defects**
Dirk Linde (Jena - Germany)
Saskia Schenk, Gerlind Schneider
- 9. Development of a 3D fabrication process for personalized nasal epithesis**
Meik Neufurth (Mainz - Germany)
Yeni Schulte, Werner E. G. Müller
- 10. Gelatin as an bioink additive - its impacts on printability and thermosensitivity**
Meik Neufurth (Mainz - Germany)
Daniela Gebert, Werner E. G. Müller
- 11. Three-dimensional pre-vascularized mucosa equivalents: A possible application for 3D printing**
Martin Heller (Mainz - Germany)
Heide-Katharina Bauer, Eik Schiegnitz, Roxana Schwab, Anette Hasenburg, Ronald Unger, Walburgis Brenner

SOCIAL EVENING | MAY 4, 2018

SOCIAL EVENING AT „EISGRUB“ WITH CITY TOUR

May 4, 2018 | 8:15 pm



7:30 pm - 8:15 pm

City Tour with english speaking guide

Start at Hotel Hilton Mainz - Lobby | Rheinstraße 68 | 55116 Mainz

Visit the beautiful city of Mainz. The tour will guide you to the social evening at the „Eisgrub“.

Price: 10.00 Euro

8:15 pm

Social Evening at „Eisgrub“

The Eisgrub in the upper city of Mainz is located below the citadel and has been used as a natural ice-house since 1872. The name is derived from the words Eis and Grube (ice and cavern). The entrance area of the building, initially used as barracks, houses since 1989 the brew-pub Eisgrub Bräu, currently the only brewery in Mainz.

Dress code: Casual

Food (3-course-menu) and beverages are included

Price: 45.00 Euro

PARTNER & EXHIBITORS

Cooperation Partner

Transferinitiative RLP



Technologien made in Rheinland-Pfalz
Transferinitiative RLP

Technology and knowledge transfer is associated with a number of challenges. Transferinitiative RLP, a project of Rhineland-Palatinate, aims at bringing together researchers and developers from industry and academia to enhance the innovation system in the region. Focussing on three promising topics we support the professional networks and cooperation of industry and research. Our focus areas are:

1. Personalized Medicine
2. Lightweight and new materials
3. Industry 4.0

By providing the platform for entrepreneurs and scientists to meet, we foster novel connections, give access to new ideas and support the transfer of emerging technologies into the regional economy.

Exhibitors

Medical Association „3D Printing in Medicine“



FACHGESELLSCHAFT
3D-DRUCK IN DER MEDIZIN

The Medical Association „3D Printing in Medicine“ was founded on 19 May 2017 in Mainz at the second 3D-Printing Congress.

The association currently has almost 100 members.

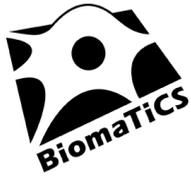
Purpose of the Association
The association has the following task:

- Promotion of activities in 3D printing in the field of medicine
- Promotion of science, research and development in medical 3D printing
- Participation / realization of specialist events / congresses / symposia etc. for medical 3D printing
- Promotion of education and training
- career development and promotion of young researchers
- Promotion of national and international networking

For further information please have a look at the website: www.3dmed.org

EXHIBITORS

BiomaTiCS



The research focus program BiomaTiCS of the University Medical Center Mainz works as an interdisciplinary network of materials scientists and medical researchers, who are interested in understanding and modulating the complex interactions between biological systems and artificial as well as biogenic materials. Despite of advancements in material design and surgical techniques, medical device-related clinical problems like inflammation, rejection of implants, foreign body granulomas, excessive scar formation, lack of tissue-adhesion, material degradation, infection and toxicity are very common BiomaTiCS offers an excellent platform for an exchange of information among competent specialists to combine all their knowledge necessary to tackle these problems.

Black Drop Biodrucker GmbH



Black Drop Biodrucker GmbH is a leading bioprinting company focused on 3D-printing of living cells. Bioprinting is a biomedical key technology that has the potential to improve medical patient treatment in multiple ways. Bioprinted tissue analogues, such as skin, liver, or heart muscle patches offer an ideal platform for drug and toxicity screening. In the future bioprinted tissue implants could be used to maintain, restore, or substitute the function of damaged tissues.

Together with our clients we seek to exploit the full potential of 3D-bioprinting technology in order to enhance patient care. In this way we provide our clients with state-of-the-art bioprinting hard-and software, highly biofunctional bioinks, and bioprinted in-vitro models. Besides our compact 3D-bioprinter series, Black Drop SuperFill, we construct individualized bioprinting systems and develop tailored bioinks.

EXHIBITORS

Bösing Dental & Implant Solutions



Your complete solution for CT guided dental implants and customized surgical guides. Our Dental Masters Laboratory is always working with the most modern equipment. With the continuing education of our team we know about the newest progress in dental medicine and dental techniques. Our claim is to deliver the highest quality dental products to our clients.

We love what we do – Find out for yourself!

- Implant Prosthetics
- 3D-Planing
- 3D-Printing
- CAD/CAM Technology
- Surgical Guides
- Customized Abutments
- Aligners

D3-Technology GmbH



Company for 3D Scan, 3D model and 3D print technology. We plan, build and run 3D Systems within for dental usage, esp. for surgical guide and aligner production.

We are technology and reseller partner for Raise3D 3D printer, MoonRay DLP printer, Shining 3D-Dental Scanner and OnyxCeph 3D Lab software.

EXHIBITORS

DreveDentamid GmbH



In order to come up to the growing demand for digitally produced models and drilling templates DreveDentamid GmbH have profoundly engaged themselves in this topic. With an enormous effort of the in-house department of Research and Development Dreve managed to realize all the measures necessary to allow the smooth and trouble-free process of rapid manufacturing per model. We have been employing the generative manufacturing units D30 and D35 in our Unna factory for more than a year now. The Scan-LED technique used in these machines is a further development of stereolithography which allows for manufacturing with highest precision and attention to detail.

With the introduction of the new ordering portal Print@Dreve, DreveDentamid GmbH now offers a very convenient and easy to handle ordering system. Invoicing of the services will be done by the authorized distributor that is chosen by the dental lab. And still the highly qualified technical support is provided by the specialists at DreveDentamid GmbH.

EnvisionTEC GmbH



A Leading 3D Printer Manufacturer

EnvisionTEC is a leading global provider of professional-grade 3D printing solutions. Our company invents, develops, manufactures and sells 3D printers and proprietary materials worldwide.

Founded in 2002 with its pioneering commercial DLP printing technology, EnvisionTEC now sells more than 40 printers based on six distinct technologies that build objects from digital design files. The company's premium 3D printers serve a wide variety of medical, professional and industrial markets, and are valued for precision, surface quality, functionality and speed. EnvisionTEC's intellectual property includes more than 100 pending and granted patents and 70 proprietary materials.

EXHIBITORS

GeSiM mbH



With the vastly improved BS3.2, GeSiM, a bioinstrumentation company, offers an even more versatile 3D printing solution biological and biocompatible materials in tissue engineering and medical research. The multi-Z-axes print head allows the combination of rigid scaffolds providing mechanical support with cell-friendly soft

materials such as hydrogels. Up to three pneumatically or piston-driven extruders can print alginate, collagen, bone cement, or molten PCL, to name a few, at temperatures from 4 to 250 °C.

To extend the functionality of the BS3.2, an optional piezoelectric or solenoid valve pipetting unit allows deposition of tiny drops of cells, proteins, or other biomaterial onto or in between scaffolds. A melt electro writing module enables printing of tiny polymer struts. The machine reads in CAD data in the STL format.

The numerous options make BS3.2 to the most versatile instrument of its kind. In addition, the GeSiM expertise extends the robotic platform with microfluidic devices for e.g. cell cultivation or screening if desired.

Materialise GmbH



Materialise incorporates more than 25 years of 3D printing experience into a range of software solutions and 3D printing services, which together form the backbone of the 3D printing industry. Materialise's open and flexible solutions enable players in a wide variety of industries, including healthcare, automotive, aerospace, art and design, and consumer goods, to build innovative 3D printing applications that aim to make the world a better

and healthier place. Headquartered in Belgium, with branches worldwide, Materialise combines the largest group of software developers in the industry with one of the largest 3D printing facilities in the world.

EXHIBITORS

Nanoscribe GmbH



Nanoscribe's 3D laser lithography system, Photonic Professional GT, sets new standards in 3D microprinting and maskless lithography. It is a fast and powerful platform for micro- and nanofabrication and a valuable tool for tasks in R&D in science and industry.

The systems enable the fabrication of true 3D micro- and nanostructures into photosensitive materials based on the technique of two-photon polymerization. In combination with the included software package, the turnkey system is embedded best along the 3D printing workflow and allows highest resolution with a previously unavailable freedom of design.

Subsequent independent processes enable the transfer and/or replication of polymeric 3D printed templates into a large choice of materials. The additive manufacturing of 2D, 2.5D and 3D objects paves the way for a wide field of novel applications, e.g. in photonics, micro-optics, micro-fluidics, life sciences and tissue engineering.

Natural Dental Implants AG | REPLICATE System



About the REPLICATE System

The REPLICATE system is a highly innovative technology for immediate single-tooth replacement. Each REPLICATE tooth is produced individually for each patient based on a 3D x-ray (DVT / CBCT) and is an exact replica of the non-salvageable tooth to be replaced.

The customized replica of the tooth is inserted into the alveolar socket immediately after extraction and covered with a protection crown/bridge, all at the same appointment.

About Natural Dental Implants AG

Natural Dental Implants AG, based in Berlin, was founded in 2006 to develop intellectual property rights for the REPLICATE system for single-tooth restorations. The company commenced business operations in 2009. The REPLICATE system for single-tooth restorations has been approved in the European Union and is distributed commercially. A U.S. subsidiary, REPLICATE Dental Technology Inc. based in Dallas, Texas, was established to market the REPLICATE system in the U.S. after FDA approval.

EXHIBITORS

Renishaw PLC



Renishaw is one of the world's leading engineering and scientific technology companies with expertise in precision measurement and healthcare. The company supplies products and services used in applications as diverse as jet engine and wind turbine manufacture, through to dentistry and brain surgery. It is also a world

leader in the field of additive manufacturing (also referred to as 3D printing), where it is the only UK business that designs and makes industrial machines which 'print' parts from metal powder.

The Renishaw Group currently has more than 70 offices in 35 countries, with over 4,000 employees, of which 2,700 people are employed within the UK. The majority of the company's R&D and manufacturing is carried out in the UK and for the year ended June 2016 Renishaw achieved sales of £436.6 million of which 95% was due to exports. The company's largest markets are China, USA, Germany and Japan.

SLM Solutions Group AG



TLübeck-based SLM Solutions Group AG is a leading provider of metal-based additive manufacturing technology. The company's shares are traded in the Prime Standard of the Frankfurt Stock Exchange. The stock has been listed in the TecDAX index since March

21, 2016. SLM Solutions focuses on the development, assembly and sale of machines and integrated system solutions in the field of selective laser melting. SLM Solutions currently employs over 360 members of staff in Germany, the USA, Singapore, Russia, India and China. The products are utilised worldwide by customers in particular from the aerospace, energy, healthcare and automotive industries.

EXHIBITORS

Straumann GmbH



The Straumann Group is a global leader in implant, restorative and regenerative dentistry. We offer our products and services to dental professionals and dental laboratories around the world.

A comprehensive product portfolio

With Straumann's roots in Swiss precision engineering and clinical excellence, the company has pioneered many of the most influential technologies and techniques in our field. Straumann's tradition of 'Simply doing more for dental professionals' to advance dental regeneration, restoration, and replacement as well as patient care has helped us to consistently broaden our product portfolio since going public in 1998.

Straumann® CARES® Digital Solutions represents a complete dental solution, from digital impression-taking using intra-oral scanning to the computerized production of prosthetics using state-of-the-art CAM processing. Each individual step seamlessly interlocks with the next and is designed for high quality all along the digital workflow.

Verband 3DDruck e.V.



The 3D Printing Association adopts a comprehensive cross-sector approach, sees itself as a non-partisan think tank and is prepared to form strategic alliances with all stakeholders who are committed to the development of additive manufacturing in Germany and throughout the rest of Europe.

The 3D Printing Association, Lobby Group for 3D Printing Technology was founded in Berlin in May 2016. The goal is to represent the many-faceted interests of the 3D printing technology (additive manufacturing) sector in interaction with political bodies, society and the media and to act as the voice of our members engaged in research, development and application of this technology. In our view it also includes giving our members the opportunity for networking, informing opinion leaders and the public at large via discussions, projects and events about the wide variety of topics relating to additive manufacturing and monitoring national and international developments and to bring them into the discussion in the interests of these members. Finally we also plan to support training and further training projects in this field of technology.

MEDIA PARTNERS

3Druck.com



3Druck.com – the independent magazine for 3D printing technologies – is with over 215.000 page views and more than 70.000 unique users monthly the leading online magazine covering additive manufacturing technologies for the German speaking community.

We are a purely informative medium covering everything around the topic of 3D printing. Besides reading daily news about this interesting and increasingly popular field, we support our readers with overviews for hardware, materials, software and events. Additionally, our readers can share their experience and projects with the community by publishing guest posts. With our platform 3Prinr.com we reach out to the English speaking community.

EUROPEAN HOSPITAL Verlags GmbH



For 25 years European Hospital has been the voice of European healthcare communication, both with the print edition and the online presence which was introduced ten years ago.

It is our mission to observe these changes and to reflect on them. Our interviews and reports, editorials and product reviews aim to address the needs of hospital managers, medical and technical directors, senior physicians and nursing managers. We will keep you up-to-date on trends and innovations in the healthcare market: We cover the entire field from clinical practice through medical technology to clinical research. Experts will provide answers to the most pressing healthcare issues. Which solutions will really help optimize logistics, HR or financial management? Which high-end products will be launched shortly, which applications will be introduced? How can you tap the full strategic potential of your hospital information system? How can you rein in your nursing costs?

You will find the answers in healthcare-in-europe.com – the heartbeat of the European healthcare market.

MEDIA PARTNERS

mt medizintechnik



The magazine "mt medizintechnik" devoted itself to all aspects of medical technology with diagnostic and curative process and gives attention to the techniques and the operation of medical devices.

The magazine informs about ongoing technologies and their use in a certain field, offers market review and describes development trends.

In addition it looks at the entire organizational background of the medical technology. This includes the latest judicial information as well as contributions to the quality-, device- and business management.

"mt medizintechnik" is the only practically based magazine for medical technology in the German-speaking market. The magazine built a bridge between medicine and technology for the operator and manufacturer for hospitals and the medical industry.

SPECTARIS



SPECTARIS is the German industry association for the high-tech medium-sized business sector and representative body in the areas of medical technology, optical technologies and analytical, biological, laboratory, and ophthalmic devices. Innovation and growth characterize the different industry sectors and their

300,000 strong workforce. Technologies developed here are used in almost all branches of industry, making them an important motor for the German economy. SPECTARIS pools the interests of around 400 member companies from Germany, associated in four different sector-specific associations. Through its political activities, public relations and industry marketing, the association gives its members a voice, formulates new responsibilities and opens up new markets. This ensures the international competitiveness of German industry in these sectors and thus safeguards locations and jobs.

MEDIA PARTNERS

VDMA (Verband Deutscher Maschinen- und Anlagenbau e.V.)



Arbeitsgemeinschaft
Medizintechnik

The VDMA (German Engineering Federation) is the largest industry association in Europe with over 3,100 members ranging from small to medium firms offering high precision engineering, measuring and testing technology, precision tools, machine tools and manufacturing systems and much more in between.

They have branch offices in Berlin and Brussels as well as liaison offices in Brazil, China, India, Japan and Russia and work to represent the shared economic, technical and scientific interests of their members, especially with respect to national and international authorities and business groups.

The Working Group Medical Technology comprises of medical device manufacturers, research institutes and engineering companies. It is the platform within the VDMA regarding production technology and components for medical devices.

INFORMATION

INFORMATION FOR SPEAKER

It is necessary that speakers visit the Speaker Preparation Room well in advance of their presentation (at least 45 minutes prior) to ensure the presentation is checked and tested. You will be briefed on how to use the system when you meet with the audio visual technicians.

The following AV equipment will be available at the Conference:

- Data Projector and Screen
- Lectern with Microphone

Presentations must be provided in a version of Microsoft PowerPoint. Please ensure your PowerPoint Presentations are in 16:9 or 4:3.

Speakers are advised to bring their presentation on CD-Rom or USB Memory Stick. Should your presentation be in MAC format, it is imperative that this be converted to PC format prior to arrival at the conference.

If your presentation includes movies or animations please make sure to bring them with you to the speaker ready room for uploading, even if you chose to "embed" your media files.

The use of own laptop is not advised.

For questions and special requirements, please contact boeld communication: congress@bb-mc.com

DECLARATION OF CONFLICT OF INTEREST

All conflicts of interest must be disclosed. Financial relationships with industry such as consultancies, either directly or through an immediate family member, are considered conflicts of interest. All financial support for the work must be acknowledged as part of the presentation.

You must also declare/acknowledge to delegates any funding support or programs that you are associated with.

INFORMATION

POSTER PRESENTATION

Poster size should not exceed 84,1 cm in width and 118,9 cm in height (DIN A0).

The posters will be displayed during the whole meeting. Assistance and material (tape etc.) for mounting the posters will be provided at the congress. Posters can be mounted on the poster boards on Friday, May 4, from 8:30 am.

Posters will be visited by the chairs. We kindly ask all authors of the posters to be present at their poster during the coffee break on Friday, May 4, 2018 between 3:00 pm - 3:45 pm and Saturday, May 5, 2018 between 3:20 pm - 4:00 pm.

All posters should be removed at the end of the congress on Saturday, May 5, 2018.

Leftbehind posters are going to be disposed.

REGISTRATION FEE

3rd International Conference on 3D Printing in Medicine | May 4 - 5, 2018

Doctors / Scientists	375,00 €
Doctors / Scientists (DGI Member)	337,50 €
Doctors / Scientists (3D-Druck in der Medizin Member)	295,00 €
Abstract Submitter	275,00 €
Abstract Submitter (DGI Member)	247,50 €
Abstract Submitter (3D-Druck in der Medizin Member)	200,00 €
Students	250,00 €
Students (DGI Member)	225,00 €
Students (3D-Druck in der Medizin Member)	180,00 €

Day Tickets

Standard	195,00 €
Standard (DGI Member & 3D-Druck in der Medizin Member)	175,50 €

Dental Day | May 5, 2018

Standard	160,00 €
Standard (DGI Member & 3D-Druck in der Medizin Member)	144,00 €

Combined Ticket: 3rd International Conference on 3D Printing in Medicine & Dental Day

Doctors / Scientists	455,00 €
Doctors / Scientists (DGI Member)	409,50 €
Doctors / Scientists (3D-Druck in der Medizin Member)	375,00 €
Abstract Submitter	355,00 €
Abstract Submitter (DGI Member)	319,50 €
Abstract Submitter (3D-Druck in der Medizin Member)	280,00 €
Students	330,00 €
Students (DGI Member)	297,00 €
Students (3D-Druck in der Medizin Member)	260,00 €

REGISTRATION FEE

Entrance for Industrial Exhibition only

Standard	50,00 €
Standard (DGI Member & 3D-Druck in der Medizin Member)	45,00 €

Materialise Symposium | May 4, 2018 (Registration required!)

Standard	0,00 €
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City Tour (English-speaking) | May 4, 2018

Standard	10,00 €
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Social Evening at „Eisgrub“ | May 4, 2018

Standard	45,00 €
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NOTES



**3RD INTERNATIONAL
CONFERENCE
ON 3D PRINTING
IN MEDICINE**

www.3dprint-congress.com