

Indo-German Workshop (BIODENT)

Design and manufacturing of biomaterials and implants for dental, cranio-maxillofacial reconstruction and bone regeneration



Programme

February 13, 2023	
Venue: H17, Lecture Theatre, Dept. of Mechanical Engineering, Erlangen 91058	
8.30	Registration
9:00	Welcome and Opening Remarks (Prof. Dr.-ing. habil. h. c. Aldo R. Boccaccini, Prof. Bikramjit Basu, Counsellor (Science & Technology), Embassy of India, Berlin and IGSTC officials)
9:30	Presentation by IGSTC officials and Counsellor (Science & Technology), Indian Embassy
Opening lecture Session chair: Aldo R. Boccaccini and Bikramjit Basu	
10:00	Prof. Dr. Michael Gelinsky (TU Dresden) <michael.gelinsky@tu-dresden.de> Combining materials and technologies in additive manufacturing of complex tissue substitutes
10.30	Coffee Break
Session 1: 3D printing and Bone substitutes Session chair: Manish Baldia and Rainer Detsch	
11:00	Prof. Kaushik Chatterjee (Indian Institute of Science, Bangalore) <kchatterjee@iisc.ac.in> 3D/4D printing of biomaterials for the repair and regeneration of bone tissues
11:30	Prof. Dr. Shahram Ghanaati (University Hospital Frankfurt) <shahram.ghanaati@kgu.de> How blood concentrates can be used to activate bone substitute materials

12:00	<p>Dr. Fei Zhang (KU Leuven, Belgium) <fei.zhang@kuleuven.be></p> <p>Zirconia ceramics for dental applications: materials design, additive manufacturing and cases of clinically failed implants</p>
12:30	Lunch Break
	<p>Session 2: Translational challenges and unmet clinical needs - I</p> <p>Session chair: Kaushik Chatterjee and Michael Gelinsky</p>
14:00	<p>Dr. Manish Baldia (Jaslok Hospital and Research centre, Mumbai) <manishh99@yahoo.com></p> <p>Cranioplasty: overview and clinical cases</p>
14:30	<p>Prof. Raymund Horch (University Hospital Erlangen) <raymund.Horch@uk-erlangen.de></p> <p>Bridging the gap - Getting Tissue Engineering into the clinical application: The Plastic Surgeon's view</p>
15:00	<p>Prof. Dr. Vibha Shetty (Ramaiah Univ. of Applied Science, Bangalore) <vibshetty6@gmail.com></p> <p>Clinical dentistry and Biomaterials- A Synergistic Approach</p>
15:30	Coffee Break
	<p>Session 3: Translational challenges and unmet clinical needs - II</p> <p>Session chair: Manish Baldia and Uwe Gbureck</p>
16:00	<p>Dr. Fabian Westhauser (University Hospital Heidelberg) <fabianwesthauser@gmx.de></p> <p>Bioactive Glasses in Orthopedic Surgery: water under the bridge or key to a better future?</p>
16:30	<p>Dr. Shaista Ilyas (University of Cologne) <silyas@uni-koeln.de></p> <p>Chemically Engineered Nanocarriers for Tumor Specific Localization and Drug Delivery Applications</p>

17:00	<p>Jun. Prof. Dr. Paula Korn (TU Dresden) <paula.korn@uniklinikum-dresden.de></p> <p>Alternatives to autologous bone grafts for alveolar cleft osteoplasty – Tissue engineering and 3D plotting approaches</p>
17.30	<p>Networking session among the IGSTC participants to discuss future collaboration</p>
<p>18:30-20:00: Opening Reception (Venue: Institute of Biomaterials. Cauerstr. 6, 91058 Erlangen)</p>	

<p>February 14, 2023</p> <p>Venue: Seminar Hall H14, Martenstrasse 5-7, 91058 Erlangen</p>	
<p>Session 4: 3D Printing of Biomaterials for musculoskeletal applications</p> <p>Session chair: Balendra Pratap Singh and Ulrike Ritz</p>	
9:00	<p>Prof. Dr. rer. nat. Uwe Gbureck (University of Würzburg) <uwe.gbureck@fmz.uni-wuerzburg.de></p> <p>Low Temperature 3D Printing of Bioceramic Implants</p>
9:30	<p>Dr.-Ing. Rainer Detsch (University of Erlangen-Nuremberg) <rainer.detsch@fau.de></p> <p>Advanced approaches of 3D printing in cranioplastic implants: From bioceramics to hybrid structures</p>
10:00	<p>Dr. Hajar Homa Maleki (University of Cologne) <h.maleki@uni-koeln.de> Self-Assembly Driven Biomimetic 3D-Printed Hybrid Aerogel-based Theragenerative Scaffolds for Bone Regeneration and Cancer Therapy</p>
10:30	<p>Coffee Break</p>
<p>Session 5: Translational ecosystem: Status and challenges</p> <p>Session chair: Shikhar Jha and Rainer Detsch</p>	
11:00	<p>Prof. Bikramjit Basu (Indian Institute of Science, Bangalore) <bikram@iisc.c.in></p> <p>Interdisciplinary Translational research on Biomaterial Implants: Current Status and Future Scope</p>
11:30	<p>Priv.-Doz. Dr. Ulrike Ritz (Johannes Gutenberg-University Mainz) <ritz@uni-mainz.de></p> <p>Dual functional biomaterials for inhibiting infection and promoting bone regeneration</p>

12:00	<p>Dr. Balendra Pratap Singh (King George Medical University, Lucknow) <balendra02@yahoo.com></p> <p>Clinical trial in healthcare setting in India: opportunities and challenges</p>
12.30	Lunch Break

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14:00	<p>Prof. Dr. h.c. Peter Fratzl (Max Planck Institute of Colloids and Interfaces) <gabbe@mpikg.mpg.de></p> <p>On the role of internal stresses in tissue growth and regeneration</p>
14:30	<p>Prof. Ashutosh K Dubey (IIT (BHU), Varanasi) <akdbhu@gmail.com></p> <p>Ferro-biomaterials as new generation materials for orthopedic applications</p>
15:00	Coffee Break
<p>Session 7: Biomaterials for Bone regeneration - II</p> <p>Session chairs: Vibha Shetty and Andreas Höß</p>	
15:30	<p>Prof. Dr.-Ing. Habil. Aldo R. Boccaccini (University of Erlangen-Nuremberg) <aldo.boccaccini@fau.de></p> <p>Bioactive glasses meet Biofabrication: Progress and Challenges for Developing Functional Bone Scaffolds</p>
16:00	<p>Shikhar Jha (IIT Kanpur, India) <skjha@iitk.ac.in></p> <p>Effect of surface energy and morphology of ZnO nanoparticles on antibacterial efficacy.</p>
16:30	<p>Networking session among the IGSTC participants to discuss future collaboration</p>
<p>19:00-22:00: Official Dinner</p> <p>(Venue: Unicum, Carl-Thiersch-Straße 9, 91052 Erlangen, 09131 503480)</p>	

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Session 8: Young researcher session I Session chairs: Ashutosh K. Dubey, Manish Baldia, Michael Gelinsky and Ulrike Ritz	
9:00	Dr. Deepanjalee Dutta (Universität Bremen) <dutta@uni-bremen.de> Alumina ceramic textiles as novel wound dressings
9:20	Dr. Farnaz Ghorbani (University of Erlangen-Nuremberg) <farnaz.ghorbani@fau.de> Bovine serum albumin-modified 3D printed alginate dialdehyde-gelatin scaffolds incorporating inorganic nanoparticles for bone regeneration
9:40	Dr. A. Rahul Akkineni (TU Dresden) <ashwini_rahul.akkineni@tu-dresden.de> Localized and controlled delivery of antibiotics by 3D core/shell hydrogel scaffolds to treat/prevent soft tissue infections
10:00	Valentina Kottmann (Johannes Gutenberg-University Mainz) <valentina.Kottmann@unimedizin-mainz.de> Characterisation of cellular adhesion of human cancer cell lines to bone sialoprotein
10:20	Coffee Break
Session 9: Commercial production of biomaterials and implants: Status & Challenges Session chair: Balendra Pratap Singh and Rainer Detsch	
11:00	Dr.-Ing. Andreas Höß (INNOTERE GmbH) <a.Hoess@innotere.de> From idea to patient: a legal manufacturer's perspective on the 3D printing of bone cements
11:30	Dr. P. T. Reddy (ARKA Medical Devices Pvt. Ltd.) <ptreddy11@gmail.com> Journey from design to manufacturing of cranio-maxillofacial implant
12:00	Mr. Sabyasachi Roy (Cerammat Pvt. Ltd. (a TATA enterprise)) <sabya@tsl-cerammat.com> High quality Bioceramics and Advanced functional ceramics enabling Affordable Healthcare and global Industrial Solutions
12:30	Dr. Yvonne Mödinger (CeramTec GmbH) <Y.Moedinger@ceramtec.de> Ceramics in Dental Applications: Favorable Surface Properties and Novel Manufacturing of Established Materials
13:00	Lunch Break

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	Session 10: Young researcher session II Session chairs: Ashutosh K. Dubey, Manish Baldia, Michael Gelinsky and Ulrike Ritz
14:00	Berfu Göksel (KU Leuven, Belgium) <berfu.goeksel@kuleuven.be> Production of High-Density Monolithic Alumina Toughened Zirconia Parts with Material Extrusion for Dental Implant Applications
14:20	Dr. Victoria Schemenz (Charité – Universitätsmedizin Berlin) <victoria.schemenz@charite.de> Multi-method characterization of the osteocyte lacuno-candicular network architecture and material properties in healing bone
14:40	Paul Otto (University of Würzburg) <paul.otto@fmz.uni-wuerzburg.de> Mineral-organic bone adhesive compositions and evaluation of adhesive strength using a biomimetic in-vitro test system
15:00	Richard F. Richter (TU Dresden) <richard_frank.richter@tu-dresden.de> Calcium phosphate cement and mesoporous bioactive glass as a 3D printable composite for the treatment of critical alveolar bone defects
15:20	Coffee Break
	Session 11: Young researcher session III Session chairs: Ashutosh K. Dubey, Manish Baldia, Michael Gelinsky and Ulrike Ritz
15:45	Friedrike Kaiser (University of Würzburg) <friederike.kaiser@fmz.uni-wuerzburg.de> The next generation of magnesium phosphate bone cements: Ready-to-use and rapidly biodegradable
16:05	Deepa Mishra (Indian Institute of Science, Bangalore) <mdeepa@iisc.ac.in> Design and in silico biomechanical analysis of dental implant system development
16:25	Marcela Arango Ospina (University of Erlangen-Nuremberg) <marcela.arango@fau.de> In-vitro biological effect of dissolution products from silicate bioactive glasses
16:30	Closing session and Award announcement