

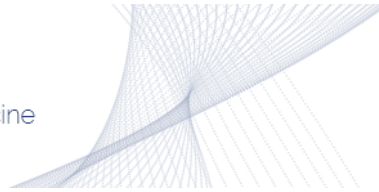
# Biennial Meeting

## ViCEM – Vienna Center for Engineering in Medicine

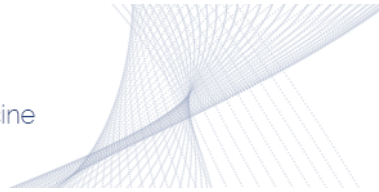
### November 14-15, 2019

**Nov 14 | Medical University of Vienna | Van Swieten Saal**  
Van-Swieten-Gasse 1a, 1090 Wien

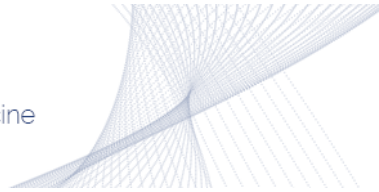
- 09:00 Registration & Coffee
- 10:00 Welcome Addresses  
**Christian Hellmich**, ViCEM Coordinator (Technische Universität Wien)  
**Siegfried Trattnig**, ViCEM Coordinator (Medizinische Universität Wien)  
**Michaela Fritz**, Vice Rector Research & Innovation (Medizinische Universität Wien)  
**Johannes Fröhlich**, Vice Rector Research & Innovation (Technische Universität Wien)
- 10:30 **Keynote Lecture Session**  
**Chair: Philipp Thurner** (Technische Universität Wien)
- 10:30 *INBETWEEN - Coop. Projects with TU/MUW – Austrian Cluster for Tissue Regeneration*  
**Heinz Redl** (Ludwig Boltzmann Institute for Experimental and Clinical Traumatology)
- 11:15 *Man-machine interfacing by decoding spinal motor neurons*  
**Dario Farina** (Imperial College London)
- 12:00 Lunch Break



- 13:30 **ViCEM Best PhD Award Session**  
**Chair: Franz Kainberger** (Medizinische Universität Wien)
- 13:30 *Fracture load prediction in patients with metastatic lesions in the femur using finite element analysis*  
**Emir Benca** (Medizinische Universität Wien)
- 14:00 *Individualization and optimization of electrical impedance tomography and improvement of biosignal management and analysis in the clinical setting*  
**Florian Thürk** (Technische Universität Wien)
- 14:30 *Development of a 3D-printing process for colored dental ceramics and selective modification of polymers*  
**Sonja Baumgartner** (Technische Universität Wien)
- 15:00 Coffee Break
- 15:30 **Rapid-fire PhD Project Presentations**  
of ongoing (joint) PhD projects accompanied by a poster  
**Chairs: Eugenijus Kaniusas** (Technische Universität Wien) and **Wolfgang Weninger** (Medizinische Universität Wien)
- 15:30 *Development of thermoplastic elastomers for vascular tissue regeneration*  
**P. Schwarzl** (TU Wien), K. Ehrmann, C. Grasl, S. Rohringer, T. Koch, H. Schima, H. Bergmeister, B. Podesser, R. Liska, S. Baudis
- 15:35 *The stiffer the better? Influence of matrix stiffness on chondrocyte redifferentiation*  
**B. Bachmann** (LBI Trauma), S. Spitz, B. Schädler, H. Redl, S. Nürnberger, P. Ertl
- 15:40 *Tough photopolymers for bone tissue regeneration*  
**P. Steinbauer** (TU Wien), S. Orman, C. Hofstetter, M. Schwentenwein, G. Russmüller, J. Stampfl, R. Liska, S. Baudis
- 15:45 *Biodegradable photopolymers based on acetal building blocks as artificial bone grafts*  
**B. Dellago** (TU Wien), R. Liska, S. Baudis
- 15:50 *Real time-NIR-photorheology: in situ characterization of the gelatin-methacryloyl hydrogel photocuring process*  
**R. Reichsöllner** (TU Wien), L. Rebers, A. Southan, S. Baudis



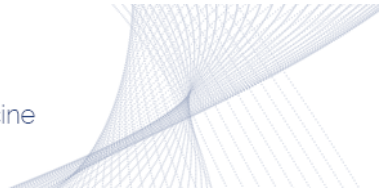
- 15:55 *Developing of Si<sub>3</sub>N<sub>4</sub> ceramics using lithography-based additive manufacturing*  
**A.L. Kutsch** (TU Wien), C. Hofstetter, S. Baudis, J. Stampfl
- 16:00 *Automatic control of an intra-corporeal membrane oxygenator*  
**M. Elenkov** (TU Wien), C. Janeczek, B. Lukitsch, P. Ecker, T. Keck, M. Harasek, M. Gföhler
- 16:05 *Optimization of oxygenators using computational fluid dynamics*  
**B. Lukitsch** (TU Wien), M. Elenkov, C. Janeczek, P. Ecker, T. Keck, M. Gföhler, M. Harasek
- 16:10 *Experimental development of functional units of intracorporeal assist devices*  
**C. Janeczek** (TU Wien), M. Elenkov, P. Ecker, B. Lukitsch, M. Hinteregger, M. Harasek, R. Willinger, M. Gföhler
- 16:15 *Experimental and numerical investigation of an intracorporeal pumping unit*  
**P. Ecker** (TU Wien), B. Lukitsch, M. Elenkov, C. Janeczek, T. Keck, M. Gföhler, M. Harasek
- 16:20 *A new approach to the mechanics of DNA: atoms-to-beam homogenization*  
**J. Kalliauer** (TU Wien), G. Kahl, S. Scheiner, C. Hellmich
- 16:25 *T<sub>2</sub><sup>\*</sup> relaxation characteristics of tendons and their dependence on the magic angle effect – A MR microscopy study with histological correlation*  
**B. Hager** (MedUni Wien), M.M. Schreiner, L. Hirtler, X. Deligianni, O. Bieri, A. Berg, S.M. Walzer, M. Zalaudek, R. Windhager, S. Trattnig, V. Juras
- 16:30 *Investigation of pump speed modulation and its timing on the risk of ventricular thrombosis*  
**T. Khienwad** (MedUni Wien), A. Maure, M. Ghodrati, F. Moscato, H. Schima, P. Aigner
- 16:35 *Investigation of the left ventricle apical flow field under left ventricular assist device support*  
**M. Ghodrati** (MedUni Wien), T. Khienwad, A. Maurer, T. Schlöglhofer, F. Moscato, F. Zonta, C. Gross, P. Aigner, H. Schima
- 16:40 *Progress in electrical-impedance tomography*  
**L. Taghizadeh** (TU Wien), D. Pasterk, E. Kaniusas, W. Weninger, C. Heitzinger



- 16:45 *Integrating HREM in multimodal imaging pipelines*  
**A. Seyedian Moghaddam** (MedUni Wien), S.H. Geyer, L.F. Reissig,  
W.J. Weninger
- 16:50 *Fabrication of high-resolution scaffolds using 2-photon polymerization*  
**G. Weisgrab** (TU Wien), O. Guillaume, Z.Guo, A. Poot, D. Grijpma,  
A. Ovsianikov
- 16:55 *Imaging of Gadolinium accumulation in bone by XRF*  
**A. Turyanskaya** (TU Wien), M. Rauwolf, V. Pichler, R. Simon,  
M. Burghammer, O. Fox, K. Sawhney, J. Hofstaetter, A. Roschger,  
P. Roschger, P. Wobrauschek, C. Strelt
- 17:00 *Engineered extracellular matrix enhances the bone regeneration potential  
of aged human bone marrow stromal cells*  
**D. Hanetseder** (LBI Trauma), T. Levstek, H. Redl, D. Marolt Presen
- 17:05 *Peripheral nerve regeneration and shockwave therapy*  
**D. Hercher** (LBI Trauma), J. Ferguson, C.M.A.P. Schuh, J. Heinzl, L. Gal,  
P. Heimel, R. Schmidhammer, H. Redl, A. Nógrádi, A. Hacobian
- 17:10 *Average of extracellular bone tissue composition is invariant across  
mammalian femora tissues*  
**L. Zelaya-Lainez** (TU Wien), H. Kariem, W. Nischkauer, A. Limbeck,  
C. Hellmich
- 17:15 *Rehabilitation of patients with global brachial plexus injury receiving bionic  
reconstruction*  
**A. Sturma** (MedUni Wien), L.A. Hruby, D. Farina, O.C. Aszmann

17:20 – 19:00

**Poster Presentations & Discussion**  
**Networking & Snacks**



## Nov 15 | Technische Universität Wien | Festsaal

Karlsplatz 13, 1040 Wien

09:00 Registration & Coffee

### 10:00 **Keynote Lecture Session**

**Chair: Dieter Pahr** (Technische Universität Wien)

10:00 *Tissue regeneration in the name of time and energy*  
**Petros Koidis** (University of Thessaloniki)

10:45 *Engineering meets medicine in biomedical imaging: laying the foundations for 3D X-ray histology*  
**Philipp Schneider** (University of Southampton)

11:30 *What can local funders do to strengthen a research location?*  
**Michael Stampfer** (W/WTF | Vienna Science and Technology Fund)

12:15 Lunch Break

### 13:30 **Thematic Session “Additive Manufacturing”**

**Chairs: Jürgen Stampfl** (Technische Universität Wien) and **Francesco Moscato** (Medizinische Universität Wien)

13:30 *Towards superior AM through tailored (bio)polymer design [Keynote]*  
**Sandra Vlierberghe** (University of Ghent)

14:05 *Additive Manufacturing of dental glass ceramics*  
**Sonja Baumgartner** (Technische Universität Wien)

14:25 *Control of the electrospinning process to manufacture scaffolds with definable fiber deposition*  
**Christian Grasl** (Medizinische Universität Wien)

14:45 **ViCEM Best PhD Award Ceremony**

co-sponsored by



15:00-16:00

**Networking & Farewell**