

## Curriculum Vitae – Dr. Mario Rothbauer, MSc

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Head of Orthopedic Microsystems

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### **Motivation/Area of Research**

My interdisciplinary background brings together cell biology, chemistry, engineering, material science, microfabrication, biosensing as well as bioengineering to develop miniaturized integrated systems for in vitro cell cultures, 3D cellular assemblies and tissue-like structures with the aim of understanding dynamic cellular responses to extrinsic and intrinsic stimuli and systemic stress factors governing human disease. With my research group I currently focus on musculoskeletal disease models including osteoarthritis, rheumatoid arthritis as well as fibrosis. The overall goal of my research lies in the establishment of next-gen human disease models as complimentary alternative approach to animal models for basic research, translational medicine and pharmaceutical drug screening.

### **1 HIGHER EDUCATION**

<u>November 2022</u>	<b>Habilitation ‘Biomedical Research’</b> (in external review) Medical University of Vienna, Vienna, Austria
<u>2011 – 07/2015</u>	<b>Dr. nat. techn. In Biotechnology (with high distinction)</b> University of Natural Resources and Life Sciences, Vienna, Austria
<u>2006 – 2011</u>	<b>MSc. in Biomedical Engineering (with high distinction)</b> University of Applied Sciences Technikum Wien, Vienna, Austria Specialization: Cell & Tissue Engineering
<u>2006 – 2009</u>	<b>BSc. in Biomedical Engineering (with high distinction)</b> University of Applied Sciences Technikum Wien, Vienna, Austria Specialization: Cell & Tissue Engineering

### **2 PROFESSIONAL POSITIONS**

<u>10/2021 –</u>	<b>Principal Investigator/Project leader (part-time)</b> Cell Chip Group, Institute of Applied Synthetic Chemistry & Institute of Chemical Technologies and Analytics, Faculty of Technical Chemistry, Vienna University of Technology, Vienna, Austria
<u>12/2019 – present</u>	<b>Group leader/Principal Investigator (full time)</b> Orthopedic Microsystems, Karl Chiari Lab for Orthopedic Biology Department of Orthopedics and Trauma Surgery Medical University of Vienna, Vienna, Austria
<u>10/2018 – 08/2020</u>	<b>Team leader/Technical consultant</b> (R&D Team Engineering of Bioassays) SAICO Biosystems KG, Vienna, Austria
<u>05/2018 – 11/2019</u>	<b>Senior PostDoc/Principal Investigator/Project leader</b> Cell Chip Group, Institute of Applied Synthetic Chemistry & Institute of Chemical Technologies and Analytics, Faculty of Technical Chemistry, Vienna University of Technology, Vienna, Austria
<u>04/2016 – 05/2018</u>	<b>Project assistant/PostDoc</b>

Cell Chip Group, Institute of Applied Synthetic Chemistry & Institute of  
Chemical Technologies and Analytics, Faculty of Technical Chemistry,  
Vienna University of Technology, Vienna, Austria

02/2011– 01/2016

**Freelance Junior Researcher**

Biosensor Technologies, Austrian Institute of Technology GmbH, Vienna, Austria.

### 3 SCIENTIFIC ACHIEVEMENTS

1. Group leader of the Orthopedic Microsystems group starting 2019 at the Karl Chiari Lab, MUW
2. Fulbright Scholar of the 2022 Visiting Scholar Program (HSS Research Institute, New York City)
3. Vice president of the European Society for Alternatives to Animal Testing (EUSAAT)/Austria
4. Herbert-Stiller-Award 2019 from Doctors Against Animal Experiments for “An animal-free multiplexed 3D synovium-on-a-chip as in vitro model for inflammatory arthritis” (20.000€ project)
5. Editorial board member of Organs-on-a-chip (Elsevier), as well as Frontiers in Bioengineering and Biotechnology - Section Biomechanics, Frontiers in Lab on a Chip Technologies, as well as MDPI Sensors and MDPI Applied Science
6. Science communication on national and international TV and online streaming
  - a. National Austrian TV broadcaster ServusTV format ‘P.M. Wissen’ on ‘Organs-on-a-chip as alternatives to animal models’
  - b. National online TV dorf.tv open house discussion on “Technik statt Tierleid” (translated title: Technology instead of animal suffering)
7. Invited conference talks at international scientific conferences:
  - a. SELECTBIO Clinical Translation of Organoids and Organs-on-Chips conference 21-22 March 2022 in Boston on ‘Bioengineering the inflammatory and degradative cross talk in arthritic diseases with patient-derived chondro-synovial joint-on-a-chip systems’
  - b. SELECTBIO Innovations in Microfluidics conference 17-18<sup>th</sup> August 2020 in Boston MA on ‘Joint-on-a-Chip as Alternative to Animal Models in Arthritis Research’
8. National and international funding achievements in 2019-2022 including the Austrian Ministry of Defense (BMLV) project ‘Living Sensor Drone’ (€ 99,721), FFG NanoLunCh project (€ 149,755), FFG Innovation voucher S and L (2016- 2022; total € 60,000), Feasibility study for the Austrian Ministry of Defense (€ 22,900), PROPFERD foundation project (CHF 14,900) and the HSP19 project (€ 20,000)
9. 5 Patent applications pending & 1 filed patent: EP19168889.4, A50933/2018 (PCT/AT2019/060362), EP18195997.4 (PCT/EP2019/075362), EP18183978.8 (PCT/EP2019/069166), WO2019068127A1, EP20173705.3
10. Book editorial for Springer: M Rothbauer and P Ertl “Cell-based Microarrays: Methods and Protocols” in Methods in Molecular Biology Series, ISSN 1064-3745, Series editor: John M. Walker, Humana Press, Springer USA