



DANUBE PRIVATE UNIVERSITY
Austria

Ph.D. Projects in “Precision and Personalized Medicine”

Academic year 2026/2027

Assoc. Prof. Youbin Zheng (Email: youbin.zheng@dp-uni.ac.at)

1. AI-Enabled Real-Time Urine Analysis for Personalized Health Management
2. Stiffness-Tunable Microneedle Sensors for Continuous Health Monitoring
3. Multifunctional Smart Dressings for Post-Surgical Wound Healing
4. High-Sensitivity Wearable Sensors for Early Detection of Degenerative Cervical Myelopathy

Prof. Hossam Haick, PhD (Email: hossam.haick@dp-uni.ac.at

1. A Novel Wearable Molecular Imaging Patch for Breast Cancer Detection and Therapeutic Evaluation
2. Mapping Pollution-Driven Alzheimer's Disease with Chemical Tomography
3. A Theranostic Precision Psychiatry Platform for Schizophrenia Integrating Spatiotemporal Scanner of Volatile Biomarkers, Organoids, and AI-Guided Clinical Trials
4. Eco-Friendly Wearable Patch for Suture-Free Wound Closure and Real-Time Healing Monitoring

Prof. Dr. Wolfgang Knoll (Email: wolfgang.knoll@mailbox.org)

1. Electronic Sensors to Quantify Health-Relevant Compounds Delivered by Microbiome Bacteria: Measuring Gut Microbiome Quality and Product Formation in Biotechnology – Co-Supervisor: Dr. Re. Nat. Frank Rosenau (Ulm University, Germany)
2. High-Performance Differential SELEX in Pharmaceutical Biotechnology: Specific Aptamers Against Antigen Binding Site of Antibodies Mimicking the Original Target Epitope – Co-Supervisor: Dr. Re. Nat. Frank Rosenau (Ulm University, Germany)
3. Biomimetic Electronic Smell Sensor for Breath Biopsy – Co-Supervisor: Dr. Re. Nat. Frank Rosenau (Ulm University, Germany)
4. DNA- and PNA Aptamer-Based Sensing Systems – Co-Supervisor: Prof. Roberto Corradini (University of Parma, Italy)

Prof. Dr. Winfried Neuhaus (Email: winfried.neuhaus@ait.ac.at)

1. Development and Implementation of Robust Blood-Brain Barrier Models into a Neurotoxicity In Vitro Test Battery
2. The Role of the Blood-Brain Barrier in Neurodevelopmental Diseases
3. Effects of Micro- and Nanoplastics on Human In Vitro Central Nervous System Models
4. Evaluation of New Treatment Targets for Cerebral Ischemic Events

Assist. Prof. Sepideh Hatamikia (Email: sepideh.hatamikia@dp-uni.ac.at)

1. Assessments of Alzheimer disease by an AI chatbot using longitudinal multi-modal data.
2. Multi-omics integration and AI to predict treatment response in gastrointestinal diseases
3. Developments of AI prediction tools for management of thyroid diseases/cancer

Assoc. Prof. Dr. Jakub Dostalek (Email: jakub.dostalek@dp-uni.ac.at)

1. Volatile Organic Compound (VOC) Detection in Exhaled Breath as an Alternative for Early Diagnostics - Co-Supervisor: Assist. Prof. Juan A. Allegretto (DPU).
2. Ultrasensitive Optical Biosensors with Digital Readout Format for Liquid Biopsy – Co-Supervisor: Naoto Asai, PhD.

Assoc. Prof. Maja Henjakovic (Email: maja.henjakovic@dp-uni.ac.at)

1. Impact of Oral Nano- and Microplastic Exposure on Cardiovascular Parameters in Humans
2. Plastic Particle-Induced Effects on Human Erythrocytes under Physiologically Relevant Particle Sizes, Shapes, Concentrations, and Conditions
3. Effects of Nano- and Microplastics on Human Renal Cells: Impact of Realistic Particle Sizes, Shapes, and Concentrations under Physiological and Pathophysiological Conditions



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Univ.-Prof. Dr. Christoph Kleber (Email: christoph.kleber@dp-uni.ac.at)

- Surface Modification and Materials Development of Medical Implants with Tailored Osseointegration or Bioresorbable Properties
- Universal Platform for Intelligent Nosing and Sensing

Univ.-Prof. Dr. Ralf Braun (Email: ralf.braun@dp-uni.ac.at)

- Dissecting Evolutionary Conserved Mechanisms of Proteostasis in Yeast Models for Human TDP-43 Proteinopathies
- Specific Changes in Saliva Composition under Physiological and Pathophysiological Conditions and Consideration of Possible Diagnostic Potentials
- Environmental Triggers of Protein Misfolding in Neurodegenerative Disorders

Assoc. Prof. Dr. Mandana Amiri (Email: mandana.amiri@dp-uni.ac.at)

- Nanoplastic Electrochemical Sensing Using a Smart Peptide-Based Interface
- MOF–Aptamer Hybrid Electrochemical Biosensor for Rapid Tuberculosis Diagnostics
- Multiplex Electrochemiluminescence Sensor for Cardiovascular Disease
- Electrochemiluminescence Approach for the Sensing of Viral DNA

Prof. Dr. Atanas G. Atanasov (Email: atanas.atanasov@lbg.ac.at)

- Communicating Pharmacologically Active Substances: A Social Media-Based Analysis – Supervisor: Olena Litvinova (DPU)
 - Public Perception and Misinformation on Dietary Supplements reflected on Social Media - Co-Supervisor: Olena Litvinova (DPU).
 - Communicating Metabolic Health: Public Perceptions and Social Media Strategies for Raising Awareness of Metabolic Syndrome - Co-Supervisor: Olena Litvinova (DPU).
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Prof. Dr. Ramona Woitek (MIAAI) (Email: ramona.woitek@dp-uni.ac.at)

1. Multimodal Data Integration and AI for Prognostication in Diseases of the Gastrointestinal Tract – Co-Supervisor: Prof. Dr. Thomas Matthias Scherzer (University Hospital Wiener Neustadt, Gastroenterology and Hepatology)
2. AI and Multiomics for the Development of Predictive Biomarkers in Ovarian Cancer – Co-Supervisor: Dr. Zoltan Derzsy (University Hospital Wiener Neustadt, Gynaecology and Obstetrics)

Prof. Dr. Julia Furtner-Srajer (Email: julia.furtner-srajer@dp-uni.ac.at)

1. Exploring the Relationship Between Muscle Loss and Cognitive Decline: Sarcopenia in the Context of Dementia Severity.

Assist. Prof. Dr. Olgica Zaric (Email: olgica.zaric@dp-uni.ac.at)

1. Advanced Deep Learning Methods for Super-Resolution Data Reconstruction for X-Nuclei Imaging – Co-Supervisor: Prof. Dr. Ramona Woitek (DPU).

Assist. Prof. Dr. Amirreza Mahbod (MIAAI) (Email: amirreza.mahbod@dp-uni.ac.at)

1. Advancing Computational Pathology with Foundation Models – Co-Supervisors: Prof. Dr. Wolfgang Hulla (University Hospital Wiener Neustadt, Dermatology); Prof. Dr. Ramona Woitek (DPU)
 2. Deep Learning-Based Methods for Joint Nuclei and Tissue Segmentation in Histopathology – Co-Supervisors: Prof. Dr. Wolfgang Hulla (University Hospital Wiener Neustadt, Dermatology); Prof. Dr. Ramona Woitek (DPU)
 3. AI-Powered Computational Approaches for Enhanced Skin Lesion Image Analysis – Co-Supervisors: Prof. Dr. Robert Müllegger (University Hospital Wiener Neustadt, Dermatology); Prof. Dr. Ramona Woitek (DPU)
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