

# Curriculum Vitae

## Richard Grünes

### Personal Data:

Family name: Grünes  
First name: Richard  
Date of birth: November 22, 1975  
Place of birth: Sokolov, Czech Republic  
Nationality: Czech  
Citizenship: Czech Republic, EU

### Contacts:

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### Education and Professional Studies:

Degree: Ph.D.; Institution: Czech Technical University in Prague, Faculty of Biomedical Engineering; thesis: “Study of electrophysiological properties of brain tissue during artificial ventilation”; 2012

Degree: M.Eng. (Ing.); Institution: Czech Technical University in Prague, Faculty of Electrical Engineering; thesis: “Software for rehabilitation device REHATOM”; 2006

Short time courses:

VEGRAM – Practical course in ventilation physiology at Biomodels, with special focus on the model and the management of ARDS (Institute of Physiology, First Faculty of Medicine, Charles University in Prague, 2011, Prague, Czech Republic); Principles of measurement with optical biosensors (Institute of Radio Engineering and Electronics of the Academy of Sciences of the Czech Republic – ASCR, 2006, Prague, Czech Republic); A COMSOL Multiphysics application to solve multiphysics problems (Humusoft s.r.o., 2009, Prague, Czech Republic)

### Appointments:

Date: 2006 – present  
Organization: Czech Technical University in Prague, Faculty of Biomedical Engineering  
Position: Assistant Professor, Researcher

Date: 2009 – present  
Organization: Technical University of Liberec, Institute of Health Studies  
Position: Senior Lecturer

Date: 2006 – 2011  
Organization: Charles University in Prague, First Faculty of Medicine  
Position: Senior Lecturer

Date: 2007 – 2008  
Organization: University of South Bohemia, Faculty Of Health and Social Studies  
Position: Senior Lecturer

Since 2006, I'm a member of Non-Conventional Ventilatory Team of the Czech Republic ([www.ventilation.cz](http://www.ventilation.cz)) Established at Czech Technical University in Prague, Faculty of Biomedical Engineering, Department of Biomedical Technology. The aim of our team is to contribute to research of HFOV and other unconventional ventilatory techniques. We also deal with optimization of ventilatory strategies, advanced monitoring techniques in respiratory care, modeling of the respiratory system and development of novel respiratory care equipment.

#### **Research Co-operation:**

Establishment: Institute of Physiology, First Faculty of Medicine, Charles University in Prague, Prague, Czech Republic (2011 – present)

Research Topic: Optimization of artificial lung ventilation

Establishment: Department of Normal, Pathological and Clinical Physiology Third Faculty of Medicine, Charles University in Prague, Prague, Czech Republic (2007 – 2011)

Research Topic: Study of electrophysiological properties of brain tissue during artificial ventilation

#### **Research projects:**

Date: 2006-2011

Project: Research Project MSM6840770012 Transdisciplinary Research in the Field of Biomedical Engineering II. TÚ B5.1 Optimisation of artificial lung ventilation

Position: co-investigator

#### **Study Stay Abroad:**

Country: Ireland

Date: February – June 2004

Details: Sligo Institute of Technology, Ballinode, Sligo: Research on biomedical engineering (modeling in biomedicine), a study visit

#### **Teaching experience:**

Czech Technical University in Prague, Faculty of Biomedical Engineering, since 2006 to present. Bachelor's and master' subjects: Equipment for Anesthesiology and Resuscitation, Sensors in medicine, Electrical Measurements, Electromagnetic Field of Living Organisms, Respiratory Therapy 1, Techniques in the Prehospital and Hospital Emergency Care, Medical Devices & Equipment, Medical Device Survey, Medical imaging systems, Design and construction of medical devices/Practical exercises, Medical Legislation and Standards.

Technical University of Liberec, Institute of Health Studies, since 2009 to present. Subjects: Medical Devices, Electromagnetic Field of Living Organisms

Charles University in Prague, First Faculty of Medicine, since 2006 to 2011. Subjects: Technical Aspects of Medical Devices 1 and 2, Imaging Systems in Medicine 1 and 2.

University of South Bohemia, Faculty Of Health and Social Studies, since 2007 to 2008. Subject: Biomedical Engineering Fundamentals.

**Research projects:**

- Date: 2006–2011  
Project: MSM6840770012 Transdisciplinary Research in the Field of Biomedical Engineering II, TÚ B5.1 Optimization of artificial lung ventilation  
Position: member of research team
- Date: 2010  
Project: SGS OHK4-041/10- Optimization of non-conventional techniques of artificial lung ventilation  
Position: co-investigator
- Date: 2011–(2013)  
Project: SGS11/171/OHK4/3T/17 Optimization of non-conventional techniques of artificial lung ventilation II  
Position: co-investigator
- Date: 2009–2011  
Project: NS10087-4/2008 Establishing a new method of heliox administration in the management of acute exacerbation of chronic obstructive lung disease  
Position: technical support

**Selected Publications:**

- Grünes, R. - Roubík, K. Possibilities of Intracranial Monitoring of Local Physiological Parameters. In: Lékař a technika. 2008, vol. 38, no. 2, p. 156-159. ISSN 0301-5491.
- Grünes, R. - Roubík, K. Electrical Impedance Tomography and its Application in Respiratory Care. In: Lékař a technika. 2008, roč. 28, č. 1, s. 42-47. ISSN 0301-5491.
- Roubík, K. - Grünes, R. Monitoring system of high-frequency ventilation and lung mechanics [Prototype]. 2007.
- Strnadová, A. - Grünes, R. Optimization of a Semi-Closed Circuit for a New Way of Heliox Application in COPD Exacerbation Patients. In: POSTER 2010 - Proceedings of the 14th International Conference on Electrical Engineering [CD-ROM]. Prague: CTU in Prague, FEL, 2010, ISBN 978-80-01-04544-2.