

Curriculum Vitae

Jakub Ráfl

Personal Data:

Family name: Ráfl
First name: Jakub
Date of birth: August 4, 1981
Place of birth: Prague, Czech Republic
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Education and Professional Studies:

Degree: M.Eng. (Ing.); Institution: Czech Technical University in Prague, Faculty of Electrical Engineering; thesis: “Artificial Ventilation Simulator”; 2008.

Non-degree undergraduate exchange student; Institution: Kansas State University, Manhattan, KS, USA, 2005–2006.

Short time courses: Vetram – course of ventilatory physiology focused on biomodel of ARDS (Charles University in Prague, April 13, 2012, Prague, Czech Republic); Introduction to Measurement Techniques (VKI – von Karman Institute for Fluid Dynamics, October 10–14, 2011, Sint-Genesius-Rode, Belgium); Fluid Dynamics of Biological Flows (VKI – von Karman Institute for Fluid Dynamics, May 17–21, 2010, Sint-Genesius-Rode, Belgium); Biomedical Engineering in a European Perspective 2007 (University of Applied Sciences Oldenburg/Ostfriesland/Wilhelmshaven, August 27–September 14, 2007).

Appointments:

Date: 2008 – present
Organization: Czech Technical University in Prague, Faculty of Biomedical Engineering
Position: Research and Teaching Assistant

Research Co-operation:

Establishment: Charles University, First Faculty of Medicine, Faculty Thomayer Hospital, Prague – Krč, Department of Anesthesia and Critical Care Medicine (2011 – present)

Research topics: Technical solution of heliox application, clinical research of heliox effects in COPD patients

Establishment: VU University Medical Center, Pediatric Intensive Care, Amsterdam, The Netherlands (2008 – present)

Research Topics: Optimization of artificial lung ventilation, design and development of the Demand Flow System

Awards and Honors:

Chancellor's Prize for an outstanding research result, Czech Technical University in Prague, 2011.

Outstanding Diploma Thesis Award by the Dean of the Faculty of Electrical Engineering, Czech Technical University in Prague, 2008.

Professional Memberships:

Member: IEEE (The Institute of Electrical and Electronics Engineers). New York City, NY, U.S.A. (since 2011).

Teaching experience:

Czech Technical University in Prague, Faculty of Biomedical Engineering, since 2009 to present. Bachelor's and master' subjects: Electrical Measurements, Equipment for Anesthesiology and Resuscitation, Fluid Mechanics in Biomedicine, Medical Devices and Equipment, Research Methodology, Respiratory Therapy 2.

Publications:

Roubík K., van Heerde M., Markhorst D. G., Ráfl J.: Design and evaluation of a system assuring spontaneous breathing in patients connected to a High-Frequency Oscillatory Ventilator. In: A. Jobbágy, ed. *5th European Conference of the International Federation for Medical and Biological Engineering, Budapest, 14.–18. 9. 2011*. Berlin: Springer, 2012, pp. 695–698. ISBN 978-3-642-23507-8.

Matějka, J., Ráfl, J., Čech, M., Rožánek, M.: Ventilator circuit model for optimization of high-frequency oscillatory ventilation. *Lékař a technika*, vol. 42, no. 2, pp 61–64, 2012.

Roubík K., Ráfl J., van Heerde M., Markhorst D. G.: Design and control of a demand flow system assuring spontaneous breathing of a patient connected to an HFO ventilator. *IEEE Transactions on Biomedical Engineering*, vol. 58, no. 11, pp. 3225–3233, 2011.

Ráfl J., Roubík K.: Physical models of the respiratory system and their applications [in Czech: Fyzické modely respirační soustavy a možnosti jejich využití]. *Lékař a technika*, vol. 39, no. 1, pp 5–14, 2009.

Roubík K., Ráfl J.: Compliance and resistance in the rigid models of the respiratory system [in Czech: Poddajnost a rezistance v rigidních modelech respirační soustavy]. *Lékař a technika*, vol. 39, no. 1, pp 32–38, 2009.