

Education

- **PhD**

PhD in Biomedical Engineering – Joseph Fourier University (UJF) – France.

Master

Master in Biomedical Engineering / Models, Images and Instrumentation in Medicine and Biology - Joseph Fourier University (UJF) – France.

Distinction: Valedictorian as well as the best master thesis-holder.

- **BSc of Biomedical Engineering.**

1998-2003 University of Science and Technology- Engineering Faculty- Jordan.

Professional Experience

Research:

2005-2008: "Fellowship of Young Researchers" financed by French Ministry of Higher Education and Research – Research center: Center of Medical Engineering – Grenoble - France.

2008 – 2009: Researcher – Department of Electrical Engineering - UJF – France

2009 – 2010: Researcher– Polytech' Grenoble Engineering School – France.

2010: Full time lecturer - Jordan University of Sciences and Technology.

2011: Assistant professor - Jordan University of Sciences and Technology.

Teaching:

2006 -2008: Teacher Assistant – Department of Biomedical Engineering – UJF – France.

2008 – 2009: Full time Lecturer – Department of Electrical Engineering - UJF – France

2009 – 2010: Full time Lecturer – Polytech' Grenoble Engineering School – France

2010: Full time lecturer - Jordan University of Sciences and Technology.

2011: Assistant professor - Jordan University of Sciences and Technology.

Scientific Projects:

1- Member in the French project SAPHIR: ‘‘a Systems Approach for Physiological Integration of Renal, cardiac, and respiratory functions’’ which is the French part of the European project VPH ‘‘Virtual Physiological Human’’.

2- VEQU ‘‘Ventilation with a good quality of patient-ventilator agreement’’

3- Member in the *Franco-Canadian* project ‘‘Relative recruitment of inspiratory muscles during spontaneous and imposed breathing patterns in healthy humans at constant CO₂ levels’’.

4- Project ‘‘Customized monitoring of soldier health state’’ financed by DGA - the French ministry of defense.

Publications:

Journals:

** Oweis. R and **Abdulhay. E**, *Seizure identification in EEG signals utilizing Huang and Hilbert transforms*. Biomedical Engineering online. 2011; 10: 38.

** Julie Fontecave, **Abdulhay. E**, Pascale Calabrese, Pierre Baconnier and Pierre-Yves Guméry, *A model of mechanical interactions between heart and lungs*, Phil. Trans. R. Soc. A, 2009, pp 4741-4757.

** **Abdulhay. E**, Pierre-Yves Guméry, Julie Fontecave Jallon, Pierre Baconnier, *Cardiogenic Oscillations Extraction in Inductive Plethysmography: Ensemble Empirical Mode Decomposition*, Proc IEEE Eng Med Biol Soc. 2009, pp 2240-3.

** **Abdulhay. E** and Baconnier. P, *Stroke volume estimation by thoracocardiography is better when glottis is closed*. Proc IEEE Eng Med Biol Soc. 2007, pp 1074-7.

** Thomas S, **Abdulhay E**, Baconnier P, Fontecave J, Françoise JP, Guillaud F, Hannaert P, Hernandez A, Le Rolle V, Maziere P, Tahi F, Zehraoui, *SAPHIR - a multi-scale, multi-resolution modeling environment targeting blood pressure regulation and fluid homeostasis*. Proc IEEE Eng Med Biol Soc. 2007, pp 6648-51.

****Abdulhay. E**, et Baconnier. P, *L'Estimation du Volume d'éjection Par La Thoracocardiographie est meilleure Quand la Glotte est Fermée*, ITBM-RBM - Elsevier Masson. 2008, pp 297-301.

T. Trippenbach, L. Heyer, E. Aitocine, P-Y. Guméry, **Abdulhay. E and P. Baconnier, *Relative recruitment of inspiratory muscles during spontaneous and imposed breathing patterns in healthy humans at constant CO₂ levels*, Submitted to Journal of Applied Physiology.

** **Abdulhay. E**, Pierre Yves Guméry and Elise Aitocine, *Inspiratory muscle activation timing and inspiratory effort level classification for ventilated patient: toward a merging model of EMG indicators to improve the patient-ventilator agreement*.
http://master-ism.ujf-grenoble.fr/pages/m2/MIMB/ARTICLES/stage2004_Abdulhay.Pdf

International conferences:

**** Abdulhay. E** and Tamimi. O, *Development of a Simulator for Patient–Ventilator Interaction in Non-Invasive Mask Ventilation* - IEEE-EMBS International conference of Biomedical and Health Informatics – 2012 - Hong Kong .

**** Abdulhay. E**, Pierre-Yves Guméry, Julie Fontecave and Pierre Baconnier, *Simple Cardio-Respiratory Model Applied to the Validation of Cardiogenic Extraction by Empirical Decomposition* - Congress of Medical Physics and Biomedical Engineering 2009 – Munich – Germany.

National conferences:

**** Julie Fontecave, Abdulhay. E**, Pierre Baconnier, Pascale Calabrese. *"Mechanical Cardiorespiratory model and Interactions"*- The National Conference of Theoretical Biology– 8-11 June 2008- St-Flour - France.

**** E. Abdulhay**, Pascale Calabrese, Julie Fontecave-Jallon, Pierre-Yves Gumery, Pierre Baconnier. *Respiratory Inductive Plethysmography for noninvasive cardio-respiratory monitoring*. Congress of Physiology, Pharmacology and Therapeutic, Grenoble, Mars 2011.

****Julie Fontecave-Jallon, E. Abdulhay**, Pierre-Yves Gumery. *Décomposition Empirique Modale pour l'étude des interactions cardio-respiratoires volumétriques : une approche simulée*. The national conference of GRETSI, Bordeaux, France, September 2011.

**** Julie Fontecave-Jallon, E. Abdulhay**, Pierre Baconnier et Pascale Calabrese. *Modélisation mathématique des échanges de gaz respiratoires dans l'organisme*. The National Conference of Theoretical Biology, St-Flour, France, June 2009

**** Abdulhay. E**, Pierre-Yves Guméry, Julie Fontecave and Pierre Baconnier, " *Newborn apnea syndrome*"- GDR - Paris.

**** Abdulhay. E**, Pierre-Yves Guméry et Pierre Baconnier, *Extraction of Cardiogenic oscillations by Empirical Decomposition*, Medical Research day 2008 – Grenoble.

International project reports:

**** Project ANR-06-BYOS-0007-01** – SAPHIR Project Report of activity of 2007 submitted to the ANR.

**** Projet ANR-06-BYOS-0007-01** - SAPHIR Project Report of activity of 2008 submitted to the ANR.