

Ph.D Student

Schmitt Cédric

Schmitt.cedric@gmail.com

Education

- From May 2006 **University of Montreal**, Canada.
Doctor of Philosophy (Ph.D) in Biomedical Engineering.
Area of concentration : biomedical engineering.
- August 2005 to December 2005 **Beijing University of Post and Telecommunications**, China.
Minor in Chinese language.
- January 2003 to July 2005 **University of Montreal**, Canada.
Master of Applied Science program (M.Sc.A) in Biomedical Engineering.
Area of concentration : biomedical engineering.
- October 2001 to February 2002 **Ecole Nationale Supérieure de Physique de Strasbourg** (leading French school in physics, part of ULP – Louis Pasteur University in Strasbourg, France).
Area of concentration : biomedical engineering.
- September 1999 to June 2001 **Ecole Nationale Supérieure d'Ingénieurs Electriciens de Grenoble** (leading French school in electrical engineering, part of INPG – Grenoble National Polytechnic Institute, France).
Two-year program in electric power, electronics, process control, signal processing, image processing, computer science.
Area of concentration : signal processing and systems.

Work Experience

- May 2006 to now Research project as part of my Ph.D program in the **Laboratory of Biorheology and Medical Ultrasonics** (LBMU), at the university of Montreal Hospital, within the department of radiology, Qc, Canada.
subject: Dynamic vascular elastography.
- January 2004 to July 2005 Research project as part of my master program in the **Laboratory of Biorheology and Medical Ultrasonics** (LBMU), at the university of Montreal Hospital, within the department of radiology, Qc, Canada.
subject: Non Invasive vascular elastography: toward a complementary characterization tool of atherosclerosis in carotid arteries.
- June 2005 One week training period in Ultrasonix Medical Corporation, Burnaby, BC, Canada.
- March-August 2002 Internship as part of my studies in the school in biomedical engineering for 6 months in the **Neural Rehabilitation Engineering Laboratory** (GREN), at the Université Catholique de Louvain, Bruxelles (UCL) within the Department of Physiology and Pharmacology, Belgium.
subject: Approach of an "intelligent" image processing within the framework of the visual prostheses.
- July-September 2001 Internship as part of my studies in the school in electrical engineering for 3 months in the **Biotransport and Metabolic Monitoring Laboratory** (biosensor team), at the University of California, San Diego (UCSD) within the Department of Bioengineering, CA, USA.
subject: An accurate waterproof, radio-telemetry portable data-logger with potentiostat for oxygen sensor data acquisition.

April-June 1999

Internship as part of my studies in the DUT at the university of technology in Grenoble (IUT), for 10 weeks in the biomedical engineering laboratory TIMC (**Techniques of Imagery, Modelisation and Cognition**) within the School of Medicine, France.

Subject : Foetal monitoring for ambulatory use in telemedicine.

Publications

Written communications

C. Schmitt, A. Hadj Henni and G. Cloutier, "Viscoelastic Characterization of Soft Tissues by Dynamic Micro-Elastography (DME) in the Frequency range of 300 Hz – 1500 Hz", IEEE Ultrasonics Symposium, 2-5, Beijing, China, November 2008.

C. Schmitt, A. Hadj Henni and G. Cloutier, "Dynamic Micro-Elastography (DME) applied to viscoelastic characterization of mimicking carotid arteries", IEEE Ultrasonics Symposium, 2-5, Beijing, China, November 2008.

A. Hadj Henni, **C. Schmitt**, and G. Cloutier, "Shear Wave Induced Resonance: a new excitation mode for dynamic elastography imaging", IEEE Ultrasonics Symposium, 2-5, Beijing, China, November 2008.

A. Hadj Henni, **C. Schmitt** and G. Cloutier. "3D transient and harmonic shear-wave scattering by a soft cylinder for dynamic vascular elastography". J. Acoust. Soc. Am., in press, 2008.

J.F. Desprez, E. Brusseau, **C. Schmitt**, G. Cloutier, O. Basset, "3-D estimation of soft biological tissue deformation from radio-frequency ultrasound volume acquisitions", Medical Image Analysis, in press, 2008.

E. Mercure, G. Cloutier, **C. Schmitt**, R.L. Maurice. "Performance evaluation of different implementations of the Lagrangian speckle model estimator for non-invasive vascular ultrasound elastography". Med. Phys., accepted for publication, 2008.

A. Hadj Henni, **C. Schmitt** and G. Cloutier, "Analytical Modeling of Plane Shear Wave Diffraction by a Radially Layered Cylinder for Dynamic Vascular Elastography", IEEE Ultrasonics Symposium, 28-31 October 2007, New York, USA.

C. Schmitt, A. Hadj Henni and G. Cloutier, "Characterization of time-varying mechanical viscoelastic parameters of mimicking deep vein thrombi with 2D dynamic elastography", IEEE Ultrasonics Symposium, 28-31, New York, USA, October 2007.

C. Schmitt, G. Soulez, R.L. Maurice, M.F. Giroux, G. Cloutier. "Non-invasive vascular elastography (NIVE): toward a complementary characterization tool of atherosclerosis in carotid arteries. ", Ultrasound in Medicine and Biology, Med. Phys., Vol.33, No. 12, pp. 1841-1858, 2007.

J. Fromageau, J.-L. Gennisson, **C. Schmitt**, R. L. Maurice, R. Mongrain and G. Cloutier, "Estimation of polyvinyl alcohol mechanical properties with four elastography methods. ", *IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control*, 54(3), 498-509, 2007.

C. Schmitt, R. L. Maurice, S. Lanthier, M.-F. Giroux, G. Soulez and G. Cloutier. "Development of non-invasive vascular elastography for carotid artery plaque assessments". *IEEE Ultrasonic Symposium*, Rotterdam, Netherlands, 2005.

J.-L. Gennisson, J. Fromageau, **C. Schmitt**, R. L. Maurice, R. Mongrain and G. Cloutier. "Assessment of Mechanical Properties of PVA-C with Four

Different Elastographic Methods”. *IEEE Ultrasonic Symposium*, Rotterdam, Netherlands, 2005.

C. Schmitt, R. L. Maurice, J.-L. Gennisson and G. Cloutier. “Non-Invasive Vascular Elastography based on a New 2-D Strain Estimator : Simulation and in vitro Results”. *IEEE Ultrasonic Symposium*, Montreal, Canada, 2004.

C. Laloyaux, **C. Schmitt**. “Which image processing algorithms best describe the minimal amount of visual information required for image recognition? ”. *25th Annual Meeting of the Cognitive Science Society*. Boston, USA, 2003.

J. Delbeke, B. Gérard, V. Lambert, C. Laloyaux, **C. Schmitt** and C. Veraart. “A first attempt to translate images in optic nerve stimuli for a visual prosthesis”. *Proceedings of the Annual meeting of the Association for Research in Vision and Ophthalmology (ARVO)*, Ft. Lauderdale, USA, 2003.

Oral communications

E. Montagnon, A. Hadj Henni, **C. Schmitt**, and G. Cloutier. “Shear-Wave Induced Resonance Elastography (SWIRE) of Elliptical Mechanical Heterogeneities.” *International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, Austin, U.S.A., 2008.

A. Hadj Henni, **C. Schmitt**, and G. Cloutier. “3D Analytical Modeling of Transient and Harmonic Plane Shear Waves Diffraction by Soft Cylinders for Dynamic Vascular Elastography.” *International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, Santa Fe, U.S.A., 2007.

C. Schmitt, A. Hadj Hanni, and G. Cloutier, “Characterization of viscoelastic parameters of mimicking deep vein thrombi with 2D dynamic elastography: preliminary results.” *The 14th New England Doppler Conference*, Maastricht, Netherlands, 2007.

J.L. Gennisson, J. Fromageau, **C. Schmitt**, R.L. Maurice, R. Mongrain and G. Cloutier. “Assessment of mechanical properties of PVA-C with 4 different elastographic methods.” *International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, Austin, U.S.A., 2005.

V. Lambert, C. Laloyaux, **C. Schmitt**, B. Gérard, J. Delbeke and C. Veraart. Localisation, discrimination, and grasping of daily life objects with an implanted optic nerve prosthesis. *Proceedings of the Annual meeting of the Association for Research in Vision and Ophthalmology (ARVO)*, Ft. Lauderdale, USA, 2003.

Scholarships and Awards

First prize for the project: «**Characterisation of Carotid Artery Plaque with Non-Invasive Vascular Elastography : From a Mathematical Model to Phases 1 and 2 Clinical Trial**» developed by Roch L. Maurice, Guy Cloutier, **Cédric Schmitt**, Isabelle Renaud, Louise Allard, Sylvain Lanthier, Marie-France Giroux and Gilles Soulez. 9th edition of the *Innovation-Research* contest organized by the Association of Health Technologies Industry (AITS), March 2006, Montreal.

Scholarship from the **Biomedical Science and Technologies Research Group** (GRSTB), 2007-2008.

Scholarship from the **Graduated Faculty of the University of Montreal**, 2004-2005.

Scholarship from the **Graduated Faculty of the University of Montreal**, 2003-2004.

Scholarship from the **Grenoble Polytechnic National Institute**, 2000-2001.

Scholarship from the **General Council of Isère region**, 2000-2001.

Scholarship (ERASMUS) from the **European Union**, 2001-2002.