



# Pol GRASLAND-MONGRAIN

## PhD

Interested by new multiphysics medical imaging technologies



pol.grasland-mongrain@ens-cachan.org  
52 rue Jean Moulin 34400 Lunel-Viel (France)  
Born on 6. May 1987 in Montréal  
French and Canadian nationalities

### Jobs and studies

SINCE 2014	<b>Post-doctoral fellow</b> in the LBUM, Research Center of the Hospital Center of the University of Montreal <i>New ultrasound elastography techniques</i>
2010-14	<b>PhD in Physics</b> in the LabTAU, Inserm u1032, Université de Lyon <i>Applications of the Lorentz force in medical acoustics,</i> With 1 patent, 4 publications as first author in peer-reviewed journals, 8 presentations to international conferences, 5 public conferences and 5 awards
2009-10	<b>Master of Sciences Medical Physics</b> in Ecole Polytechnique Universitaire de Lyon, University of Lyon Internship in ESPCI ParisTech
2006-09	<b>Diploma of Ecole Normale Supérieure de Cachan</b> , major physics, speciality imaging Internship in ESPCI ParisTech, in Trinity College Dublin, in Institut Curie, in Philips Healthcare
2004-06	Classes préparatoires aux grandes écoles

### Skills

PROJECT MANAGEMENT	Direct supervision of six trainees (four during PhD, two during post-doc) <i>University certificate in Industrial system management</i>
TEACHING	+400h of teaching of physics and math in university <i>PhD courses : Oral expression, Communication in teaching</i>
ADMINISTRATIVE RESPONSABILITIES	Member of Student committee of the CRCHUM (since 2014) Member of Scientific Counsel of INSERM u1032 (2010-13) Elected member of the Student Counsel of the Ecole Normale Supérieure de Cachan (2007-08) <i>PhD courses : Analysis of group dynamics, Animation of groups</i>
LANGAGES	<b>French:</b> mother tongue <b>English:</b> professional level; 965/990 at the TOEIC test (2008) <b>German:</b> good level; 9 years of studies
INFORMATICS	Windows, Linux ; Matlab, C++ ; Office, Photoshop, Illustrator et open source equivalents

### Other informations

ASSOCIATIONS	Elected member to the Administration Counsel of the Cr@ns, which manages access to Internet on the Ecole Normale Supérieure de Cachan campus (2008-2010) Writer of the student journal of the Ecole Normale Supérieure de Cachan (2009-2013)
OTHER QUALIFICATIONS	First help formation (PSC-1 diploma from the Red Cross) Driver's license
HOBBIES	Board games Cello Watercolor Bicycling, climbing

## Scientific communications

### PEER-REVIEWED JOURNALS

- Contactless remote induction of shear waves in soft tissues using a transcranial magnetic stimulation device*  
**P Grasland-Mongrain**, E Miller-Jolicoeur, A Tang, S Catheline, G Cloutier  
Physics in Medicine and Biology, 61(6), 2016
- Electrolysis-induced bubbling in soft solids for elastic-wave generation*  
S Montalescot, B Roger, A Zorgani, R Souchon, **P Grasland-Mongrain**, R Slama, JC Bera, S Catheline  
Applied Physics Letters, 108, 2016
- Acousto-electrical speckle pattern in Lorentz force electrical impedance tomography*  
**P Grasland-Mongrain**, F Destrempe, JM Mari, R Souchon, S Catheline, JY Chapelon, C Lafon, G Cloutier,  
Physics in Medicine and Biology, 60(9), 2015
- A mathematical and numerical framework for ultrasonically-induced Lorentz force electrical impedance tomography*  
H Ammari, **P Grasland-Mongrain**, P Millien, L Seppecher, J-K Seo,  
Journal de Mathématiques Pures et Appliquées, 103(6), 2015
- Imaging of Shear Waves Induced by Lorentz Force in Soft Solids*  
**P Grasland-Mongrain**, S Catheline, R Souchon, F Cartellier, A Zorgani, JY Chapelon, C Lafon,  
Physical Review Letters 113 (3), 2014
- Lorentz Force Hydrophone Characterization,*  
**P Grasland-Mongrain**, JM Mari, B Gilles, A Poizat, JY Chapelon, C Lafon,  
IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control, 61 (2), 2014
- Lorentz Force Electrical Impedance Tomography,*  
**P Grasland-Mongrain**, JM Mari, JY Chapelon, C Lafon,  
Innovation and Research in BioMedical engineering, 34 (5-6), 2013
- Electromagnetic hydrophone with tomographic system for absolute velocity field mapping*  
**P Grasland-Mongrain**, JM Mari, B Gilles, JY Chapelon, C Lafon  
Applied Physics Letters, 100 (24), 2012
- Ordered packings of bubbles in columns of square cross-section*  
S Hutzler, J Barry, **P Grasland-Mongrain**, D Smyth, D Weaire  
Colloids and Surfaces A: Physicochemical and Engineering Aspects, 344 (1), 2009

### PATENT

- Shear Wave Imaging Method and Installation for Collecting Information on a Soft Solid,*  
S Catheline, JY Chapelon, P Grasland-Mongrain, C Lafon, R Souchon,  
Europe n° 13305987.3, 11 juillet 2013

### INTERNATIONAL CONGRESS

- Shear waves induced by light (invited)*  
**P Grasland-Mongrain**, Y. Lu, F Lesage, S Catheline, G Cloutier  
Optical and UltraSound imaging, Lyon (France), June 2016
- Contactless induction of shear wave using a Transcranial Magnetic Stimulation device*  
**P Grasland-Mongrain**, E Miller-Jolicoeur, S Cathelin, A Tang, G Cloutier  
International Tissue Elasticity Conference, Bardolino (Italy), September 2015
- Contactless induction of shear wave*  
**P Grasland-Mongrain**, E Miller-Jolicoeur, S Cathelin, A Tang, G Cloutier  
Artimino conference, Helsinborg, June 2015
- Acousto-electrical speckle pattern in Lorentz force electrical impedance tomography*  
**P Grasland-Mongrain**, F Destrempe, JM Mari, R Souchon, S Catheline, JY Chapelon, C Lafon, G Cloutier,  
Electrical Impedance Tomography Conference, Neuchâtel, June 2015

*Acousto-electrical speckle pattern in Lorentz force electrical impedance tomography*  
**P Grasland-Mongrain**, F Destrempes, JM Mari, R Souchon, S Catheline, JY Chapelon, C Lafon, G Cloutier,  
*Shear wave elastography by Lorentz force: ex-vivo experiment and computer simulation*  
**P Grasland-Mongrain**, S Catheline, R Souchon, F Cartellier, A Zorgani, JY Chapelon, C Lafon  
 IEEE International Ultrasonics Symposium, Chicago, Septembre 2014

*Ultrasound velocity mapping with Lorentz Force Hydrophone,*  
**P Grasland-Mongrain**, JM Mari, B Gilles, B Roussel, A Poizat, JY Chapelon, C Lafon,  
*Thermal lesion imaging using Lorentz force : Proofs of concept,*  
**P Grasland-Mongrain**, S Catheline, R Souchon, F Cartellier, A Zorgani, JY Chapelon, C Lafon,  
 Acoustical Society of America Symposium, San Francisco, December 2013

*Imaging of Shear Waves Induced by Lorentz Force in Soft Tissues*  
**P Grasland-Mongrain**, S Catheline, R Souchon, F Cartellier, A Zorgani, JY Chapelon, C Lafon,  
 International Tissue Elasticity Conference, Lingfield (UK), October 2013

*Imaging of Shear Waves Induced by Lorentz Force*  
**P Grasland-Mongrain**, S Catheline, S Montalescot, C Lafon  
*Lorentz Force Hydrophone Prototype Characterization*  
**P Grasland-Mongrain**, JM Mari, B Gilles, B Roussel, A Poizat, JY Chapelon, C Lafon  
 IEEE Ultrasonics, Ferroelectrics and Frequency Control Symposium, Prague, July 2013  
 (with proceeding)

*Electromagnetic Hydrophone for High Intensity Focused Ultrasound Measurement*  
**P Grasland-Mongrain**, JM Mari, B Gilles, JY Chapelon, C Lafon  
 Acoustical Society of America Symposium, Montréal, June 2013 (with proceeding)

*Electromagnetic Hydrophone for High Intensity Focused Ultrasound Measurement (poster)*  
 P Grasland-Mongrain, JM Mari, B Gilles, JY Chapelon, **C Lafon**  
 International Symposium on Therapeutic Ultrasound, Shanghai, May 2013

*Electromagnetic Hydrophone Characterization*  
 P Grasland-Mongrain, JM Mari, B Gilles, JY Chapelon, **C Lafon**  
 International Congress on Ultrasonics, Singapour, May 2013

*Electromagnetic tomographic ultrasonic sensor*  
**P Grasland-Mongrain**, JM Mari, B Gilles, JY Chapelon, C Lafon  
 Acoustical Society of America Symposium, Hong-Kong, May 2012 (with proceeding)

*Detection of fat tissues with ultrasonically-induced Lorentz force*  
**P Grasland-Mongrain**, JM Mari, C Lafon  
 Acoustics, Nantes, May 2012

*Combination of shape-constrained and inflation deformable models with application to the segmentation of the left atrial appendage (poster)*  
**P Grasland-Mongrain**, J Peters, O Ecabert  
 IEEE International Symposium on Biomedical Imaging, Rotterdam, May 2010 (with proceeding)

#### RESEARCH GRANTS

*Post-doctoral grant from Natural Sciences and Engineering Research Council of Canada (1<sup>st</sup> April 2015 – 31. March 2017)*

*Post-doctoral grant from Fondation pour la Recherche Médicale (1<sup>st</sup> March 2014 – 28. February 2015)*

*PhD « normalien » contract (1<sup>st</sup> September 2010 - 31. August 2013)*

#### AWARDS AND PRIZES

*Young researcher award (Société Française de Physique, February 2016)*

*2<sup>nd</sup> prize of best student presentation (ASA Symposium, Montréal, 2.-7. June 2013)*

*Young researcher award* (Colloque RITS, Bordeaux, 8.-11. April 2013)

*Best poster presentation* (Journées Campus Santé, Lyon, 2012)

*Best poster presentation* (Journées Imag'in vivo, Lyon, 2012)

Seven Travel Awards

09/06/2016