Positions:

Current position:

– 01/10/2014: Professor, FNRS associate at the BEAMS department of the University of Brussels (ULB, Belgium).
– 13/09/2012: Principal Investigator for the LIGO Scientific Collaboration.

Previous positions :

– 01/01/2011-31/12/2015: Part time research associate at the European Organization for Nuclear Research (CERN, Switzerland). – 01/10/2013-30/09/2014: Lecturer (maitre d'enseignement) at the BEAMS department of the University of Brussels (ULB, Belgium). – 01/01/2011-30/09/2013: Post-doc researcher at the Active Structures Laboratory of the University of Brussels (ULB, Belgium).
– 01/01/2009-31/12/2010: Fellow at CERN (Active stabilization of the future linear collider CLIC).
– 01/08/2007-31/12/2008: Post-doc researcher (Walloon Region) at the University of Brussels, Department of mechanical engineering and robotics, Active Structures Laboratory.
– 01/02/2002-31/07/2007 : Research engineer (PhD student) at the University of Brussels, Department of mechanical engineering and robotics, Active Structures Laboratory.

Education:

– Ph.D.: Doctor in Applied Sciences (University of Brussels, 2007).
– M.A.S.: (Master of Advanced Studies) Mechanical engineering (University of Brussels, 2003).
– M.Sc.: Engineering physics (University of Liege, 2001).

International mobility:

– 19/06/2013-22/07/2013 (1 month): Visitor at the Massachusetts Institute of Technology, USA.
– 30/06/2012-30/07/2012 (1 month): Visitor at the California Institute of Technology, USA.
– 30/05/2012-30/06/2012 (1 month): Visitor at the Massachusetts Institute of Technology, USA.
– 01/01/2004-31/01/2004 (1 month): Visitor at the Institut National des Sciences

Appliquees, Laboratoire de Mecanique des Contacts et des Structures (INSA Lyon – LAMCOS), France.

Teaching activities:

Since 2016 :

MECA-H-303: Cinématique et dynamique des machines (professor, 24 hr/year)
MECA-H-411: Vibration and acoustics (professor, 30 hr/year)
MECA-H-524: Mechatronics (professor, 36 hr/year)

2013-2016 :

MECA-H-200 : Mecanique rationnelle II (Maitre d'enseignement, 60 hours/year).

2011-2013 :

MECA-H-406 : Composite structures (assistant, 36 hours/year).
MECA 324 : Mechanical design projects (assistant, 48 hours/year).

2002 to 2008 :

MECA 323: Mechanical design (assistant, 36 hours/year).
MECA 324 : Mechanical design projects (assistant, 48 hours/year).
MECA 322: Selected topics in applied mechanics (assistant, 24 hours/year).
PROJ011 : Electromechanics projects (assistant, 48 hours/year).

Seminars and Lectures :

07/09/2009: CLIC Stabilization activities at CERN, European Synchrotron Radiation Facility (ESRF), Grenoble, France.
07/11/2009: Active stabilization of CLIC main beam quadrupoles, Brookhaven National Laboratory (BNL), New York, USA.
10/07/2012: Active vibration isolation of future particle collider, California Institute of Technology (Caltech), Pasadena, USA.
21/02/2013: Precision control of large instruments dedicated to experimental physics, Institut National des Sciences Appliquees (INSA), Lyon, France.
10-20/12/2016: Linear accelerator School, Teijin Academy, Susono, Japan.

Supervisions :

[1] M.Sc. : Modélisation d'une suspension semi-active de vélo, J.Vandenbussche, Université Libre de Bruxelles (2003).
[2] M.Sc. : Amortissement passif des vibrations de torsion d'un essieu de métro, P. Loutte, Université Libre de Bruxelles (2005).
[3] M.Sc. : Etude par modélisation de l'influence du profil des roues de métro sur l'usure ondulatoire, R. Bastaits, Université Libre de Bruxelles (2005).
[4] M.Sc. : Amortissement des vibrations de torsion d'un essieu de métro : conception et réalisation d'un absorbeur dynamique, F. Samyn, Université Libre de Bruxelles (2006).
[5] M.Sc. : Etude comparative des différents systèmes d'amortissement pour les vibrations de torsion d'un essieu de véhicule ferroviaire, J. Kupchik, Université Libre de Bruxelles (2006).
[6] D.E.A : Etude paramétrique par modélisation multi-corps de la production d'usure ondulatoire sur la ligne B du R.E.R. Parisien, R. Bastaits, Université Libre de Bruxelles (2006).
[7] M.Sc. : Etude de stabilité d'un bogie de tram, D.Ducik, Université Libre de Bruxelles (2007).
[8] M.Sc. : Amortissement et isolation des structures aérospatiales embarquées, T.Ouabi, Université Libre de Bruxelles (2008).
[9] M.Sc. : Prédictions du bruit de crissement ferroviaire : mécanimes et réduction, M. Lousberg, ULB (2008).
[10] M.Sc. : Etude et conception d'un robot mouche, A. Vanholsbeek, Université Libre de Bruxelles (2008).
[11] M.Sc. : Isolation des structures aérospatiales embarquées, G. Kroll, école supérieure des techniques aéronautiques et de construction (Paris, 2008).
[12] M.Sc. : Amortissement et réduction des contraintes dans les structures aérospatiales embarquées, E. Libaudière, école supérieure des techniques aéronautiques et de construction (Paris, 2008).
[13] M.Sc : Etude numérique et expérimentale du bruit de crissement ferroviaire, E. Iparraguirre, école supérieure des techniques aéronautiques et de construction (2007).
[14] MSc : Surveillance de l'état des voies de tram de Bruxelles par un dispositif embarqué sur le véhicule, M. Lousberg, ULB, 2007.
[15] M.Sc. : Modèles empiriques d'isolateurs non-linéaires, M. Khiari, ULB (2009).
[16] Ph.D. : CLIC quadrupoles active nano-stabilisation, S. Janssens CERN/ULB/Nikhef (2009-2012).
[17] M.Sc. : Stabilisation active de la focalisation finale des futures collisionneurs de particules, D. Tshilumba, ULB (2012).
[18] M.Sc. : Développement d'un capteur inertiel de vibrations, L. Fueyo Roza, ULB (2012).
[19] M.Sc. : Métrologie d'une lentille intra-occulaire, L. Amenchar, ULB (2012).
[20] MSc : Conception of an inertial sensor, J. Amar, Université de technologie Belfort-Montbéliard (2012). [20] M.Sc. : Stabilisation active de la focalisation finale des futures collisionneurs de particules, D. Tshilumba, ULB (2012).
[21] M.Sc. : Développement d'un capteur inertiel de vibrations, L. Fueyo Roza, ULB (2012).
[22] M.Sc. : Métrologie d'une lentille intra-occulaire, L. Amenchar, ULB (2012).
[23] Internship : Conception of an inertial sensor, J. Amar, UTBM, 2012-2013 (6 mois).

[24] Ph.D.: Isoaltion active des interféromètres gravitationnels, D. Tshilumba (2012-2016).
[25] Internship: Vibration isolation for car suspension, A. Khemakhem (INSAT, Tunisie, 2014)
[26] Ir: Optical fibre geophone, L. Fueyo-Roza (ULB,2014-2016)
[27] Internship: Magnetorheological fluid damper, Q. Lemontagner (ISAT, 2015)
[28] M.Sc: Semi-active car suspension using magneto-rheological fluid, T.C. Do (ULB, 2015)
[29] M.Sc.: Active isolation of a gravitational wave detector, A. Milhomem (ULB, 2015)
[30] Internship: Vibration control of the future TALC telescope, S. Hellegouarch (ESTACA, 2015)
[31] Internship: Vibration isolation of sensitive payloads, T. Lampert (ESATACA, 2015)
[32] Internship: Semi-active car suspension using hardware in the loop, J.-B. Laczinski (ISAT, 2015)
[33] Internship: Hyperstable active mass damper, R. Bernard (ISAT, 2015)
[34] Internship: Micro-flapping wing mechanism, E. Mechin (ISAT, 2015)
[35] Internship: Optical geophone, A. Da Silva (ISAT, 2015)
[36] M.Sc.: High Resolution Optical Inertial Sensor, Binlei Ding (ULB, 2016)
[37] M.Sc: Flapping wing mechanism S. De Koninck (VUB, 2016)
[38] M.Sc.: Active vibration isolation, A. Souleille (ISAT, 2016)
[39] PhD: Optomechatronic active isolation system, Jennifer Watchi (ULB, 2015-)
[40] PhD: Development of an Extreme Low Frequency High Performance inertial sensor, Binlei Ding (ULB, 2016 –)
[41] Internship: Active and passive vibration isolation from launcher disturbances, F. Bernier (ESTACA, 2016)
[42] Internship: Vibration control a a future deployable space telescope, D. Augarde (ISAT, 2016)
[43] Internship: Isolation from launcher disturbances, A. Rondineau (ISAT, 2016)
[44] Internship: Development of an optical inertial sensor, T. Raguenes (ISAT, 2016)
[45] Internship: Development of a low frequency active isolation system, A. Boubert (ISAT, 2016)
[46] Internship: Active and passive vibration isolation from launcher disturbances, D. Augarde (ESTACA, 2016)
[47] M.Sc. : Active and passive vibration isolation from launcher disturbances (ULB, 2016)

Prize/awards

2015 : UAE-USA Alumni ULB
2016 : Special Breakthrough Prize in Fundamental Physics for the LIGO Scientific Collaboration
2016 : Gruber Cosmology Prize

Funding ID

2016: Mandat d’impulsion scientifique (MIS-FNRS). Isolation of gravitational wave detectors
2016: Wallinnov: Vers la maitrise des vibrations des structures aéronautiques au moyen d’absorbeurs non-linéaires intelligents.
2016: ESA: NetworkingPartnering Initiative: Active vibration isolation from environmental disturbances.
2016: CSC grant (B. Ding)
2015: Fond d’encouragement à la recherche (FER)
2014: GeoFO: Spin-off in Brussels (SOIB, 2 years)
2014: FNRS research associate.
2013: Visitor program for the LIGO project (1 month).
2013: Brain back to Brussels pgm (2 years).
2012: Visitor program for the LIGO project (2 months).
2011: Brain back to Brussels pgm (3 years).
2009: Fellow at CERN (2 years). Active isolation of CLIC quadrupoles.
2008: Fonds Alfred Renard: Micro air vehicle with flapping wings.
2008: AISE (Walloon Region, FIRST) : Damping and isolation of space structures.
2007: Consulting for the Belgian Subway Nework (STIB): Stability of a tram bogie.
2007: URBAN TRACK (European project FP6), subcontractor.
2006: Consulting for French Subway Network (RATP): Multi-body modeling of vehicles and tracks from the RER Network (Paris-France).

Collaborations:

European Organization for Nuclear Research (CERN, Switzerland), Nano-stabilization team.
Stanford Linear Accelerator (SLAC, US).
Massachusetts Institute of Technology (MIT, US), LIGO team.
Stanford University (US), LIGO team.
European Space Agency (ESA)
European Synchrotron Radiation Facility (ESRF)
Institut National des Sciences Appliquées (INSA-Lyon)
Commissariat a l’Energie Atomique et aux energies alternatives (CEA)
Observatoire Royal de Belgique (ROB)