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Royal Society – Wolfson Research Merit Award holder (2012-2017)

EPSRC Established Career Fellow (2014-2019)

Fellow of the Society for Experimental Mechanics, 2013

Editor-in-Chief, *Strain* (Wiley), 2010-

## University degrees

- 1989** Engineering Degree from École Nationale Supérieure d'Électricité et de Mécanique in Nancy (France), major in Mechanical Engineering.
- 1990** Master of Science (DEA) in Mechanics and Thermodynamics from Institut National Polytechnique de Lorraine (with honors).
- 1994** PhD (Doctorat) in Macromolecular Materials and Composites from Lyon I University, France, obtained with the highest grade.
- 1998** 'Habilitation à Diriger les Recherches' (HDR) from Clermont-Ferrand University, France (French degree necessary to supervise PhD students and apply for professorships).

## Professional positions

- 2012-** Professor at the University of Southampton (Chair of Solid Mechanics).
- 1999-2012** Professor at École Nationale Supérieure d'Arts et Métiers (ENSAM) in Châlons en Champagne (France).
- 1994-1999** Assistant-professor at École Nationale Supérieure des Mines de Saint-Étienne (France), in the Mechanical and Materials Engineering Department.

## Main administrative duties

- Head of Engineering Materials Research Group (2015-2018)
- Head (1999-2008) of the Mechanical Engineering and Manufacturing Research Group (LMPF, certified by the French Ministry for Research, [www.lmpf.net](http://www.lmpf.net)). I created this research group from scratch at ENSAM Châlons when I arrived in 1999 (there was no research there at that time).

## Teaching

### University of Southampton

- 2012-: Year 1 solid mechanics (FEEG1002). Basics of solid mechanics, stress, strain, elasticity. Class of 450+ students.
- 2009-: MSc (SESG6031, then SESG6045) Experimental Mechanics course.
- 2012-: Year 4 Group Design Project, Year 3 individual project and MSc project supervision.

## Main research expertise

- Mechanical testing of materials.
- Composite materials and structures.
- Full-field deformation measurements: the grid method (including deflectometry), speckle interferometry, digital image correlation, digital volume correlation, magnetic resonance elastography, noise smoothing for strain derivation, metrology (resolution, spatial resolution), including measurements at the microscopic scale.
- Inverse problems concerning the identification of mechanical parameters from mechanical tests. Includes specific approach for full-field measurements (Virtual Fields Method).
- High strain rate testing of materials, including high-speed deformation imaging.
- Infrared thermography and thermomechanical couplings.

## Enterprise

- Co-founder of the MatchID company, commercial DIC/VFM software platform, [www.matchid.eu](http://www.matchid.eu).

## Prizes and awards

- 2010 SAGE Best Paper Award for the paper:  
Pierron F., Identification of Poisson's ratios of standard and auxetic low density polymeric foams from full-field measurements, *Journal of Strain Analysis for Engineering Design*, vol. 45, n° 4, pp. 233-253, 2010.  
<http://dx.doi.org/10.1243/03093247JSA613>
- Royal Society Wolfson Research Merit Award, 2012.
- Appointed SEM Fellow (Society for Experimental Mechanics), 2013.
- B.J. Lazan Award (Society for Experimental Mechanics), 2017.
- BSSM Measurement lecture (2015).

## PhD supervision

### Current PhD supervision

- Principal supervisor for: Mr Jared Van Blitterswyk, Mr Sam Parry.
- Co-supervisor for: Mr René Kaufmann, Ms Panagiota Tavianatou.

### Past PhD supervision

- Principal supervisor of 15 and Co-supervisor of 12 graduated PhD students.

## Main research contracts

- European grant holder, sectorial grant of the BRITE/EURAM programme (18 months). 1990 – 1992 (PhD thesis).
- Optimisation of the coating and machining procedures of refractory alloys for forging matrices (OPTIMAT), 428 k€(2002-2004) – PI. Champagne-Ardennes Regional Council.
- Development of a methodology of full-field kinematic data processing by inverse analysis in order to identify the mechanical properties of interfaces and surface coatings, 75 k€(2002-2003), Co-I. French Ministry for Research (ACI project).
- Novel methodologies for the identification of composite material mechanical properties from full-field optical measurements, £45k (2004-2005), Invited Researcher. EPSRC GR/T07213/01.
- Full-field measurement at the micro and nanoscales (NANODEF), 577 k€(2004-2006), Co-I. Champagne-Ardennes Regional Council.

- Development and optimisation of a new type of concrete (DONBAP), 237 k€(2006-2008), Co-I. Champagne-Ardennes Regional Council.
- Photomechanics: innovative strategies for the identification of the constitutive behaviour of materials (Photofit), 266 k€(2006-2008), PI. French Ministry for Research (ANR project).
- Identification of the mechanical behaviour of superconducting materials and structures, 134 k€(2009-2001), PI. CEA Saclay, France.
- Exploration of novel heterogeneous multi-axial high strain rate tests of materials, 204k USD (2014-2016), PI. US Air Force EOARD FA8655-13-1-3041.
- EPSRC Established Career Fellowship, Grant EP/L026910 [Innovative photomechanical approaches in identification of the dynamic mechanical behaviour of materials](#), £1.2M (2014-2019), PI.
- Rooting for sustainable performance, £615k (2015-2019), Co-I. EPSRC EP/M020177/1.
- Novel imaging procedures for the identification of the high strain rate behaviour of soft materials, 230k USD (2015-2016), PI. US Air Force EOARD FA9550-15-1-0293.
- EPSRC Programme Grant EP/R045291/1 [Surgery enabled by ultrasonics](#). £6.1M with ~£800k for Southampton (2018-2023). PI at Southampton.

## Scientific editing

- Editor-in-Chief, Strain (Wiley), July 2010 -
- Associate Technical Editor for Experimental Mechanics, Springer (2009-2011 )
- Associate Technical Editor for Mécanique & Industries, EDP Sciences (2009- 2010)
- Member of the Editorial Council of the international journal “Strain” (Blackwell Publishing). Composed of 5 academics, it helps the Editor-in-Chief with strategic issues. About two meetings per year (2007-2010)
- Member of the Editorial Board of the international journal “Strain” (Blackwell Publishing). About two meetings per year (2005-)
- Guest editor for the CompTest2003 (vol. 35, n° 7-8, 2004), CompTest2004 (vol. 37, n° 2, 2006), CompTest2008 (vol. 40, n° 12, 2009) and CompTest2015 (ongoing) special issues of the journal “Composites Part A” (Elsevier).
- Guest editor (with Y.-L. Lo, Taiïwan) for a special issue of Experimental Mechanics (Springer) on Inverse problems in experimental mechanics (vol. 48, n° 4, 2008).
- Guest editor for a special issue of Composites Part A (Elsevier) on full-field measurements applied to composites (vol. 39, n° 8, 2008).
- Guest editor for a special issue of Royal Society Phil. Trans. A dedicated to 100<sup>th</sup> anniversary of the Hopkinson bar.

## International experience

### Studies and sabbaticals abroad

- 1988-1989: final year student at the University of Bath (Mechanical Engineering) as part of my engineering curriculum in France (exchange student).
- 1990: 6 months stay at the Department of Materials Science of the University of Bath for my DEA (MSc) research project. Supervisors: Prof. Bryan Harris and Prof. Alain Vautrin.
- 1990-1992: 18 months (12 + 6) at the Department of Materials Science of the University of Bath for my PhD through a European BRITE/EURAM grant. Supervisors: Prof. Bryan Harris and Prof. Alain Vautrin.
- 1 year sabbatical at the University of Bristol (UK), 2004-05. Department of Aerospace Engineering (Prof. M.R. Wisnom).

### **Student exchange management**

- Director of ENSAM double degree programme with the UK (MSc level) at the national level. 35 final year students sent each year to MSc courses in the UK (Imperial College, Bristol, Cranfield etc.)
- Broad experience of undergraduate student exchanges (ERASMUS/SOCRATES, UK, USA, Germany etc.), first at Ecole des Mines, then at ENSAM.
- From 2006 to 2012: management of the final year project abroad of 16 students per year at Arts et Métiers ParisTech. All students placed worldwide using my own research contacts.

### **Teaching**

- Participation as lecturer to the ERASMUS ICP-93-B1040/06 intensive course entitled “Analysis, Design, Manufacturing and Testing of a Composite Structural Component” (1 week). Course held at the University of Kaiserslautern in 1995 and 1996 and organized by me in 1997 in St-Etienne. Exercises on classical lamination theory and project on prediction of composite failure.
- Participation to a BSSM intensive course on experimental mechanics since 2010 at the University of Southampton, UK (also SESG6031 MSc course). Lectures on optics, grid method, interferometry, smoothing and strain calculations and data processing with the virtual fields method. Practical lab on the grid method and practical full-field data processing.
- Co-organizer with Dr Pascal Lava (KU Leuven, Ghent campus, Belgium) and Dr Philip Reu (Sandia National Laboratory) of international training sessions on Digital Image Correlation [diccourse.matchid.org](http://diccourse.matchid.org). 20 students, January 13-16 2014, January 12-16 2015 and January 11-15 2016 in Ghent, Belgium and 13-17 June 2016 in Philadelphia, USA.
- Lecturer in the 2015 CISM course entitled ‘Modelling, simulation and characterization of multi-scale heterogeneous materials’, Sept. 28 – Oct. 2 2015 in Udine, Italy.

### **Research**

- Wide range of international research collaborations (Bristol, Loughborough and Southampton Universities, UK, University of South Carolina, USA, Washington University in St Louis, USA, UTAD University in Vila Real, Portugal, Aalborg University, Denmark, PosTech, Korea, etc.), including formal collaborations through EPSRC funded contracts (UK) and joint publications.
- International training courses on the Virtual Fields Method
  - One day course at the annual SEM conference from 2005 to 2008, and in 2012 and 2015. About 15 participants each year.
  - Two-day course at Loughborough University, organized by BSSM (British Society for Strain Measurements), June 2006. 10 participants.
  - One day course at the next Photomechanics conference in Loughborough, July 2008, <http://www.lboro.ac.uk/departments/mm/conferences/photomechanics/>
  - One day course at the University of Ancona (Italy), 21<sup>st</sup> January 2009.
  - One day course at the UTAD University in Vila-Real, Portugal, 8<sup>th</sup> July 2013 (25 participants)
  - Two-day course at IIT Madras, India, February 2015. 30 participants.

## **Conferences, networking etc.**

### **Conference organization**

- Chairman and organizer of the first “Composites Testing and Model Identification” (CompTest2003) conference held in January 2003 in Châlons en Champagne (France) <http://www.camfit.fr/comptest2003/>

- Co-Chairman of the “Composites Testing and Model Identification” series of conferences, CompTest 2004 (Bristol), 2006 (Porto), 2008 (Dayton), 2011 (Lausanne), 2013 (Aalborg), 2015 (Madrid), 2017 (Leuven) and 2019 (Lulea). [More information here.](#)
- Co-chair of the organizing committee of the French Conference on Mechanics (1200 participants) held in Troyes in September 2005.
- Chair of the joint Dymat/IOP conference on high-speed imaging for materials and structures, to be held at the IOP in London, 22-24 November 2013. 73 participants from 13 countries.
- Co-chair of the 16<sup>th</sup> International Conference in Experimental Mechanics (ICEM16, conference of the EURASEM, [www.icem16.org](http://www.icem16.org)) held 7-11 July 2014 in Cambridge, UK. 500 participants.
- Co-chair of the [2018 BSSM conference](#), 29-31 August 2018 in Southampton, UK. ~100 participants.

### Workshops

BSSM (British Society for Strain Measurements, [www.bssm.org](http://www.bssm.org))

- Chairman of the workshop on “Experimental mechanics in biological tissues”, 23<sup>rd</sup> June 2009 in Loughborough, UK.
- Co-chairman of the workshop on “New Approaches for Performance Definition of Composite Materials and Structures”, 11 March 2010 at NPL in Teddington, UK.
- Co-chairman of the showcase on “High speed imaging”, 23<sup>rd</sup> November 2010 at NPL in Teddington, UK.
- Co-chairman of the workshop on “State of the art and future challenges in X-ray computed tomography for material mechanical behaviour assessment”, 26<sup>th</sup> January 2012, University of Southampton, UK.
- Co-chairman of the showcase on “Leading edge experimental techniques”, 3<sup>rd</sup> and 4<sup>th</sup> November 2014, National Physical Laboratory, London. In celebration of the 50<sup>th</sup> anniversary of BSSM.

### Invited research seminars

- ENSAM Paris (France), 21<sup>st</sup> March 2001, (Prof. Jacques Verdu), INSA Rouen (France), 29<sup>th</sup> November 2001 (Prof. Edoardo Souza), The Open University (UK), 9<sup>th</sup> December 2004 (Dr Salih Güngör), Loughborough University (UK), 14<sup>th</sup> December 2004 (Prof. Jon Huntley), Southampton University (UK), 16<sup>th</sup> December 2004 (Prof. Janice Barton), Sheffield University (UK), 2<sup>nd</sup> March 2005 (Prof. Costas Soutis), Reading University (UK), 23<sup>rd</sup> June 2005 (Prof. George Jeronimidis), University of Technology of Compiègne (France), 10<sup>th</sup> November 2005 (Prof. Pierre Villon), ONERA Lille (France), 15<sup>th</sup> June 2006 (Dr Bertrand Langrand), EPFL (CH), 23<sup>rd</sup> June 2006 (Prof. John Botsis), ONERA Châtillon, 2<sup>nd</sup> April 2008 (1 day short course), University of Glasgow (UK), November 2008 (Prof. Margaret Lucas), University of Cardiff (UK), September 2009 (Prof. Karen Holford), University of South Carolina (USA), February 2010 (Prof. Mike Sutton), University of Texas at Arlington (USA), February 2010 (Prof. Erian Armanios), University of Exeter (UK), March 2010 (Dr Chris Smith), Oxford University (UK), May 2010 (Dr Clive Siviour), Aalborg University (DE), 19<sup>th</sup> January 2011 (Prof. Ole Thybo Thomsen), Ecole Centrale de Nantes (France), 24<sup>th</sup> February 2011 (Prof. Arnaud Poitou), Bath University (UK), 7<sup>th</sup> April 2011 (Dr Richard Butler), Southampton University, 1<sup>st</sup> April 2011 (Prof. Janice Barton), Beijing University of Technology (China), 21 October 2011 (Prof. Pengwan Chen, Shock Physics/Chemistry group), Tsinghua University (China), 21 October 2011 (Prof. Huimin Xie), Cavendish Laboratory, University of Cambridge (UK), 24 May 2012 (Dr Stephen Walley), CalTech (USA), 8 June 2012 (Prof. G. Ravichandran), Sandia National Laboratories (USA), 6 June 2012 (Dr Phillip Reu / Dr Charlotte Kramer), University of Technology of Troyes, 20 December 2012 (Prof. Khemais Saanouni), Cardiff University (UK), 30<sup>th</sup> January 2013 (Prof. Stéphane Bordas), TWI (Cambridge, UK), 12 February 2013 (Dr Marcus Warwick), University of

Bristol (UK), 12<sup>th</sup> March 2013 (Prof. Michael Wisnom), Sherbrooke University (Canada), 26<sup>th</sup> March 2013 (Prof. Alain Berry), Polytechnique Montréal (Canada), 27<sup>th</sup> March 2013 (Prof. Martin Lévesque), University of Wisconsin Madison (USA), 20<sup>th</sup> August 2013 (Prof. Wendy Crone), Forest Product Laboratory (Madison, USA), 20<sup>th</sup> August 2013 (Dr John Considine), Cardiff University (UK), 14th September 2014, Newport and District Material Society presentation (Prof. Sam Evans), Rennes University (France), 6<sup>th</sup> May 2015 (Prof. J.-B. Le Cam), Johns Hopkins University (USA), 2<sup>nd</sup> June 2015 (Prof. KT Ramesh), Drexel University (USA), 3<sup>rd</sup> June 2015 (Dr Leslie Lamberson)

#### **Affiliation to Societies**

- British Society for Strain Measurement (BSSM)
  - Co-opted as member of the National Technical Committee (NATCO), 2006-2014.
  - Member of the SATCO committee (workshop and seminars), 2009-2014.
- Society for Experimental Mechanics (SEM)
  - President of the Technical Division entitled “Inverse Problem Approaches” (2007-2009).
  - Member of the Executive Board (2009-2011).
- Institute of Physics (IOP, UK).
- DYMAT

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#### **Publications**

##### **Book on the Virtual Fields Method (2012)**

<http://www.springer.com/materials/mechanics/book/978-1-4614-1823-8>

**International refereed journal articles:** 125

h-index: 41 (Scopus, February 2019)

**List of publications on** <http://www.researcherid.com/rid/D-2332-2011>