

H Alicia Kim

Associate Professor

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Senior Research Fellow

School of Engineering, Cardiff University

Queen's Buildings, The Parade

Cardiff CF24 3AA UK

EDUCATION

PhD Aeronautical Engineering, University of Sydney, Australia, 1997-2000

Dissertation: *Development of Evolutionary Structural Optimization: Improving Practicality and Applicability as a Design Tool* (Adviser: Grant Steven)

BE (Honors I) Aeronautical Engineering, University of Sydney, Australia, 1993-1996

Dissertation: *Vector Formulation of an Optimized Topology Structure for Manufacturing*

EMPLOYMENT

University of California, San Diego

Associate Professor, Structural Engineering Department

2015-current

Cardiff University, Cardiff UK

Senior Research Fellow, School of Engineering

2015-current

University of Bath, Bath UK

Reader/Senior Lecturer/Lecturer, Mechanical Engineering

2001-2015

Virginia Tech, VA USA

Visiting Scholar, Aerospace and Ocean Engineering

2001

Multidisciplinary feasibility study of novel flight configuration with Lockheed Martin

University of Warwick, Coventry UK

Royal Academy of Engineering Post-Doctoral Research Fellow, Engineering

2000-2001

Research in developing topology optimization for strut-and-tie type structures

OTHER APPOINTMENTS

Visiting Researcher, Los Alamos National Laboratory, NM USA

8/2012 – 1/2013

Visiting Researcher, NASA Langley, VA USA

2/2012 – 7/2012

Affiliate, Los Alamos National Laboratory, NM USA

2007-current

Visiting Professor, Génie Mécanique, ICAM, Lille France

2004-2009

HONORS AND AWARDS

- ISSMO/Springer Prize for Best Paper in World Congress in Structural and Multidisciplinary Optimization 2013
- Collier Research HyperSizer/AIAA Structures Best Paper Award, AIAA Structures, Structural Dynamics and Materials Conference, 2013
- Received the American Society for Composites, Best Student Paper in Composites Award, *Optimization of Bistable Composite Laminates with Actuated State-Change*, the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference in Denver, CO 2011
- Royal Academy of Engineering Postdoctoral Research Fellowship 2000-2001
- Zonta International Amelia Earhart Fellowship Award 2000
(for significant contribution to aerospace engineering through technological advances)
- Overseas Postgraduate Research Scholarship 1997-2000
- International Postgraduate Award 1997-2000
- Department Scholarship 1998

RESEARCH INTERESTS

topology optimization, multidisciplinary design optimization, multiscale modelling of materials and multifunctional structures, fibre composites.

INVITED PRESENTATIONS & PAPERS

Plenary/Keynotes

- [I1] Plenary lecture, Rolls-Royce Automatic Design Optimization Seminars, Derby, UK, 2015
- [I2] Plenary lecture, SIAM Conference on Geometric & Physical Modeling, Salt Lake City, Utah, 2015.
- [I3] Plenary talk, Workshop on Materials for Efficient Energy and Transport, Paris, France 2014.
- [I4] General Electrics Topology Optimisation Summit, General Electrics Global Research, Schenectady NY, USA 2013
- [I5] Workshop on Topology Optimization under the framework of Project ARCN TOP OPT (FCT), Lisbon, Portugal, Dec 2012
- [I6] The 2nd conference in simulation and multidisciplinary design optimization, Belfort, France, 2006

Invited Papers/Presentation

- [I7] Future Transport Challenges Workshop: Energy Efficiency and the Environment, Capua, Italy, April 2015.
- [I8] Track on Structural Analysis and Optimization, the 20th International Conference on Composite Materials, Copenhagen, July, 2015.

- [I9] Special issue in 3D printing, *Materials Science and Technology*, 2015
- [I10] Mini-Symposium on Multidisciplinary Design Optimization, Conference on Engineering and Applied Sciences Optimization (OPT-i 2014), Kos Greece, June 2014
- [I11] Embraer Workshop on Energy Efficient Aircraft Configurations, Technologies and Concepts of Operation, Brazil, 2013
- [I12] MDO Research Consortium Workshop, Stanford University, Palo Alto CA, USA, Jul, 2013.
- [I13] The 6th International Conference on Adaptive Modelling and Simulation (ADMOS2013), Thematic Conference of ECCOMAS, Lisbon, Portugal, 2013
- [I14] Special issue on Dynamics of Composite Nonlinear Systems and Materials for Engineering Applications and Energy Harvesting, *European Physical Journal*, 2012
- [I15] Working Groups for Multi-Sampler Optimization, Santa Fe Institute, 2012
- [I16] Special Section on Past, Present and Future of Multidisciplinary Design Optimisation *AIAA Journal*, 2012.
- [I17] Novel Applications in Structural Optimization, ASME Design Automation Conference, 2012
- [I18] IEEE Transactions on Ultrasonic, Ferroelectric and Frequency Control Society, 2012.
- [I19] ICPRAM Special session, Shape Analysis and Deformable Modeling, 2012.
- [I20] Special issue on Computational Mechanics and Design, *Finite Elements in Analysis and Design*, 2011
- [I21] The 9th World Congress on Computational Mechanics, Sydney Australia, July 2010
- [I22] The 4th European Conference on Computational Mechanics, Paris France, May 2010
- [I23] The 10th US National Congress on Computational Mechanics, Columbus, OH USA, July 2009
- [I24] The 3rd European Congress on Computational Mechanics, Lisbon, Portugal, 2006
- [I25] The 5th World Congress on Computational Mechanics, Vienna, Austria, 2002.

Seminars

- [I26] Lockheed Martin, 2016
- [I27] Boeing, Seattle, 2016
- [I28] Sandia National Laboratory NM, 2015
- [I29] Hanyang University, Korea, 2015
- [I30] Brigham Young University, UT, 2015
- [I31] University of Colorado, Boulder, CO, 2015
- [I32] Wright-Patterson Air Force Research Laboratory, Dayton OH, USA 2015
- [I33] Politecnico di Torino, Turin, Italy, 2015
- [I34] University of West England, Bristol, UK, 2015
- [I35] Seoul National University, Mechanical Engineering, Seoul, Korea, 2014
- [I36] Hanyang University, Mechanical Engineering, Seoul, Korea, 2014
- [I37] Ansys, 2014
- [I38] University of Southampton, UK, 2014
- [I39] Cardiff University, UK, 2014

- [I40] Hanyang University, Seoul, Korea, 2013
- [I41] ETH Zurich, Switzerland, 2013
- [I42] Lawrence Livermore National Laboratory, Livermore CA, USA, 2013
- [I43] Rensselaer Polytechnic Institute, Troy NY, USA, 2013
- [I44] Wright Patterson Air Force Laboratory, Dayton OH, USA, 2012
- [I45] GE Global Research, Niskayuna NY, USA, 2012
- [I46] Massachusetts Institute of Technology, Cambridge MA, USA, 2012
- [I47] University of Michigan, Ann Arbor MI, USA, 2012
- [I48] University of Florida, Gainesville FL, USA, 2012
- [I49] Wright State University, Dayton OH, USA, 2012
- [I50] Los Alamos National Laboratory, Los Alamos NM, USA, 2012
- [I51] NASA Glenn, Cleveland OH, USA, 2012
- [I52] NASA Langley, Hampton VA, USA, 2012
- [I53] Johns Hopkins University, Baltimore MD, USA, 2012
- [I54] Korea Advanced Institute of Science and Technology, Daejeon, Korea, 2011
- [I55] Hanyang University, Seoul, Korea, 2011
- [I56] The Boeing company, Seattle WA, USA, 2011
- [I57] University of Durham, School of Engineering and Computing Sciences, UK 2011
- [I58] NASA Langley, Hampton VA, USA, 2010
- [I59] BAE Systems, Advance Technology Centre, Filton, UK, 2010
- [I60] Seoul National University, Mechanical Engineering, Seoul, Korea, 2010
- [I61] Korea University, Mechanical Engineering, Seoul, Korea, 2010
- [I62] Hanyang University, Mechanical Engineering, Seoul, Korea, 2010
- [I63] Korea Aerospace University, Mechanical Engineering, Seoul, Korea, 2010
- [I64] Imperial College London, Aeronautics, London UK, 2010
- [I65] University of Reading, Mathematics, UK, 2010
- [I66] Los Alamos National Laboratory, USA, 2009
- [I67] University of Exeter, Engineering, UK, 2009
- [I68] University of Oxford Mathematical Institute, Computational Mathematics and Applications, Rutherford Appleton Laboratory, Numerical Analysis Group, UK, 2008
- [I69] London Mathematical Society, UK, 2007
- [I70] The Boeing company, Seattle WA, USA, 2006
- [I71] Wright State University, Dayton OH, USA, 2006
- [I72] San Diego State University, CA, USA, 2006
- [I73] University of Sydney, Australia, 2006
- [I74] WS Atkins, Filton, UK, 2005
- [I75] Korea Advanced Institute of Science and Technology, Korea, 2005
- [I76] University of Southern Queensland, Australia, 2001
- [I77] Virginia State Institute of Polytechnique, Blacksburg VA, USA, 2001
- [I78] Hanyang University, Mechanical Engineering, Seoul, Korea, 2000
- [I79] Seoul National University, Mechanical Engineering, Seoul, Korea, 2000

RESEARCH SUPERVISION

Post-Doctoral Researcher

- Scott Townsend 2016-current
- Renato Picelli 2016-current
- Timur Alexeev 2015-current
- Lester Hedges 2015-current
- Chris Brampton 2014-2015
- Sian Jenkins 2014-2015
- Mehdi Tavakkoli (Lecturer, Shahrood University of Technology, Iran) 2014-2015
- Peter Dunning (Lecturer, University of Aberdeen) 2013-2015
- Khalid Ismail (Assistant professor, Minufiya University, Egypt) 2014-2015
- Joao Duro (Software start-up) 2013-2015
- David Betts (Buro Happold) 2012-2014

PhD Completed

- Chris Brampton 2015
Applications of Level Set Structural Optimization
- Thomas Makin 2014
Metamodeling for Fast Structural Optimization of Aircraft Wing
- Philip Browne 2013
Topology Optimization of Linear Elastic Structures
- David Betts 2012
Optimization of Adaptive Smart Composite Structures
- Peter Dunning 2011
Introducing Loading Uncertainty in Level Set-Based Structural Topology Optimisation
- Peter Giddings 2010
Bistable Composite Laminates for Structural Morphing
- Philip Williams 2008
Post-Buckling of Truss-Lattice Shear Panels
- Caroline Edwards 2008
The Analysis and Development of Efficient and Reliable Topology Optimization Scheme

PhD, Current

- Carolina Jauregui Year 1
Optimisation of Metamaterials
- Raghavendra Sivapuram Year 1
Optimisation of Multiscale Structures for Additive Manufacturing

SERVICE TO PROFESSION

Journal Editorial

- Review editor, Structural and Multidisciplinary Optimization, Springer, 2013 - current
- Guest editor for special issue of Structural and Multidisciplinary Optimization

Contribution to Journal/Conference

- Lead organizer for Mini-Symposium on *Topology optimization for additive manufacturing*, 12th World Congress on Computational Mechanics (WCCM XII), Seoul Korea, 2016
- International Scientific Committee, 12th World Congress on Computational Mechanics (WCCM XII), Seoul Korea, 2016
- Scientific Committee, 11th World Congress on Structural and Multidisciplinary Optimization (WCSMO-11), Australia, 2015
- Programme Committee, International Conference on Computational Science (ICCS), New Zealand, 2015
- Programme Committee, International Conference on Computational Science (ICCS), Australia, 2014
- International Scientific Committee, 10th World Congress on Structural and Multidisciplinary Optimization (WCSMO-10), Orlando FL, 2013
- Chair of Student Paper Competition at AIAA Multidisciplinary Analysis and Optimization Conference, 2012.
- Judging panel for student paper competitions at AIAA Structures, Structural Dynamics and Materials conference and Multidisciplinary Analysis and Design Conference, 2010
- Organizer for Mini-Symposium on *Advances in Computational Design and Analysis of Structures and Materials in Honor of Prof Grant Steven's 65th Birthday*, 9th World Congress on Computational Mechanics, Sydney Australia, 2010
- Lead organizer for Mini-Symposium on Recent Developments in Computational Methods for Structural Optimization, 8th World Congress on Computational Mechanics, Venice, Italy, 2008
- Chair of the organizing committee for the 7th ASMO-UK/ISSMO International Conference on Engineering Design Optimization, Bath, July 2008
- Track Leader for shape and topology optimization, AIAA Multidisciplinary Analysis and Design Conference, 2008
- International advisory committee for the 3rd Asian-Pacific Congress on Computational Mechanics, Kyoto, Japan, 2007
- Lead organizer for Mini-Symposium on Optimization of Aerospace Structures, 7th World Congress on Computational Mechanics, LA, USA, 2006
- International advisory committee for the 7th World Congress on Computational Mechanics, LA, USA, 2006

- Lead organizer for Mini-Symposium on Optimization for Buckling, *6th World Congress on Computational Mechanics*, Beijing, China, 2004
- Regular session chair for: *AIAA conferences*, *World Congress on Structural and Multidisciplinary Optimization* and *World Congress on Computational Mechanics*. Also served as a session chair at *European Aeronautics Science Network's Workshop on Aerostructures* at EADS, Paris and *The PLATO-N International Workshop Advances in Topology and Material Optimization* at Denmark Technical University.
- Regular reviewer for: *AIAA Journal*, *Journal of Aircraft*, *Structural and Multidisciplinary Optimization*, *Computational Physics*, *Finite Element Analysis and Design*, *International Journal for Numerical Methods in Engineering*, *International Journal of Nonlinear Mechanics*, *Engineering Computations*, *Engineering Optimization*, *Biomechanics and Modeling in Mechanobiology* and *Medical Engineering and Physics*, *Journal of Composite Materials*, *ASME* and *AIAA conferences*

Committee

- EPSRC Strategic Advisory Team: providing advice to EPSRC for future research strategy and policy
- Royal Aeronautical Society Structures and Materials Special Committee, 14-current
- AIAA Integrated Computational Materials Engineering Special Committee. 14-current
- AIAA Multidisciplinary Design Optimization Technical Committee, 06-current
- Chair of Educations Sub-Committee, AIAA MDO TC, 10-current
- AIAA MDO award selection committee, 2016
- Korean Society of Mechanical Engineers CAE/Applied Mechanics Division Executive committee, 13-current
- Royal Aeronautical Society Bristol Branch Committee, 01-09
(Lecture secretary, 01-06, organizing monthly lectures for professionals)

Contribution to diversity

- Organizer for USNCCM 2015 Women Researchers' Forum
(<http://www.iacm.info/vpage/1/0/IACM-Expressions/38-Women-Researchers-Forum-At-USNCCM>)

Professional membership

- American Institute of Aeronautics and Astronautics (Senior Member)
- Royal Aeronautical society
- International Society of Structural and Multidisciplinary Optimization
- European Aeronautics Sciences Network

PUBLICATIONS

Book

Kim HA, Guyer RA (2014) *Nonlinear Elasticity of Porous Materials*, Wiley and Sons.

Refereed Book Chapter

- [BC1] Duan K, Padget JA, Kim HA (2014) "A light-weight framework for bridge-building from desktop to cloud," 2014 Service-Oriented Computing, CCSA, CSB, PASCEB, SWESE, WESOA, and PhD Symposium, Berlin, Germany, December 2-5, 2013, Revised Selected Papers, Lomuscio, A., Nepal, S., Patrizi, F., Benatallah, B. & Brandic, I. (eds.). Vol. 8377, pp. 308-323 16 p. (Lecture Notes in Computer Science; vol. 8377)
- [BC2] Kim HA, Bowen CR (2013) "Modeling and Characterisation of Piezoelectrically Actuated Bistable Composites," Chapter 5, El-Hajja R, La Saponara V, Muliana A, (eds) *Smart Composites: Mechanics and Design*, CRC Press, Boca Raton FL USA, 131-168.
- [BC3] Kim H, Querin OM, Steven GP (2000) "Post-processing of the two-dimensional evolutionary structural optimisation topologies," Parmee, I. (Ed.), *Evolutionary Design and Manufacture*, Springer-Verlag, London, pp 33-44

Conference Proceedings

Toropov VV, Querin OM, Kim HA, Butler R, Sienz J (2008) Engineering and Design Optimization: Product and Process Improvement, Proceedings of the 7th ASMO-UK/ISSMO Conference, ISBN 978-0-85316-272-8

Refereed Journals

- [J1] Dunning PD, Ovtchinnikov E, Scott J, Kim HA (2016) "Level-set topology optimization with many linear buckling constraints using an efficient and robust eigensolver," *International Journal for Numerical Methods and Engineering*, in press.
- [J2] Syta A, Bowen CR, Kim HA, Rysak A, Litak G (2016) "Responses of bistable piezoelectric-composite energy harvester by means of recurrences," *Mechanical Systems and Signal Processing* (letter to the editor), in press.
- [J3] Duro J, Padget JA, Bowen CR, Kim HA, Nassehi A (2016) "Multi-sensor data Fusion Framework for CNC Machining Monitoring", *Mechanical Systems and Signal Processing* **66**, 505-520.
- [J4] Brampton CJ, Wu KC, Kim HA (2015) "New optimization method for tow steered fiber composites using the level set method," *Structural and Multidisciplinary Optimization*, **52**(3), 493-505, DOI: 10.1007/s00158-015-1256-6.
- [J5] Guyer RA, Kim HA (2015) "Theoretical model for fluid-solid coupling in porous materials", *Physical Review: E*, **91**, 042406, DOI: 10.1103/PhysRevE.91.042406.
- [J6] Dunning PD, Kim HA (2015) "Simultaneous optimisation of structural topology and material grading using a level-set method," Special issue on 3D Printing (invited), *Materials Science and Technology*, **31**(8), 884-894.

- [J7] Syta A, Bowen CR, Kim HA, Rysak A, Litak G (2015) "Experimental analysis of the dynamical response of energy harvesting devices based on bistable laminated plates," *Meccanica*, DOI 10.1007/s11012-015-0140-1.
- [J8] Harris P, Skinner W, Bowen CR and Kim HA (2015) "Manufacture and characterisation of piezoelectric broadband energy harvesters based on asymmetric bistable laminates," *Ferroelectrics*, **480**, 1–10.
- [J9] Dunning PD, Stanford BK, Kim HA (2015) "Coupled aerostructural topology optimization using a level set method for 3D aircraft wings", *Structural and Multidisciplinary Optimization*, **51**(5), 1111-1132, DOI: 10.1007/s00158-014-1200-1.
- [J10] Dunning PD, Kim HA (2015) "Introducing the sequential linear programming level-set method for topology optimization," *Structural and Multidisciplinary Optimization*, **51**(3), 631-643, DOI: 10.1007/s00158-014-1174-z.
- [J11] Dunning PD, Stanford BK, Kim HA, Jutte CV (2014) "Aeroelastic tailoring of a plate wing with functionally graded materials," *Journal of Fluids and Structures*, **51**, 292-312, DOI: 10.1016/j.jfluidstructs.2014.09.008
- [J12] Harris P, Bowen CR, Kim HA (2014) "Manufacture and characterisation of piezoelectric broadband energy harvesters based on asymmetric bistable laminates," *Journal of Multifunctional Composites*, **2**(3), 113-123.
- [J13] Borowiec M, Rysak A, Betts DN, Bowen CR, Kim HA, Litak G (2014) "Complex response of a bistable laminated plate: Multiscale entropy analysis", *European Physical Journal - Plus*, in press.
- [J14] Song YZ, Bowen CR, Kim HA, Nassehi A, Padget, JA (2014) "Virtual visual sensors and their application in structural health monitoring," *Structural Health Monitoring*, **13**(3), 251-264, DOI: 10.1177/1475921714522841.
- [J15] Song YZ, Bowen CR, Kim HA, Nassehi A, Padget JA, Gathercole N, Dent A (2014) "Non-invasive damage detection in beams using novel marker extraction and wavelets," *Mechanical Systems and Signal Processing*, **49**(1-2), 13-23, DOI: 10.1016/j.ymsp.2013.12.011
- [J16] Bowen CR, Kim HA, Weaver PM, Dunn S (2014) "Piezoelectric and ferroelectric materials and structures for energy harvesting applications," *Energy & Environmental Science, Royal Society of Chemistry*, **7**, 25-44, DOI: 10.1039/C3EE42454E.
- [J17] Bowen CR, Kim HA, Salo AIT (2013) "Piezoelectric Composites Based on Bistable Composites," *Procedia Engineering*, 10.1007/s00542-013-2012-8.
- [J18] Bowen CR, Kim HA, Betts DN, Topolov VY (2013) "2–2 composites based on [011]-poled relaxor-ferroelectric single crystals: analysis of the piezoelectric anisotropy and squared figures of merit for energy harvesting applications", *Journal of Microsystems*, accepted.
- [J19] Bowen CR, Watson M, Betts DN, Harris P, Bertin M, Kim HA (2013) "Piezoelectric fibres integrated into structural composites," *Ferroelectrics*, **466**(1), 14-20.
- [J20] Dunning, PD, Kim HA (2013) "Robust topology optimization: Minimization of expected and variance of compliance," Special Section on Past, Present and Future of

- Multidisciplinary Design Optimisation (invited), *AIAA Journal*, **51**(11), 2656-2664. doi: 10.2514/1.J052183.
- [J21] Betts DN, Bowen CR, Kim HA, Gathercole N, Clarke CT, Inman DJ (2013) "Nonlinear dynamics of a bistable piezoelectric-composite energy harvester for broadband application," Special issue on Dynamics of Composite Nonlinear Systems and Materials for Engineering Applications and Energy Harvesting, *European Physical Journal*, **222** 1553-1562. DOI: 10.1140/epjst/e2013-01944-6
- [J22] Brampton CJ, Betts DN, Bowen CR, Kim HA, (2013) "Sensitivity of bistable laminates to uncertainties in material properties, geometry and environmental conditions," *Composite Structures*, **102**, 276-286.
- [J23] Dunning PD, Kim HA (2013) "A new method for creating holes in level-set function based topology optimisation", *International Journal for Numerical Methods in Engineering*, **93**, 118-134, DOI: 10.1002/nme.4384.
- [J24] Browne PA, Budd CJ, Gould NIM, Kim HA, Scott JA (2012) "A fast method for binary programming using first order derivatives, with application to topology optimization with buckling constraints" *International Journal for Numerical Methods in Engineering*, **92**, 1026-1043, DOI: 10.1002/nme.4367.
- [J25] Betts DN, Kim HA, Bowen CR, Inman DJ (2012) "Optimal Configurations of Bistable Piezo-Composites for Energy Harvesting", *Applied Physics Letters*, **100**, 114104, DOI: 10.1063/1.3693523.
- [J26] Betts DN, Kim HA, Bowen CR (2012) "Preliminary Study of Optimum Piezoelectric Cross-Ply Composites for Energy Harvesting", Special Issue on Smart Composite Materials (invited), *Smart Materials Research*, **2012**, 621364, doi:10.1155/2012/621364.
- [J27] Bowen CR, Betts DN, Giddings PF, Salo AIT, Kim HA (2011) "A study of bistable laminates of generic lay-up for adaptive structures", *Strain*, **48**, 235-240 DOI: 10.1111/j.1475-1305.2011.00817.x.
- [J28] Betts DN, Kim HA, Bowen CR (2011) "Optimization of Stiffness Characteristics for the Design of Bistable Composite Laminates", *AIAA Journal*, **50**(10), 2211-2218.
- [J29] Betts DN, Kim HA, Bowen CR (2011), "Modeling and Optimization of Bistable Composite Laminates for Piezoelectric Actuation", *Journal of Intelligent Material Systems and Structures*, **22** (18), 2186 - 2196.
- [J30] Guyer, R. A., Kim, H. A., Derome, D., Carmeliet, J. & TenCate, J. (2011) "Hysteresis in modeling of poroelastic systems: Quasistatic equilibrium", *Physical Review E*, **83**, 061408, LA-UR 10-7816.
- [J31] Giddings PF, Bowen CR, Kim HA, Salo AIT, Betts D (2011) "Modeling and characterization of piezoelectrically actuated bistable composites", (Invited), *IEEE Transactions on Ultrasonic, Ferroelectric and Frequency Control Society*, **58**(9), 1737-1750
- [J32] Dunning PD, Kim HA (2011) "Investigation and improvement of sensitivity computation using the area-fraction weighted fixed grid FEM and structural optimization", *Finite Elements in Analysis and Design* (invited), **47**, 933-941.

- [J33] Dunning PD, Kim HA, Mullineux G (2011) "Introducing Loading Uncertainty in Topology Optimization", *AIAA Journal*, **49**(4), 760-768.
- [J34] Giddings PF, Kim HA, Salo AIT, Bowen CR (2011) "Modelling of piezoelectrically actuated bistable composites", *Materials Letters*, **65**, 1261-1263.
- [J35] Kim HA, Betts DN, Salo AIT, Bowen CR (2010) "Shape Memory Alloy–Piezoelectric Active Structures for Reversible Actuation of Bistable Composites", *AIAA Journal*, **48**(6), 1265-1268.
- [J36] Betts DN, Salo AIT, Bowen CR, Kim HA (2010) "Characterisation and modelling of the cured shapes of arbitrary layup bistable composite laminates", *Composite Structures*, **92**(7), 1694-1700.
- [J37] Giddings PF, Bowen CR, Salo AIT, Kim HA, Ive A (2010) "Bistable composite laminates: effects of Laminate composition on cured-shape and response to thermal load", *Composite Structures*, **92**(9), 2220–2225.
- [J38] Crick T, Dunning P, Kim HA, Padget PA (2009) "Engineering design optimisation using services and workflows", *Royal Society Philosophical Transactions A*, **367**, 2741-2751
- [J39] Giddings PF, Bowen CR, Kim HA (2009) "Characterisation of force-deflection behaviour of piezoelectrically actuated bistable composite laminate under two-axis constraint", *Advances in Science and Technology*, **56**, 380-385
- [J40] Williams PA, Kim HA, Butler R (2008) "Bimodal buckling of optimised truss-lattice shear panels", *AIAA Journal*, **46**(8), 1937-1962
- [J41] Liu W, Butler R, Kim HA (2008) "Optimization of composite stiffened panels subject to compression and lateral pressure using a bi-level approach", *Structural and Multidisciplinary Optimization*, **36**(3), 235-245
- [J42] Williams PA, Butler R, Kim HA, Hunt GW (2008) "Complementary post-buckling analyses of truss-lattice shear panels", *Journal of Mechanics of Materials and Structures*, **3**(5), 995-1009
- [J43] Kim HA, Featherston CA, Ussel J, Williams PA (2008) "Introducing a discrete modelling technique for buckling of continuous panels under combined loading", *Structural and Multidisciplinary Optimization*, **36**(1), 3-13
- [J44] Kim HA, Clement PJ, Cunningham JL (2008) "Investigation of cancellous bone architecture using structural optimisation", *Journal of Biomechanics*, **41**(3), 629-635
- [J45] Giddings P, Bowen CR, Butler R, Kim HA (2008) "Characterisation of actuation properties of piezoelectric bi-stable carbon-fibre", *Composites: Part A*, **39**, 697-703
- [J46] Edwards CS, Kim HA, Budd CJ (2007) "An evaluative study of ESO and SIMP for optimising a cantilever tie-beam", *Structural and Multidisciplinary Optimization* (by invitation). **34**(5), 403-414
- [J47] Bowen CR, Salo AIT, Butler R, Chang E, Kim HA (2007) "Bi-stable composites with piezoelectric actuators for shape change", *Key Engineering Materials*. **334-335**, 1109-1112
- [J48] Bowen CR, Butler R, Jarvis R, Kim HA, Salo AIT (2007) "Morphing and shape control using unsymmetrical composites," *Journal of Intelligent Material Systems and Structures*, **18**, 89-98

- [J49] Kim H, Kirby BPD (2006) "Investigation of External Airbags for Rotorcraft Crashworthiness," *AIAA Journal of Aircraft*, **43**(3), 809-816
- [J50] Kim H, Querin OM, Steven G P, Xie YM (2002) "Improving efficiency of evolutionary structural optimisation by implementing fixed grid mesh," *Structural and Multidisciplinary Optimization*, **24**(6), 441-448
- [J51] Kim H, Querin OM, Steven GP, Xie YM (2002) "Determination of an Optimal Topology with a Predefined Number of Cavities," *AIAA Journal*, **40**(4), 739-744
- [J52] Kim H, Querin OM, Steven GP (2002) "On development of structural optimisation and its relevance in engineering design," *Design Studies*, **23**(1), 85-102
- [J53] Kim H, García MJ, Querin OM, Steven GP, Xie YM (2000) "Introducing fixed grid in evolutionary structural optimisation," *Engineering Computations*, **17**(4), 427-439.
- [J54] Kim H, Querin OM, Steven GP, Xie YM (2000) "A method for varying the number of cavities in an optimised topology using evolutionary structural optimisation," *Structural and Multidisciplinary Optimization*, **19**(2), 140-147

Refereed Conference Publications

- [C1] Sivapuram R, Kim HA (2016) "Level-set topology optimization for additive manufacturing," the 12th *World Congress on Computational Mechanics*, Seoul Korea, July.
- [C2] Sivapuram R, Dunning PD, Kim HA (2016) "Multiscale topology optimization for structures with tailored porous structured materials," *AIAA SciTech Conference*, San Diego, CA, USA, Jan.
- [C3] Yamakov V, Kang JH, Park C, Wise K, Fay C, Kim HA (2015) "Elastic and piezoelectric properties of boron nitride nanotube composites Part I: Molecular dynamics of a single wall BNNT," *International Symposium on Piezocomposite Applications*, Dresden, Germany, September.
- [C4] Kim HA, Hardie R, Yamakov V, Park C (2015) "Elastic and piezoelectric properties of boron nitride nanotube composites Part II: Finite Element Model," *International Symposium on Piezocomposite Applications*, Dresden, Germany, September.
- [C5] Dunning PD, Kim HA (2015) "Multi-scale Concurrent Material-Topology Optimization Using a Level-Set Method," *13th US National Congress on Computational Mechanics*, San Diego, CA, July.
- [C6] Brampton CJ, Kim HA (2015) "Level set optimisation for composite fibre paths," (invited), *20th International Conference on Composite Materials*, Copenhagen, July.
- [C7] Harris PJ, Kim HA, Bowen CR (2015) "Characterisation and modelling bistable laminate energy harvesters," *the 13th European Meeting on Ferroelectricity*, Porto, Portugal, June.
- [C8] Brampton CJ, Dunning PD, Kim HA (2015) "A hole insertion method for sequential linear programming level-set topology optimisation," *World Congress on Structural and Multidisciplinary Optimization*, Sydney, Australia, June

- [C9] Dunning PD, Kim HA (2015) "Multi-scale topology optimization using constraint coordination," World Congress on Structural and Multidisciplinary Optimization, Sydney, Australia, June
- [C10] Tavakkoli SM, Weaver PM, Bowen CB, Inman DJ, Kim HA (2015) "An analytical study on piezoelectric-bistable laminates with arbitrary shapes for energy harvesting," 7th ECCOMAS Thematic Conference on Smart Structures and Materials SMART2015, Azores, Portugal, June.
- [C11] Kim HA, Duro J, McShane GJ, Theobald PS (2015) "Topology optimisation of additively manufactured impact resistant structures," *Proceedings of the 23rd UK Conference of the Association for Computational Mechanics in Engineering*, Swansea University, Swansea, April
- [C12] Brampton CJ, Kim HA (2015) "Level set optimisation for steered fibre composites," *AIAA SciTech Conference*, Kissimmee, FL, USA, Jan.
- [C13] Brampton CJ, Dunning PD, Kim HA (2015) "Stress constrained optimisation using SLP level set topology optimisation method," *AIAA SciTech Conference*, Kissimmee, FL, USA, Jan.
- [C14] Dunning PD, Stanford BK, Kim HA (2015) "Level-set topology optimisation with aeroelastic constraints," *AIAA SciTech Conference*, Kissimmee, FL, USA, Jan.
- [C15] Lee J, Brampton CJ, Read J, Bowen CR, Wardle BL, Kim HA (2015) "Investigation of aligned conductive polymer nanocomposites for actuation of bistable laminates," *AIAA SciTech Conference*, Kissimmee, FL, USA, Jan.
- [C16] Brampton CJ, Bowen CR, Read J, Lee J, Wardle BL, Kim HA (2014) "Modelling and Characterisation of an Electro-Thermo-Mechanical De-icing and Actuation System," *the 4th Aircraft Structural Design Conference*, Belfast, UK, Oct.
- [C17] Bowen, CR, Harris P, Betts DN, Kim HA (2014) "Manufacture and characterisation of piezoelectric broadband energy harvesters based on asymmetric bistable laminates," *American Society of Composites Conference*, San Diego, CA USA, Sep.
- [C18] Dunning PD, Kim HA (2014) "Level set topology optimisation based on sequential linear programming," *11th World Congress on Computational Mechanics*, Barcelona, Spain, July.
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- [C20] Kipouros T, Brampton CJ, Kim HA (2014), "A coupling of multi-objective flow and topology optimisation," *OPT-i: International Conference on Engineering and Applied Sciences Optimization* (invited), ISSN: 2241-9098, ISBN: 978-960-99994-5-8, Kos Island, Greece, June.
- [C21] Riley MJW, Dunning PD, Brampton CJ, Kim HA (2014), "Multi-objective robust topology optimisation with dynamic weighting," *OPT-i: International Conference on Engineering and Applied Sciences Optimization* (invited), ISSN: 2241-9098, ISBN: 978-960-99994-5-8, Kos Island, Greece, June.

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- [C23] Betts DN, Bowen CR, Inman DJ, Kim HA (2014), "Novel model for arbitrary shape bistable piezoelectric-composite plates for vibration-based energy harvesting," *Active and Passive Smart Structures and Integrated Systems VIII, part of SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring*, San Diego, CA, USA, March.
- [C24] Brampton CJ, Bowen CR, Buschhorn ST, Lee J, Pickering SG, Wardle BL, Kim HA (2014) "Actuation of Bistable Laminates by Conductive Polymer Nanocomposites for use in Thermal-Mechanical Aerosurface De-icing Systems," *AIAA SciTech Conference*, Maryland, USA, Jan.
- [C25] Dunning PD, Stanford BK, Kim HA, Jutte CV (2014) "A Study on the Application of Functionally Graded Materials for Aeroelastic Tailoring of a Plate-like Wing," *AIAA SciTech Conference*, Maryland, USA, Jan.
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- [C27] Betts DN, Guyer RA, Le Bas P-Y, Bowen CR, Inman DJ, Kim HA (2014) "Modelling the Dynamic Response of Bistable Composite Plates for Piezoelectric Energy Harvesting," *AIAA SciTech Conference*, Maryland, USA, Jan.
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- [C30] Kim HA, Guyer RA (2013) "Porous Solids: Mechanical Response to Fluids," *18th International Conference on Nonlinear Elasticity in Materials*, Ticino, Switzerland, June.
- [C31] Kim HA, Brampton CJ (2013) "Structural Optimisation as a Moving Boundary Problem Using Level Set Functions," (invited) *ECCOMAS Thematic Conference: ADMOS 2013 International Conference on Adaptive Modeling and Simulation*, Lisbon, Portugal, June.
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- [C39] Brampton CJ, Kim HA, Cunningham JL (2012) "Applications of 3D level set topology optimization" (invited), *ASME Design Automation Conference*, Chicago IL, Aug.
- [C40] Makin T, Kim HA, Padget JA (2012) "Introduction of a RESTful webservice framework for complex engineering optimization", EngOpt2012 - International Conference on Engineering Optimization, Rio de Janeiro Brazil, Jul.
- [C41] Makin T, Kim HA (2012) "Adaptive multilevel radial basis function metamodel for engineering optimization" EngOpt2012 - International Conference on Engineering Optimization, Rio de Janeiro Brazil, Jul.
- [C42] Betts DN, Kim HA, Bowen CR, D Inman (2012) "Optimization of bistable composite laminates for piezoelectric energy harvesting," Special session on Integrated Computational Materials Engineering, *the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Waikiki HI USA, Apr.
- [C43] Dunning PD, Kim HA (2012) "Robust topology optimisation for expected compliance and variance using level-set method," Special session on MDO Past, Present and Future, *the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Waikiki HI USA, Apr.
- [C44] Duan K, Seow Y, Kim HA, Padget JA (2012) "A Resource-Oriented Architecture for MDO Frameworks", *the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Waikiki HI USA, Apr.
- [C45] Liu W, Kim HA, Butler R (2012) "Buckling optimization of variable angle tow panels using exact strip models", *the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Waikiki HI USA, Apr.
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- [C47] Betts DN, Kim HA, Bowen CR, Inman DJ (2012), "Optimization of piezoelectric bistable composite plates for broadband vibrational energy harvesting", *Proceedings of SPIE Smart Structures*, 8341, 83412Q, San Diego CA, <http://dx.doi.org/10.1117/12.930138>

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- [C49] Guyer GA, Kim HA, Derome D, Carmeliet J (2011) "Modelling Hysteretic Systems", *the 16th International Conference on Nonlinear Elasticity and Materials*, Prague Czech Republic, Jun.
- [C50] Carmeliet J, Derome D, Guyer RA, Kim HA (2011) "A new insight in porous materials by understanding hysteresis in mechanical, sorption and swelling processes", *3rd International Conference on Porous Media*, Bordeaux France, Mar.
- [C51] Betts DN, Kim HA, Bowen CR (2011), "Optimization of bistable composite laminates with actuated stated change", *52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Denver CO USA, Apr.
- [C52] Betts DN, Kim HA, Bowen CR (2011), "Design optimization of stiffness characteristics for bistable composite laminates", *52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Denver CO USA, Apr.
- [C53] Song YZ, Bowen CR, Kim HA, Nassehi A, Padgett JA, Gathercole N, Dent A (2011), "Non-invasive damage detection in composite beams using marker extraction and wavelets", *SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, San Diego CA USA, Mar.
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- [C57] Kim HA (2010) "Discretisation and topology optimisation methods" (invited), *the 9th World Congress on Computational Mechanics*, Sydney Australia, Jul.
- [C58] Betts D, Kim HA (2010) "Design studies of bistable composites", *the 9th World Congress on Computational Mechanics*, Sydney Australia, Jul.
- [C59] Kim HA, TenCate JA, Guyer RA (2010) "Hysteretic elastic systems", LA-UR 10-03599, *the 15th International Conference on Nonlinear Elasticity and Materials*, Otranto Italy, Jul, *Proceedings of Meetings on Acoustics*.
- [C60] Kim HA, Brampton CJ, Cunningham JL (2010) "Study of contact conditions in bone remodelling around hip prosthesis using structural optimisation", *the 17th Congress of the European Society of Biomechanics*, Edinburgh UK, Jul.
- [C61] Dunning PD, Kim HA, Mullineux G (2010) "Level-set structural optimisation with uncertainties" (invited), *the 4th European Conference on Computational Mechanics*, Paris France, May.

- [C62] Dunning PD, Kim HA, Mullineux, G (2010) "Introducing uncertainty in direction of loading for topology optimization", *51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Orlando FL USA, Apr.
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- [C64] Kim HA, Brampton C, Howard GJ, Cunningham JL (2010) "Bone remodelling response of hip prosthesis using structural optimization", *the 9th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*, Valencia Spain, Feb.
- [C65] Kim HA, Vistisen OS, TenCate JA (2009) "Can structural optimization explain slow dynamics of rocks?", LA-UR 09-05597 *the American Geophysical Union Fall Meeting*, San Francisco CA, USA, Dec.
- [C66] TenCate JA, Kim HA, Guyer R (2009) "Been living in the past?: Hysteresis in the equation of state of granular media!", LA-UR 09-05776, *the American Geophysical Union Fall Meeting*, San Francisco CA, USA, Dec.
- [C67] Giddings PF, Bowen CR, Kim HA (2009) "A coupled field finite element model to predict actuation properties of piezoelectrically actuated bistable composites", *the 17th International Conference on Composite Materials*, Edinburgh, UK, Jul.
- [C68] Kim HA, Betts DN, Salo AIT, Bowen CR (2009) "Shape memory alloy actuation for asymmetric bistable composites", *the 17th International Conference on Composites or Nano Engineering*, Honolulu, HI USA, Jul.
- [C69] Giddings PF, Bowen CR, Salo AIT, Kim HA, Ive A (2009) "Piezoelectrically actuated bistable composites: A finite element model to predict cured shape and actuation properties", *the 17th International Conference on Composites or Nano Engineering*, Honolulu, HI USA, Jul.
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- [C71] Betts DN, Fong YTT, Salo AIT, Bowen CR, Kim HA (2009) "Characterisation of the cured shapes of arbitrary layup composite laminates", *the 15th International Conference on Composite Structures*, Porto, Portugal, Jun.
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- [C74] Betts DN, Kim HA (2008), "Towards the optimisation of the design of bi-stable composites", *CD-ROM Proceedings of the 7th ASMO-UK/ISSMO International Conference on Engineering Design Optimization*, Bath, UK, Jul.

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- [C77] Dunning PD, Kim HA, Mullineux G (2008) "Two-dimensional fixed grid based finite element structural analysis", *CD-ROM Proceedings of the 12th AIAA/ISSMO Multidisciplinary Analysis and Optimisation Conference*, Victoria, BC, Canada, Sep.
- [C78] Crick T, Dunning PF, Kim HA, Padget JA, (2008), "Structural optimisation using services and workflows", *UK e-Science All Hands Meeting: Crossing Boundaries*, Edinburgh, UK, Sep.
- [C79] Williams PA, Kim HA, Butler R (2008), "Discrete modelling method for post-buckling of shear panels", *the 8th World Congress on Computational Mechanics*, Venice, Italy, Jul.
- [C80] Kim HA (2007) "Applications of topology optimisation", *the 12th International Conference on Nonlinear Elasticity in Materials*, Corsica, France, June.
- [C81] Edwards CS, Kim HA, Budd CJ (2007), "Smooth boundary based optimisation using fixed grid", *CD-ROM Proceedings of the 7th World Congress on Structural and Multidisciplinary Optimization*, Seoul, Korea, May.
- [C82] Williams PA, Butler R, Kim HA, Hunt GW (2007) "A comparison of analytical methods for post-buckling of truss-lattice shear panels," *CD-ROM Proceedings of the 48th AIAA SDM, ASC, NDA, GSF and MDO Conference*, Waikiki, Hawaii, USA, May.
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- [C86] Kim H, Fenton CT (2006) "Application of structural optimisation to turbine disc design," *CD-ROM Proceedings of the 13th International Heat Transfer Conference*, Sydney, Australia, Aug.
- [C87] Liu W, Butler R, Kim H (2006) "Optimum design and non-linear analysis of composite stiffened panels subject to compression and lateral pressure", *Proceedings of the 6th ASMO-UK/ISSMO International Conference on Engineering Design Optimization*, Oxford, UK, Jul.
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- [C90] Kim H (2006) "Topology Optimisation and Numerical Instabilities" (keynote), *2nd conference in simulation and multidisciplinary design optimization*, Belfort, France, May
- [C91] Edwards CS, Kim H, Budd C J (2006) "Investigation on the validity of topology optimisation method," *CD-ROM Proceedings of the 47th AIAA SDM, ASC, NDA, GSF and MDO Conference*, Newport, RI, USA, May
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- [C96] Kim H, Baker G (2001) "Topology optimisation of reinforced concrete structures," *Computational Mechanics - New Frontiers for the New Millennium: Proceedings for the 1st Asian-Pacific Congress on Computational Mechanics*, 2, pp 1251-1256, Sydney, Australia.
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Workshops

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- [W2] Kim HA (2015) "Modeling and design of multifunctional materials," *Future Transport Challenges Workshop: Energy Efficiency and the Environment*, Capua, Italy, April.

- [W3] Kim HA (2014) "Integrated Materials and Structural Optimisation for Coupled Physics Problems in Aerospace", DiPaRT workshop: The Airbus Flight Physics Distributed R&T Partnership – DiPaRT, Bristol, Nov.
- [W4] Kim HA, Bowen CR, Weaver P, Inman DJ, (2014) "Broadband Energy Harvesting using Bistable Piezo-Composites," 1st International Symposium on Energy Challenges and Mechanics, Aberdeen, UK, Jul.
- [W5] Kim HA, Bowen CR (2014) "Modelling and Optimisation of Broadband Energy Harvesters Using Bistable Composites", Energy Harvesting 2014, London, UK, Mar.
- [W6] Harris P, Bowen CR, Kim HA (2014) "Optimal Composition of Bistable Piezoelectric Plates for Maximised Broadband Energy Harvesting Performance" Workshop on Nonlinear and Multiscale Dynamics of Smart Materials in Energy Harvesting, Lublin, Poland, Feb.
- [W7] Kim HA, Kipouros T (2013) "High fidelity multidisciplinary topology optimisation with fluid-structure coupling", DiPaRT workshop: The Airbus Flight Physics Distributed R&T Partnership – DiPaRT, Bristol, Nov.
- [W8] Kim HA (2013) "MDO for topology and composites and the challenges in continuities", DiPaRT workshop: The Airbus Flight Physics Distributed R&T Partnership – DiPaRT, Bristol, Nov.
- [W9] Kim HA, Bowen CR, Betts DN (2013) Academic Poster Presentation, *the Energy Harvesting and Storage, USA 2013 conference and exhibition* (Part of "UK Energy Harvesting & Wireless Sensor Mission USA 2013), Santa Clara, LA, USA, Nov.
- [W10] Brampton CJ, Kim HA, Cunningham JL (2013) "Simulation of mechanically adaptive bone remodeling in the primal femur using topology optimisation," *Bone Research Society / British Orthopaedic Research Society Joint Meeting*, Oxford, UK, Sep.
- [W11] Kim HA (2013), "Structural Optimisation with the Level Set Method", *MDO Research Consortium Workshop*, Stanford University, Palo Alto CA, USA, Jul.
- [W12] Kim HA (2013), "Topology Optimisation Using the Level Set Method," (Keynote), General Electrics Topology Optimisation Summit, General Electrics Global Research, Schenectady NY, USA, Jun.
- [W13] Bowen CV, Kim HA, Salo AIT (2013) "Piezoelectric Composites Based on Bistable Composites," 7th International Conference on Materials on Materials for Advanced Technologies, Singapore, Jun.
- [W14] Betts DN, Bowen CR, Kim HA, Inman DJ (2013), "Optimal composition of bistable piezoelectric plates for maximised broadband energy harvesting performance," *SPIE Microtechnologies*, Grenoble, France, Apr.
- [W15] Kim HA (2012) "Topology Optimisation in Aircraft Design", *Workshop on Topology Optimization under the framework of Project ARCN TOP OPT (FCT)*, Lisbon, Portugal, Dec.
- [W16] Betts DN, Kim HA, Bowen CR, Inman DJ (2012) "Optimisation of Piezoelectric Bistable Composite Plates for Broadband Vibration Energy Harvesting," *Energy Harvesting 2012, EPSRC Network on Energy Harvesting*, Hamilton House, London, UK, Mar.
- [W17] Song Y-Z, Bowen CR, Kim HA, Nassehi A, Padgett JA, Gathercole N (2011) "Virtual visual sensors and their application in structural health monitoring", *Workshop on Uncertainty reasoning and Multi-Agent Systems for Sensor Networks (URMASSN'11)*, Belfast, Northern Ireland, Jun.

- [W18] Brampton CJ, Cunningham JL, Kim HA (2011) "Understanding of Bone Modelling via Topology Optimisation", *IMEchE Computer Simulations in Bioengineering*, London UK, Mar, March.
- [W19] Dunning PD, Seow V, Kim HA (2010) "Robust multidisciplinary design optimisation for aeroelasticity", *Annual Meeting of the Airbus Flight Physics Distributed Research and Technology Partnership – Loads and Aeroelastics*, Advanced Simulation Centre, Bristol, November
- [W20] Bowen CR, Betts DN, Giddings PF, Fong YIT, Salo AIT, Kim H (2010) "Study of an actuated bistable composite laminates for shape change applications", *European Aeronautics Science Network Workshop on Aerostructures*, EADS, Paris, October.
- [W21] Dunning PD, Kim HA, Mullineux, G (2009) "Introducing loading uncertainty in topology optimization", *The PLATO-N International Workshop Advances in Topology and Material Optimization – Methods and Industrial Applications*, DTU, Lyngby, Denmark, September
- [W22] Kim HA, Clement PJ, Howard GJ, Cunningham JL (2008), "Numerical investigation of bone's internal architecture using structural optimisation", *Meditech Crossing the Boundary Workshop: Biology and Biomechanics*, Cardiff, June
- [W23] Kim H, Bowen CR, Butler R (2006) "On bistable behaviour of asymmetric composite laminates," *Colston Research Society Symposium on Adaptive Structures*, Bristol, UK, July.
- [W24] Edwards CS, Kim H, Budd CJ (2006) "Investigation on the validity of topology Optimisation Method," *British Applied Mathematics Colloquium*, Keele UK, April.
- [W25] Cunningham JL, Clement PJ, Kim H (2005) "Bone as fully stressed design," *European Society of Biomechanics Thematic Workshop: Mechanobiology of Cells and Tissue Regeneration*, Leuven, Belgium, August.

Technical Reports and Theses

- [T1] Browne PA, Budd CJ, Gould NIM, Kim HA, Scott JA (2011) "A fast method for binary programming using first order derivatives, with application to topology optimization with buckling constraints," Technical Report RAL-TR-2011-022, Rutherford Appleton Laboratory, Chilton, Oxfordshire, England.
- [T2] Edwards CS, Kim H, Budd CJ (2006) *Investigation on the Validity of Topology Optimisation Method*, Bath Institute for Complex Systems, preprint 8/06.
- [T3] Kim H, (2000) *Development of Evolutionary Structural Optimisation: Improving Practicality and Applicability as a Design Tool*, PhD Thesis, Department of Aeronautical Engineering, University of Sydney, Australia.
- [T4] Kim H (1996) *Vector Formulation of an Optimised Topology Structure for Rapid Manufacturing*, BE (Hons) Thesis, Department of Aeronautical Engineering, University of Sydney, Australia.
- [T5] Kim H (1996) *Programmers' Guide to Graphical Viewer for Evolve*, Department of Aeronautical Engineering, University of Sydney, Australia.