Wesley Cantwell

Current Position

Director of the Aerospace Research and Innovation Centre (ARIC),
and
Associate Dean for Research

Khalifa University of Science Technology and Research,
Abu Dhabi,
United Arab Emirates

Research Interests

Composite materials, impact, lightweight aerospace structures, advanced manufacturing techniques, environmentally-friendly composites, polymers, fracture mechanics, dynamic properties of materials and smart structures.

Qualifications

BSc(Hons) (1978-1981)	Aeronautics and Astronautics, University of Southampton.
MSc/DIC (1981-1982)	Aeronautical Engineering, Imperial College, London.
PhD (1982-1985)	Aeronautical Engineering, Imperial College, London.

Employment

1982-1985	Research Assistant 1b Department of Aeronautics, Imperial College, London.
1985-1994	Senior Research Scientist Polymers Laboratory, Ecole Polytechnique Federale de Lausanne, EPFL, Switzerland.
1994-2014	Lecturer/Senior Lecturer/Reader/ Professor (from 2002) Department of Engineering, University of Liverpool.

2012-present	Director Aerospace Research and Innovation Center Associate Dean for Research Interim Chair of the Dept of Industrial and Systems Eng. (2013-2014).

Visiting Appointments

1990 (4 months)	Department of Engineering Science and Mechanics, Virginia Polytechnic Institute and State University, Virginia, United Sates.
1991 (4 weeks)	The Macromolecular Institute, Polymers Group, Prague, Czech Republic.
1996 (3 weeks)	Department of Engineering, University of Kyushu, Japan.
2001-2008	Visiting Invited Professor, Faculty of Engineering, University of Malta. (1 week per year to deliver a lecture course).
2014-present	Visiting Professor, University of Liverpool.

Research – Recent and Current Projects

Scaling Effects in Fibre-metal Laminates
This project is centred on the investigation of size effects in the static and dynamic response of fibre-metal laminates.
Funding sources: EPSRC, Mexican Government, BP, Collano.

The Manufacture of Energy-absorbing Sandwich Structures using SLM
This project uses the selective laser melting (SLM) manufacturing technique to manufacture a range of novel lattice architectures for use in the design of lightweight structures.
Funding sources: EPSRC, Airbus, MCP, BAE Systems.

Smart hybrid structures
This collaborative project with the National University of Singapore is investigating the possibility of developing smart high-performance structures based on shape memory alloys and embedded optical fibres.
Funding source: EPSRC.

Mode III Interlaminar Fracture of Composites
The aim of this project is to investigate the influence of loading rate on the Mode III fracture properties of high-performance composites.

Funding sources: EPSRC, Stesalit AG.

The High Velocity Impact Response of FMLs
This project investigates the effect of high velocity impact loading on the perforation resistance of layered structures based on novel composite materials.
Funding sources: UTM, BP.

The Low Velocity Impact Response of Sandwich Structures Based on Metal Cores
Aluminium foam is being used to manufacture a range of energy-absorbing lightweight structures for use in the aerospace and automotive industries.
Funding sources: EPSRC, BI Composites, Royal Thai Government.

Laser Forming of Hybrid Structures
This three year project is investigating the possibility of using laser forming techniques to manufacture complex shapes. The project focuses largely on fibre-metal laminates.
Funding source: EPSRC.

Sandwich Structures With Porous Metal Cores
This three year project is investigating the possibility of manufacturing a range of core materials using a sintering and dissolution process.
Funding source: Chinese Government

The Manufacture of Lightweight Hybrid Structures for the Automotive Industry
This collaborative project with the Australian National University aims to optimise the manufacturing procedures for FML structures for use in the automotive industry.
Funding sources: Australian Research Council, Ford.

Environmentally-friendly Composites and Sandwich Structures Based on Natural Fibres.
This project is investigating the fracture properties of natural fibre composites in order to charactreise the dynamic response and establish optimum manufacturing procedures.
Funding source: Malaysian Government.

The energy-absorbing capacity of tubular reinforced sandwich panels.
This project aims to develop a new range of lightweight energy-absorbing structures based on tubular composite reinforcements.
Funding source: Malaysian Government.

Grants

In Switzerland

Le Fonds National (NFP19), 1988-1991, approx. £250,000, for research on joining and repair of thermoplastic composites (with H.H. Kausch).

Dow Chemicals, 1990-1993, approx. £75,000, for research on stress corrosion in GRP composites (with H.H. Kausch).

CERS/Dow Chemicals, 1993-1994, approx. £100,000, for research on stress corrosion in GRP composites (with H.H. Kausch and S. Youd).

Swiss Government, 1993-1994, approx. £60,000 for research on fracture at bi-material interfaces (with H.H. Kausch).

In Liverpool (£10,000 and above)

DERA, 1995-1998, £10,000 for CASE award. Interlaminar fracture of composites.

Pilkington, 1995-1998, £10,000 for CASE award, Impact-resistant car windscreens.

Leverhulme Trust, 1997, £12,000 for research on recycling polymeric materials.

EPSRC, 1997-2000, £60,000 for research on sandwich materials.

Swiss Fonds National, 1997-1998, funding for a post-doctoral fellowship (value =£20,000).

ROPA, 1997-1999, £96,000 for research on novel aerospace laminates.

EPSRC, 2000-2003, £121,000 for further research on novel aerospace laminates.

EPSRC, 2001-3 years £176,000 for research on aluminium foam sandwich structures.

EPSRC, 2003-2 years £160,000 for research on blast-resistant structures.

DTi, (2000 - 2 years) £84,000 for collaborative research work with a local SME.

Australian Research Council, (2002-2005) approx £150,000 co-investigator on grant for research on lightweight structures for the automotive industry. P.I. Dr. Kalyanasundaram from the Australian National University.

EPSRC, 2003-2 years £130,000 for research on scaling in aerospace structures.

EPSRC, 2005-3 years £1,100,000 for research on the manufacture of lightweight structures using selective laser sintering (with 5 others).

EPSRC, 2005-3 years £250,000 for further research on the manufacture of lightweight core materials for energy-absorbing applications using selective laser sintering.

EPSRC, 2005-1 year £60,000 for research on smart structures.

NWDA, 2006-3 years funding for the Northwest Composites Centre (with the Universities of Manchester, Lancaster and Bolton).

EPSRC, 2007-3 years, £60,000 for an ultrasonic test facility.

SRIF, 2006, £18,000 for NDT equipment.

DTi, 2007-3 years, £200,000 for research on novel pressure vessels (PI Dr. J. Blachut).

DTi, 2008-2 years, £180,000 for novel metal fibrous structures (PI Dr. J. Blachut).

DTi, 20078-2 years, £200,000 for research on laminated materials.

Leverhulme Trust – 3 years, £150,000 for research on blast (PI Z. Guan)

KEL 2011-2012 – 1 years, £110,000 for research on knowledge exchange

Royal Society – 2011 – 3 years, £15,000 for collaboration with Uni Cape Town

PhD Students Supervised in Liverpool

M. Blyton	(1994-1998)
P. Grant	(1995-1999)
R. Scudamore	(1995-2000)
C. Santulli	(1997-2000)
J. Ratcliffe	(1997-2001)
G. Reyes	(1997-2000)
F. Gusman	(1998-2002)
H. Akil Md.	(1998-2002)
G. Wade	(1998-2001)
K. Kuang	(1998-2002) (with P. Chalker)
H. Kiratsaewee	(2000-2004)
P. Cortes	(2001-2005)
R. Abdullah	(2003-2006)
J.G.Carrillo-Baeza	(2004-2007)
Y.A. Yazid	(2004-2008)
C. Carey	(2004-2008) with G. Deardon
D. Pennas	(2004-2007)
Y. Shen	(2006-2010)
Jiying Fan	(2006-2010) with Z. Guan
Fanjing Yang	(2007-2010)
Hoo Tien Kuan	(2007-2011)
M. Smith	(2007-2011) with Z. Guan
Z. Hassan	(2008-2012)
Mat Rejab Ruzaimi	(2009-2013)
M. Al-Tenaiji	(2012-2014) with Z. Guan
S. Sheik Md Fadzullah	(2009-2014)
Mohamed Zuhri Yusoff	(2010-2015)
Jin Zhou	(2010-2015) with Z. Guan
Alia Ruzanni	(2011-present)
T. Boonkong	(2012-present)
A. Haldar	(2012-present)
N. Almitteri	(2013-present) with Z. Guan
A. Jamil	(2013-present) with Z. Guan
Z. Xu	(2014-present) with Z. Guan
R. Santiago	(2010 –2014) with Univ of Sao Paolo
A. Sexton	(2010 –2014) with ANU, Canberra
J. Nam	(2012 –present) with ANU, Canberra

At Khalifa University

H. Jishi	(2013-present)

Funding sources for PhD students:

EPSRC, NWDA, Universiti Teknologi Malaysia, Universiti Sains Malaysia, DERA, Pilkington, Royal Thai Government, CONACYT Mexico, ORS, European Union, Universiti Malaysia Sarawak, Universiti Putra Malaysia, UAE Gov, Iraqi Gov.

Research Assistants Supervised in Liverpool

Dr. C. Jones	1998-2000
A. Lenander	1997
Dr. L. Berger	1997
Dr. P. Compston	2000
Dr. G. Reyes	2001-2003
Dr. G. Wade	2001-2002
M. Anderson	2001-2003
Dr. K. Kuang	2003
Dr. J. R. Tarpani	2003
Dr. S. McKown	2003-2006
Dr. M. Simmons	2004-2005 (With GK Schleyer)
Dr. P. Cortes	2005-2006
Mr Beng Teoh	2007-2008 (with J. Blachut)
Miss Shenglan Liu	2008-2010
Dr. G. Chinnaswamy	2008-2009 (with J. Blachut)
Elena Sitnikova	2011-2014 (with Z. Guan)

Funding sources for RA's:
EPSRC, Swiss Government, Brazilian Government, DTi, Leverhulme Trust

Other Relevant Activities

Member of Journal Editorial Boards:

Composites Science and Technology (1999-present)

International Journal of Impact Engineering (2007-present)

International Journal of Polymers and Technologies (2010 – present)

Fibers (2012-present)

International Journal of Automotive Composites

Keynote and opening addresses at conferences in the United States, Brazil, Malaysia, India, Singapore and Spain.

External Examining and Evaluating Roles
External Examiner for the BEng Aerospace Eng. at Univ. of Sheffield (2003-2005).

External Examiner for the Advanced Mechanical Engineering MSc course at the University of Leicester (2006-2008).

External Examiner for Aerospace Eng. at the Universiti Putra Malaysia (2006-2008).

External Examiner for MSc in Mechanical Eng. at Dublin City Univ. (2009-2012).

External Examiner for MSc in Composite Materials at Imperial College (2010-2012)

External Examiner for numerous PhDs. International examples include: EPFL (Switzerland), Australian National University, Deakin (Australia), University of Poitiers, City University Hong Kong, University of Cape Town, Dublin City University Universiti Putra, NTU (Singapore), UPM Malaysia and Tampere (Finland).

International Reviewer for research proposals from Saudi Arabia, Switzerland Singapore, Denmark, Canada, Norway, South Africa, The Netherlands, Portugal, Czech Republic and Hong Kong.

International Reviewer for the National Research Foundation (South Africa).

Invitee of the United States Air Force through the Window on Science programme.

International Reviewer for Italian Research Assessment Exercise (Cineca) 2012-13

External Reviewer for Mock RAE in Physics and Materials at the City University of Hong Kong (Summer 2013)

Member of the Physical Sciences Panel. University Grants Committee (UGC, Hong Kong (2014-2015).

Web of Sciences Publications

H index 31 (Web of Science)
Total non-self citations 3000 (Web of Science)
Total Web of Science outputs = 220. Important paper listed below

Reviews

1. W.J. Cantwell and J. Morton.
The significance and detection of damage and defects and their detection in composite materials: A review.
Journal of Strain Analysis, 27, 1992, pp29-42.

2. W.J. Cantwell and J. Morton
Composite Materials - A survey
Encyclopedia of Chemical Technology 4th Ed., John Wiley and Sons, 1994, pp1-28. (Invited)

3. W.J. Cantwell and J. Morton
The Impact Resistance of Composite Materials : A Review
Composites, 22, 1991, pp347-362.

4. W.J. Cantwell and M. Blyton
The interlaminar Fracture Properties of Composites at Impact Rates of Strain
Key Engineering Materials, 141-143, 1998, pp463-477.

5. W.J. Cantwell, M. Blyton,
The influence of loading rate on the interlaminar fracture properties of high performance composites - A review,
Applied Mechanics Reviews, 52, 1999, pp199-212.

6. K. Kuang and W.J. Cantwell
The use of conventional optical fibres and fibre Bragg gratings for damage detection in advanced composite structures - a review
Applied Mechanics Reviews, 56, 2003, pp493-513.

7. K S C Kuang, S T Quek, C G Koh, W J Cantwell and P J Scully
Plastic Optical Fibre Sensors for Structural Health Monitoring: A Review of Recent Progress,
Journal of Sensors, 2009, doi:10.1155/2009/312053.

Book Chapters

8. W.J. Cantwell and A.C. Roulin-Moloney.
Fractography and failure mechanisms of unfilled and particulate filled epoxy resins.
Chapter 7 in Fractography and failure mechanisms of polymers and composites. Ed. A.C. Roulin-Moloney Elsevier Applied Science 1989. (50 pages)

9. W.J. Cantwell and P. Davies.
Short-term behaviour and fracture of PEEK
Chapter 6 in "Advanced thermoplastics and their composites" Ed. H.H. Kausch. Hanser Verlag Publishers, 1992, pp173-191.

11. W.J. Cantwell and H.H. Kausch,
Fracture Behaviour of Epoxy Resins.
Chapter 5 in Chemistry and Technology of Epoxy Resins, Ed. B. Ellis, Blackie, 1992.

12. P. Davies and W.J. Cantwell,
Joining and repair of thermoplastic composites.
Chapter 11 in "Advanced thermoplastics and their composites" Ed. H.H. Kausch. Hanser Verlag Publishers, 1992, pp337-366. (Invited)

13. M. Yazid Yahya, W. J. Cantwell, G. S. Langdon and G. N. Nurick
The Blast Response of Sandwich Structures
In Damage and Fracture of Composite Materials and Structures, Ed. M.N. Tamin, Springer 2012, pp189-218.

14. G. Langdon, Z. Guan and W.J. Cantwell
The Blast Response of Composite and Fibre-Metal Laminate Materials,
In "Polymer Composites in the Aerospace Industry, Woodhead Publishers 2015.

14a. M. Smith, W.J. Cantwell and Z. Guan,
The Impact and Blast Resistance of Lattice Materials,
Chapter 7 in Dynamics of Lattice Materials and Structures, John Wiley 2015.

Journal Papers – Web of Science

15. W.J. Cantwell, P.T. Curtis and J. Morton.
Post-impact fatigue performance of carbon fibre laminates with non-woven and mixed-woven layers.
Composites, 14, 1984, pp301-305.

17. W.J. Cantwell, P.T. Curtis and J. Morton.
Impact and subsequent fatigue growth in carbon fibre laminates.
International Journal of Fatigue, 6, 1984, pp113-118.

18. W.J. Cantwell, P.T. Curtis and J. Morton.
An assessment of the impact performance of CFRP reinforced with high strain carbon fibres.
Composites Science and Technology, 25, 1985, pp133-148.

19. W.J. Cantwell and J. Morton.
Detection of impact damage in CFRP laminates.
Composite Structures, 3, 1985, pp241-257.

20. A.C. Roulin-Moloney, W.J. Cantwell and H.H. Kausch.
Parameters determining the strength and toughness of particulate-filled epoxy resins.
Polymer Composites, 8, 1987, pp314-322.

21. W.J. Cantwell and A.C. Roulin-Moloney.
Fast fracture in epoxy resins.
International Journal of Fracture, 35, 1987, R31-39.

22. W.J. Cantwell.
The influence of target geometry on the high velocity impact response of CFRP.
Composite Structures, 10, 1988, pp247-265.

23. W.J. Cantwell, A.C. Roulin-Moloney and T. Kaiser.
Fractography of unfilled and particulate-filled epoxy resins.
Journal of Materials Science, 23, 1988, pp1615-1631.

24. W.J. Cantwell
The influence of fibre stacking sequence on the high velocity impact response of CFRP.
Journal of Materials Science Letters, 1988, pp756-758.

25. W.J. Cantwell, A.C. Roulin-Moloney and H.H. Kausch.
Dynamic crack propagation in the double-torsion test geometry.
Journal of Materials Science Letters, 7, 1988, pp976-980.

26. W.J. Cantwell and J. Morton.
Geometrical effects in the low velocity impact response of CFRP.
Composite Structures, 12, 1989, pp39-59.

27. W.J. Cantwell, D. Stoll and H.H. Kausch.
Crack velocity measurements in fibre reinforced composites.
Composites, 20, 4, 1989, pp389-392.

28. P. Davies, W.J. Cantwell and H.H. Kausch.
Measurement of initiation values of G_{Ic} in IM6/PEEK Composites.
Composites Science and Technology, 35, 1989, pp301-313.

29. W.J. Cantwell and J. Morton.
The influence of varying projectile mass on the impact response of CFRP.
Composite Structures, 13, 1989, pp101-114.

30. P. Davies, W.J. Cantwell and H.H. Kausch.
Healing of cracks in carbon fibre/PEEK Composites.
Journal of Materials Science Letters, 8, 1989, pp1247-1248.

31. P. Davies, W.J. Cantwell, C. Moulin and H.H. Kausch.
A study of the delamination behaviour of IM6/PEEK composites.
Composites Science and Technology, 36, 1989, pp153-166.

32. W.J. Cantwell and J. Morton
A comparison of the low and high velocity impact response of CFRP.
Composites, 20, 1989, pp545-551.

33. W.J. Cantwell and J. Morton.
Impact perforation of carbon fibre reinforced plastic.
Composites Science and Technology, 38, 1990, pp119-142.

34. W.J. Cantwell, P. Davies, P.-E. Bourban, P.-Y. Jar, H. Richard and H.H. Kausch.
Thermal joining of carbon fibre reinforced PEEK laminates.
Composite Structures, 16, 1990, pp305-322.

35. W.J. Cantwell, P. Davies and H.H. Kausch.
The effect of cooling rate on deformation and fracture in IM6/PEEK.
Composite Structures, 14, 1990, pp151-171.

36. W.J. Cantwell and J. Morton.
An assessment of the post-impact load-bearing properties of a carbon fibre reinforced plastic.
Composite Structures, 14, 1990, pp303-317.

37. P.-Y. Jar, H.H. Kausch, W.J. Cantwell, P. Davies and H. Richard.
The effect of annealing on the short and long-term behaviour of PEEK.
Polymer Bulletin 24, 1990, pp657-664.

38. P. Davies, W.J. Cantwell, P.-Y. Jar, P.-E. Bourban, V. Zysman and H.H. Kausch.
Joining and Repair of a Carbon Fibre Reinforced Thermoplastic.
Composites 22, 1991, pp425-431.

39. W.J. Cantwell, M. Büsser and H.H. Kausch
An analysis of the impact response of a composite beam.
Composites Engineering, 1, 1991, pp293-307.

40. P.-Y. Jar, W.J. Cantwell and H.H. Kausch,
Study of the crystal morphology and the deformation behaviour of carbon fibre reinforced PEEK.
Composites Science and Technology, 43, 1992, pp299-306.

41. W.J. Cantwell and H.H. Kausch,
An evaluation of the interlaminar fracture toughness of a thermoplastic composite with offset centre plies.
Mechanics of Composite Materials 4,1992, pp476-483.

42. W.J. Cantwell, W. Tato, H.H. Kausch and R. Jacquemet,
The influence of a fiber-matrix coupling agent on the properties of a glass fiber/polypropylene GMT.
Journal of Thermoplastic Composites, 5, 1992, pp304-317.

43. W.J. Cantwell and P. Davies,
A test technique for assessing skin/core adhesion in composite sandwich structures.
Journal of Materials Science Letters, 13, 1994, pp203-205.

44. P. Davies and W.J. Cantwell,
Fracture of glass/polypropylene laminates : Influence of cooling rate after moulding.
Composites, 25, 1994, pp896-877.

45. C. Koster, V. Alstadt, H.H. Kausch and W.J. Cantwell
Split Rate Fatigue Propagation in Polymer Blends.
Polymer Bulletin, 34, 1995, pp243-248.

46. W.J. Cantwell.
The interlaminar fracture behaviour of carbon fibre reinforced plastics at low temperatures.
Journal of Aerospace Engineering, 210, 1996, pp1-7.

47. W.J. Cantwell.
Loading Rate Effects in the Mode II Fracture of Carbon Fibre PEEK Composites.
Journal of Materials Sci. Letters, 15, 1996, pp639-641.

48. W.J. Cantwell.
The influence of stamping temperature on the mechanical properties of a glass mat thermoplastic composite.
Journal of Composite Materials, 30, 1996, pp1266-1281.

49. Lu Fan, W.J. Cantwell and H.H. Kausch and M. Fischer,
The effect of crosslink density on the fracture toughness of core-shell modified epoxy resins,
Journal of Materials Sci. Letters, 15, 1996, pp1018-1021.

50. W.J. Cantwell, G. Broster and P. Davies,
The influence of water immersion on skin-core debonding in GFRP-balsa sandwich structures,
Journal of Reinforced Plastics and Composites, 11, 1996, pp1161-1172.

51. W.J. Cantwell,
The influence of loading rate on the mode II interlaminar fracture toughness of Composite Materials,
Journal of Composite Materials, 31, 1997, pp1364-1380.

52. W.J. Cantwell and S.J. Youd.
Rate Effects in the Fracture Behaviour of CSM Composites.
Composites, 28, 1997, pp635-640.

53. W.J. Cantwell and P. Davies,
A study of skin-core adhesion in composite sandwich materials,
Applied Composite Materials, 3, 1996, pp407-420.

54. W.J. Cantwell
The interlaminar fracture properties of carbon fibre reinforced PEEK laminates with offset centre plies.
Journal of Reinforced Plastics and Composites, 16, 1997, pp1632-1641.

55. F. Lu, C.J.G. Plummer, W.J. Cantwell and H.H. Kausch,
Toughening mechanisms in modified epoxy resins with different crosslink densities,
Polymer Bulletin, 37, 1996, pp399-406,

56. P.V. Grant, W.J. Cantwell, H. Mckenzie and P. Corkhill
The Damage Threshold of Laminated Glass Structures
International Journal of Impact Engineering, 21, 1998, pp737-746.

57. W.J. Cantwell, J. Ratcliffe, R. Scudamore and P. Davies,
Interfacial fracture in sandwich laminates,
Composites Science and Technology, 59, 1999, pp2079-2085.

58. W.J. Cantwell,
The fracture behaviour of glass fiber/recycled PET composites,
Journal of Reinforced Plastics and Composites, 18, 1999, pp373-387.

59. W.J. Cantwell, M. Blyton, P. Sixsmith and M. Hiley,
The influence of loading rate on the mixed-mode interlaminar fracture properties of carbon fibre reinforced PEEK,
Journal of Materials Sci. Letters, 17, 1998, pp1103-1106.

60. P. Grant and W.J. Cantwell
A simple catapult system for studying the small projectile impact resistance of various glass laminates
Journal of Testing and Evaluation, 27, 1999, pp177-182.

61. G. Reyes, W.J. Cantwell
The effect of strain rate on the interfacial fracture properties of carbon fibre-metal laminates,
Journal of Materials Science Letters, 17, 1998, pp1953-1955.

62. J. Ratcliffe and W.J. Cantwell,

A new geometry for characterizing skin-core adhesion in thin-skinned sandwich structures.
Journal of Materials Science Letters 19, 2000, pp1365-1367.

63. G. Reyes and W.J. Cantwell,
The mechanical properties of fibre-metal laminates based on glass fibre reinforced PP.
Composites Science and Technology 60, 2000, pp1085-1094.

64. J. Ratcliffe and W.J. Cantwell,
The Centre Notch Flexure Sandwich Geometry for Characterising Skin-Core Adhesion in Thin-Skinned Sandwich Materials,
Journal of Reinforced Plastics and Composites, 20, 2001, pp945-970.

65. L. Berger and W.J. Cantwell
The Effect of Temperature and Loading Rate on the Mode II Interlaminar Fracture Properties of a Carbon Fibre Reinforced Phenolic.
Polymer Composites 22, 2001, pp165-173.

66. L. Berger and W.J. Cantwell
Temperature and Loading Rate Effects in the Mode II Interlaminar
Fracture Behaviour of Carbon Fibre Reinforced PEEK
Polymer Composites 22, 2001, pp271-281.

67. G.A. Wade, W.J. Cantwell and R.C. Pond
Plasma surface modification of glass fibre-reinforced Nylon 6,6 thermoplastic composites for improved adhesive bonding,
Interface Science 8, 2000, pp363-373.

68. R.J. Scudamore and W.J. Cantwell
The effect of moisture and loading rate on the interfacial fracture properties of sandwich structures,
Polymer Composites, 23, 2002, 406-417.

69. K.S.C. Kuang and W.J. Cantwell,
In-situ process monitoring of a thermoplastic-based fibre composite using optical fibre sensors.
Smart Materials and Structures 11, 2002. pp.840-847.

70. K.S.C. Kuang , R. Kenny, M.P. Whelan, W.J. Cantwell and P.R. Chalker.
Embedded fibre Bragg grating sensors in advanced composite materials
Composite Science and Technology.61, 2001, pp.1379-1387.

71. K.S.C. Kuang , R. Kenny, M.P. Whelan, W.J. Cantwell and P.R. Chalker
Residual strain measurement and impact response of optical fibre Bragg grating sensors in fibre metal laminates,
Smart Materials and Structures 10, 2001, pp338-346.

72. G.A. Wade and W.J. Cantwell
Temperature and loading rate effects on the fracture behaviour of adhesively-bonded nylon 6,6.
Journal of Adhesion.76, 2001, pp245-264.

73. F. Guillen and W. J. Cantwell
The influence of cooling rate on the fracture properties of a thermoplastic-based fibre metal laminate,
Journal of Reinforced Plastics and Composites, 21, 2002, pp749-772.

74. F. Guillen and W.J. Cantwell

The influence of Cooling Conditions on the Fracture Properties of a Glass Fibre Reinforced/Nylon Fibre Metal Laminate.
Polymer Composites 23, 2002, 839-851.

75. Md. Akil Hazizan and W.J. Cantwell,
The low velocity impact response of foam-based sandwich structures,
Composites Part B 33, 2002, 193-204.

76. K. Kuang and W.J. Cantwell,
Detection of impact damage in thermoplastic-based fibre-metal laminates using optical fibre sensors,
Journal of Materials Science Letters 21, 2002, 1351-1354.

77. K. Kuang, W.J. Cantwell and P. Scully
An evaluation of a novel plastic optical fibre sensor for axial strain and bend measurements,
Measurement Science and Technology 13, 2002, 1523-1534..

78. K. Kuang and W.J. Cantwell,
Real-time damage detection in thermoplastic-based composite materials with embedded multi-mode optical fibre sensors
Polymer Composites 2002, 23, pp603-618.

79. P. Kiratasaewee and W.J. Cantwell,
The fracture behaviour of aluminium foam sandwich structures based on fibre reinforced thermoplastics.
Journal of Sandwich Structures, 5, 2003, pp53-75.

80. Md. Akil Hazizan and W.J. Cantwell,
The low velocity impact response of an aluminium-honeycomb sandwich structure
Composites Part B 34, 2003, pp679-687..

81. K. Kuang, Akmaluddin,W.J. Cantwell and C. Thomas
Crack detection and vertical displacement monitoring in concrete beams using plastic optical fibre sensors,
Measurement Science and Technology, 14, 2003, 205-216.

82. K. Kuang W.J. Cantwell,
The use of plastic optical fibre sensors for monitoring the dynamic response of fibre composite beams,
Measurement Science and Technology 14, 2003, 736-745.

83. Y.M. Wong, P.J. Scully, R.J. Bartlett, K. Kuang and W.J. Cantwell,
Plastic optical fibres for environmental monitoring; Biofouling and strain applications,
Strain, 39, 2003 pp.115-119.

84. K.S.C. Kuang and W.J. Cantwell,
The use of optical fibres and shape memory alloys for damage assessment and damping control in composite materials,
Measurement Science and Technology 14, 2003, 1305-1313

85. K. Kuang and W.J. Cantwell,
Detection of impact damage in thermoplastic-based glass fiber composites using embedded optical fiber sensors
Journal of Thermoplastic Composites 16, 2003, pp213-229.

86. P. Kiratasaewee and W.J. Cantwell,

The impact response of aluminium foam sandwich structures based on a glass fibre reinforced polypropylene fibre-metal laminate.
Polymer Composites, 24, 2004, 499-509.

87. G. Reyes-Villanueva and W.J. Cantwell
The high velocity impact response of composite and FML reinforced sandwich structures,
Composites Science and Technology, 64, 2004, pp35-54.

88. P. Cortes and W.J. Cantwell
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