



***Dr John Leslie Henshall MA PhD (Cantab) CEng
Technical Director BLEN Enterprises Limited
Technical Director Bfhn Technologies Limited***

Biopic

Education:

- 1962-69** **West Park Grammar School, St Helens, Lancashire.**
Awarded 9 GCE Ordinary Level passes, 4 GCE Advanced Level Grade A passes and 2 Special papers.
- 1969-75** **Cambridge University (Scholarship at Christ's College)**
Awarded a First Class Honours Bachelor of Arts degree in Natural Sciences (Materials Science) and the degree of Doctor of Philosophy for a thesis on the Microstructure and Mechanical Properties of Silicon Carbide and Silicon Nitride Ceramics.

Professional Qualifications:

- 1979** **Member Institution of Metallurgists**
(now Institute of Materials, Mining and Mineralogy)
- 1979** **Chartered Engineer**
- 1985** **Member Institute of Road Transport Engineers**
(now Society of Operations Engineers)
- 1998** **Honorary Professor, Yanshan University, Qinhuangdao, China**



Employment History:

1973-74	Research Scientist, Brown Boveri AG, Dättwil, Switzerland
1975-78	CEGB Fellow in the Department of Metallurgy and Science of Materials, Oxford University, and College Lecturer, Christ Church, Oxford
1978-96	Lecturer/Senior Lecturer School of Engineering, Exeter University
1996-2001	Professor, Department of Mechanical Engineering, Brunel University,
2001-04	Professor, Department of Mechanical and Manufacturing Engineering, Nottingham Trent University
2004 →	Technical Director, BLEN Enterprises Ltd.
2008 →	Technical Director, Bfhn Technologies Ltd.

Personal Interests:

My main means of relaxation and enjoyment is to wander, preferably around hills and dales, particularly on Dartmoor. My other main interest is reading; I particularly enjoy Private Eye, local history, psychology, and science fiction and thrillers. I spend more of my time than I would wish on DIY around the house!

Research and Consultancy Specialisations:

Consultancy

Consultancy, including expert witness appearances, has been undertaken for more than 25 years, with more than 100 technical reports. The areas of specialisation have included:

Failure Analysis in Mechanical, Electrical, Medical and Marine Components.

This has included investigations and reports on:

- **Wheels and fixing systems, particularly for commercial vehicles**
- **Failed automotive and marine engines**
- **Stepladders**
- **Integrated circuits/components**
- **Urological and anaesthetic medical devices**
- **Failed agricultural components**

Mechanical Engineering Design,

This has included the design of following:

- **A tank to fit onto a trailer to transport bituminous materials**
- **A medical device to effect female sterilisation**



- An additional component to improve wheel security on commercial vehicles

Property/Geometry Testing

This has included the following:

- Determination of the tensile and fatigue strengths and hardnesses of various metals, ceramics and plastics, including low (-196°C) and high (1500°C) temperatures
- Testing to Standards/Specifications, including British Standards for Private and Public organisations (such as Trading standards)

Material Analysis and Microstructural Evaluation

This has included:

- Testing to Standards/Specifications for chemical composition
- Preparation for, and microstructural examination of, a range of metals and ceramics
- Examinations of thin coatings for thickness, composition and structure

Research

The aim of the major part of my research activities is to study the relationship between the processing, microstructure and mechanical behaviour of materials, particularly advanced ceramics, composites and metals. This has included the following:

- **The manufacture of advanced materials**, which has concentrated on developing a novel ceramic coating method, manufacture of silicon nitride based ceramic nano/micro-filters and tough ceria stabilised tetragonal zirconias, manufacture of nanoparticulate reinforced plastics and novel electrically/optically active end-substituted alkanes
- **The machining of materials** has been studied with respect to the use of ultrahard material tools, green compact machining of ceramics, and the role of lubricants in conventional metal cutting.
- **Applying optimal design techniques with composite materials**, (collaborative research with Professor Morozov, University of Natal, SA) has been concerned in the first instance with particular reference to the design of silos. The papers on this topic were awarded a prize by the Institution of Mechanical Engineers
- **Mechanical property measurements and interpretation**, including the development of new testing techniques such as the soft impresser method, for a range of metal alloys, ceramics and ultrahard materials
- **Modelling the properties of materials** using analytical and/or numerical approaches (finite element/boundary element) as appropriate.



Professional Activities:

Current

Member of the EPSRC Structural Materials College, which involves refereeing grant applications, attending grant awarding panel meetings and being involved with the strategic planning of the MAPEA activities.

Member of the Editorial Board of the International Journal of Condition Monitoring and Diagnostic Engineering Management (COMADEM)

Member of the European Task Group on Fracture Mechanisms

Member of the European Task Group on Ceramics

Member of the UK VAMAS Wear Group

Technical Consultancy

Plus the usual activities such as refereeing for journals, chairing conference sessions, presentations at SERC/EPSRC Workshops, etc.

Previous

Member West of England Metals and Materials Committee

Member IRTE Wheel Security working party

Advisor to the British Standards Committee preparing new Standards on wheels and wheel fixing systems

Technical assessor of mature candidates for Institution of Materials and Institution of Mechanical Engineers

Chairman of Conference on Indentation Testing

Member of the Editorial advisory Board of Res Mechanica



Teaching Activities:

University courses:

Physical Principles (year 0)

Introductory Design Technology Projects – Manufacturing Engineering (year 1)

Introduction to Statics and Dynamics (Year 1)

Statics and Dynamics (Year 1)

Manufacturing Operations and Management (Year 1)

Design Process and Selection of Materials (Year 1)

Measurement and Instrumentation (Year 1)

Mechanical Science (year 1)

Properties of Matter (year 1)

Electricity and Magnetism (year 1)

Computer Aided Design Projects – Materials & Manufacture (year 2)

Manufacturing & Materials 2 (year 2)

Design Procedures and Component Design (Year 2)

Mechanical Engineering Design Applications (year 2)

Materials and Manufacture (year 2)

Design Technology – Advanced Materials & Design (year 3)

Manufacturing and Materials Engineering 3 (year 3)

Design and Manufacture (Folding Commuter Pedal Cycle) (year 3)

Engineering Systems Design (Year 3)

Finite Element Analysis (ANSYS) example classes (Year 3)

Design for Manufacture (Year 3)

Production Technology (year 3)

Fracture Mechanics and Mechanisms (year 3)

Structure and Properties of Matter III (year 3)

Advanced Materials Science (year 3/4)

Civil Engineering Materials (year 3/4)

Manufacturing Technology (year 3/4)

Development & Manufacturing Technologies (year 4)

Advanced Solid Mechanics (year 4)

Undergraduate and Masters Projects: Typically 10-20 students on individual or group projects, including liaison with industry.

In addition to these University courses, a limited number of short courses have been prepared and presented. For example, in collaboration with a colleague in August 1999 a 2 day course at the Castrol Research Centre.



Scientific Publications:

Note: This is a relatively long list of my scientific publications and not for the faint-hearted to peruse! I have also long ago lost count of the number of conference and allied presentations that I have made and other technical reports that have been written.

- 1. J L Henshall, D J Rowcliffe and J W Edington, 'Fracture Parameters in Refel Silicon Carbide, J. Mater. Sci., 9 (1974) 1159 - 1561.**
- 2. J L Henshall, D J Rowcliffe and J W Edington, 'The Fracture Toughness and Delayed Fracture of Hot-Pressed Silicon Nitride', in Special Ceramics 6, (1975) 185 - 198.**
- 3. J W Edington, D J Rowcliffe and J L Henshall, 'Mechanical Properties of Silicon Nitride and Silicon Carbide I: Materials and Strength', Powder Metallurgy International, 7 (1975) 82 - 96.**
- 4. J W Edington, D J Rowcliffe and J L Henshall, 'Mechanical Properties of Silicon Nitride and Silicon Carbide II: Engineering Properties', Powder Metallurgy International, 7 (1975) 136 - 147.**
- 5. J L Henshall, D J Rowcliffe and J W Edington, 'Fracture Toughness of Single Crystal Silicon Carbide', J. Amer. Ceram. Soc., 60 (1977) 373 - 375.**
- 6. J L Henshall, D J Rowcliffe and J W Edington, 'The Measurement of K_{Ic} and Subcritical Crack Propagation Rates in Hot-Pressed SiC and Si₃N₄', in Proceedings of the Fourth International Conference on Fracture, Vol. 3, (1977) 875 - 882.**
- 7. J L Henshall, M G Gee, G Singh and G A C Boyd, 'Creep Crack Growth in AISI 316 Stainless Steel and a Quenched 1 Cr 0.5 Mo Steel', in Proceedings of the Third International Conference on the Strength of Materials, Vol. 2, (1979) 309 - 319.**
- 8. J L Henshall, D J Rowcliffe and J W Edington, ' K_{Ic} and Delayed Fracture Measurements on Hot-Pressed SiC', J. Amer. Ceram. Soc., 62 (1979) 36 - 41.**
- 9. G Singh, G A C Boyd and J L Henshall, 'Effect of Prior Aging on the Creep Properties of 316 Stainless Steel', Met. Trans., 11A (1980) 539 - 542.**
- 10. J L Henshall, 'High Temperature Slow Crack Growth in Hot Pressed Silicon Carbide', Res Mechanica, 1 (1980) 229 - 248.**
- 11. G A C Boyd and J L Henshall, 'A Model for the Initiation of Cavitation and its Application to the Creep Fracture of 316 Stainless Steel', in Proceedings of the Fifth International Conference on Fracture, Vol. 4, (1981) 1665 - 1672.**
- 12. J L Henshall, 'The Mechanics and Mechanisms of Subcritical Crack Propagation in Hot-Pressed SiC above 1000 °C', in Proceedings of the Fifth International Conference on Fracture, Vol. 4, (1981) 1541 - 1549.**
- 13. J L Henshall, 'Back to Basics on Wheelstud Failure', Transport Engineer (1984) 7 - 11.**



14. **J L Henshall and M G Gee, 'Creep Crack Propagation at 565°C in a Bainitic 1 Cr 0.5 Mo Steel', in Proceedings of the Second International Conference on Creep and Fracture of Engineering Materials and Structures, Vol. 2, (1984) 901 - 911.**
15. **T A Ainscow, M R Belmont, R M Hooper and J L Henshall, 'Anisotropy in Single Crystals of 1,12-dinitrododecane', Conference on Polymer and Thin Film Electronics, Sussex, (1986), Extended Abstract.**
16. **J L Henshall and C A Brookes, 'The Measurement of K_{Ic} in Single Crystal SiC using the Indentation Method', J. Mater. Sci. Letters, 4 (1985) 783 - 786.**
17. **J L Henshall and M G Gee, 'Creep Crack Propagation in a Bainitic 1 Cr 0.5 Mo steel between 540°C and 590°C', Mat. Sci. Eng., 80 (1986) 49 - 57.**
18. **J Dickson-Simpson and J L Henshall, 'Wheelfixings: What we now know', The Lost Wheels Mystery, 2nd edition, IRTE, London, (1986) 21 - 22.**
19. **J L Henshall, 'The Maths of Wheelstud Failure', The Lost Wheels Mystery, 2nd Edition, IRTE, London, (1986) 23 - 24.**
20. **T A Ainscow, M R Belmont, J L Henshall, R M Hooper and D J Simmonds, 'Synthesis of Four n-Alkanes with Terminal Dipolar Substituents', Tetrahedron, 43 (1987) 115 - 122.**
21. **T A Ainscow, M R Belmont, R M Hooper, J L Henshall and D J Simmonds, 'Dielectric Properties of 1,12 Dinitrododecane in Dilute Solution', J. Phys. D: Applied Physics, 20 (1987) 785 - 789.**
22. **T A Ainscow, R M Hooper, J L Henshall, M R Belmont, E A Nicol and J R Birch, 'A Novel Molecular Composite Material', J. Mater. Sci. Letters, 6 (1987) 516 - 518.**
23. **M R Belmont, G A Duller, T A Ainscow, R M Hooper and J L Henshall, 'Monte Carlo Calculations of the Effects of Conformational Behaviour in Long Chain End-Substituted Alkanes' Ninth International Conference on Conduction and Breakdown in Dielectric Liquids, Salford, (1987) Extended Abstract.**
24. **T A Ainscow, M R Belmont, R M Hooper and J L Henshall, 'Dispersed Phase Behaviour of Long Chain End-Substituted Alkanes', Ninth International Conference on Conduction and Breakdown in Dielectric Liquids, Salford, (1987) Extended Abstract.**
25. **G M Carter, J L Henshall and R M Hooper, 'Indentation Creep in Single Crystal Cubic Zirconia at Room Temperature', J. Amer. Ceram. Soc., 71 (1988) C270.**
26. **M B Hursthouse, R L Short, T A Ainscow, J L Henshall, R M Hooper and M R Belmont, 'The Structure of 1,12-dinitrododecane - An Alkane with Terminal Dipolar Substituents', Acta Cryst. C, C44 (1988) 689 - 691.**
27. **T A Ainscow, M R Belmont, J L Henshall and R M Hooper, 'Conformational Properties of Substituted Alkanes in Solution: - Terminal Nitro Functionalities, a preliminary account', IEEE Trans. on Electrical Insulators, 23 (1988) 595 - 600.**
28. **J L Henshall and S G Makinson, 'The Stresses and Strains', in Research of Wheel Insecurity on Heavy Commercial Vehicles, IRTE, London, (1988) 20 - 90.**



29. **J Knezevic and J L Henshall, 'Estimation of the Design Life for Notched Components subjected to Creep Cracking using a Condition Parameter Based Reliability Approach', Materials 88: Proceedings of the International Conference on Materials Engineering and Design, IOM, London, (1988) F1 - F2.**
30. **G M Carter, J L Henshall and R M Hooper, 'Creep of Zirconia Ceramics Below 0.2 T_m', Materials 88: Proceedings of the International Conference on Materials and Engineering Design, IOM, London, G1 - G3.**
31. **P G Kalaugher and J L Henshall, 'Damage Assessment in Mining Regions using the Direct Mixed Fusion Technique', Mineworkings 88: Proceedings of the Second International Conference on Construction in Areas of Abandoned Mineworkings, (1988) 77 - 84.**
32. **G A Duller, T A Ainscow, J L Henshall, R M Hooper and M R Belmont, 'Monte Carlo Simulation of Polar End Group Substituted Alkanes', IEEE Trans. on Electrical Insulators, 24 (1989) 47 - 57.**
33. **J L Henshall, G M Carter and R M Hooper, 'Indentation Creep in Zirconia Ceramics', in Mechanics of Creep Brittle Materials - 1, (1989) 117 - 128.**
34. **R M Hooper, M-O Guillou and J L Henshall, 'Time Dependent Indentation Creep and Fracture in Cubic Boron Nitride Aggregates', Proceedings of the 40th Diamond Conference, ed. J. E. Field, Bristol, July 1989, Extended Abstract**
35. **M-O Guillou, G M Carter, R M Hooper and J L Henshall, 'Hardness and Fracture Anisotropy in Single Crystal Zirconia', Journal of Hard Materials, 1 (1990) 65 - 78.**
36. **M-O Guillou, J L Henshall and R M Hooper, 'Time Dependent Effects in the Room Temperature Indentation Hardness and Fracture of Cubic Boron Nitride Aggregates', Journal of Hard Materials, 1 (1990) 289 - 296.**
37. **S T Thuraisingham and J L Henshall, 'The Influence of Chemical Environment on the Indentation Hardness and Toughness of Ceria-Stabilised Tetragonal Polycrystalline Zirconia', in Proceedings of the 21st Biennial Conference of the Institute for Briquetting and Agglomeration, (1990) 131 - 141.**
38. **R M Hooper, M-O Guillou and J L Henshall, 'Indentation Fracture Toughness of Amborite and Syndite', Proceedings of the 41st Diamond Conference, ed. J. E. Field, Reading, July 1990, 14.0-14.3**
39. **W B Li, J L Henshall, R M Hooper and K E Easterling, 'The Mechanisms of Indentation Creep', Acta Met. Mat., 39 (1991) 561 - 570.**
40. **G M Carter, J L Henshall and R J Wakeman, 'Influence of Surfactants on the Mechanical Properties and Comminution of Wet-Milled Calcite', Powder Technology, 65 (1991) 403 - 410.**
41. **G M Carter, R M Hooper, J L Henshall and M-O Guillou, 'Friction of Metal Sliders on Toughened Zirconia between 298 and 973 K', Wear, 148 (1991) 147 - 160.**
42. **R M Hooper, M-O Guillou and J L Henshall, 'Indentation Studies of cBN-TiC Composites', Journal of Hard Materials, 2 (1991) 223 - 231.**



43. **M R Belmont, R M Hooper, J L Henshall, J R Birch, E A Nicol and T A Ainscow, 'Far-Infrared Anisotropy in Polar End-Group Substituted Alkanes', *Infrared Physics*, **31** (1991) 561 - 570.**
44. **J L Henshall, G M Carter, K E Easterling, R M Hooper and W B Li, 'Modelling the Mechanisms and Mechanics of Indentation Creep with Application to Zirconia Ceramics', in *Mechanics of Creep Brittle Materials - 2*, (1991) 313 - 325.**
45. **J L Henshall, M-O Guillou, R M Hooper and G M Carter, 'The Analysis of Indentation Cracking', Exeter conference on Indentation Hardness, Creep and Toughness of Ceramics, April 1991, Extended Abstract.**
46. **R M Hooper, J L Henshall, M-O Guillou and G M Carter, 'Low Temperature Indentation Creep Results in Ceramics and Ultrahard Materials', Exeter conference on Indentation Hardness, Creep and Toughness of Ceramics, April 1991, Extended Abstract.**
47. **A Klopfer, R M Hooper and J L Henshall, 'Observations on the Friction and Wear of Polycrystalline Diamond Tools used in the Cutting of Metal Matrix Composites', *Proceedings of the 42nd Diamond Conference*, ed. J. E. Field, Oxford, July 1991, P5.1-P5.2.**
48. **M-O Guillou, R M Hooper and J L Henshall, 'Indentation Studies of Cubic Boron Nitride: Titanium Carbide Composites', *Proceedings of the 42nd Diamond Conference*, ed. J. E. Field, Oxford, July 1991, 22.1-22.3.**
49. **M-O Guillou, J L Henshall, R M Hooper and G M Carter, 'Indentation Fracture Testing and Analysis and its Application to Zirconia, Silicon Carbide and Silicon Nitride Ceramics', *Journal of Hard Materials*, **3** (1992) 421 - 434.**
50. **M-O Guillou, J L Henshall, R M Hooper and G M Carter, 'Indentation Hardness and Fracture in Single Crystal Magnesia, Zirconia and Silicon Carbide', in *Special Ceramics 9*, *British Ceramic Proceedings No. 49*, Institute of Ceramics, Stoke-on-Trent, (1992) 191 - 202.**
51. **R M Hooper, J L Henshall and A Klopfer, 'The Wear of Syndite Polycrystalline Diamond Tools used in the Cutting of Metal Matrix Composites', *Proceedings of the 43rd Diamond Conference*, ed. J. E. Field, Cambridge, July 1992, Extended Abstract.**
52. **G M Carter, J L Henshall and R J Wakeman, 'Knoop Hardness and Fracture Anisotropy of Calcite', *J. Mater. Sci. Letters*, **12** (1993) 407 - 410.**
53. **J L Henshall, R M Hooper, K E Easterling and W B Li, 'On the Indentation Hardness and Creep Testing of Hard Materials', *Journal of Hard Materials*, **4** (1993) 1 - 10.**
54. **M-O Guillou, J L Henshall and R M Hooper, 'Indentation Cyclic Fatigue of Single-Crystal Magnesium Oxide' *J. Amer. Ceram. Soc.*, **76** (1993) 1832 - 1836.**
55. **R J Wakeman, J L Henshall and G M Carter, 'Solution Environment Effects on the Hardness and Toughness of Calcite', *Trans IChemE*, **71** (1993) 361 - 370.**
56. **M-O Guillou, J L Henshall and R M Hooper, 'Repeated Point Contact Loading on Ce-TZP', *Wear*, **170** (1993) 247 - 253.**



57. **J L Henshall and S T Thuraisingham, 'Compaction and Sintering of Toughened Zirconia Ceramics', British Ceramic Proceedings No. 50, Institute of Materials, London, (1993) 173 - 179.**
58. **J L Henshall, 'Ceramic Membrane Filters', Ceramic Technology International 1994, Sterling plc, London, (1993) 74 - 76.**
59. **R J Wakeman, J L Henshall and S G Ng, 'Sialon Membrane Coated Silicon Nitride Microfilters', Trans IChemE, 72 Part A (1994) 227 - 235.**
60. **S T Thuraisingham and J L Henshall, 'Processing High Quality Toughened Zirconia Ceramics by Controlling the Chemistry at the Particle-Particle Interface', in Proceedings of the Materials Research Society Meeting, Boston, USA, Nov. 93, Vol. 318 (1994) 343 - 348.**
61. **R M Hooper M-O Guillou and J L Henshall, 'Indentation Studies of Cubic Boron Nitride: Titanium Carbide Composites', in Proceedings of the Fourth International Conference on the Science of Hard Materials, IOP publishing, Bristol, (1994) 399 - 407.**
62. **M-O Guillou, J L Henshall, R M Hooper and G M Carter, 'Indentation Fracture Testing and Analysis and its Application to Zirconia, Silicon Carbide, Silicon Nitride and Sialon Ceramics', in Proceedings of the Fourth International Conference on the Science of Hard Materials, IOP publishing, Bristol, (1994) 579 - 592.**
63. **R J Wakeman, J L Henshall and S G Ng, 'SiAlON Membrane Filters: Manufacture and Characterisation', IChemE Research Event, London, (1994) 752 - 754.**
64. **C R Maerky, M-O Guillou, R M Hooper and J L Henshall, 'A Comparison of Surface Contact Fatigue Effects in Syndite and Ceramic Materials', Proceedings of the 45th Diamond Conference, Reading, July 1994, P18.1-P18.3.**
65. **J L Henshall, S G Ng and R J Wakeman, 'Synthesis and Microstructure of SiAlON Membrane Filters', British Ceramic Proceedings No. 53, Institute of Materials, London, (1994) 59 - 71.**
66. **J L Henshall and S T Thuraisingham, 'Controlled Chemistry Wet-Processing of a Toughened Zirconia', British Ceramic Proceedings No. 53, Institute of Materials, London, (1994) 89 - 98.**
67. **R J Wakeman, J L Henshall and S G Ng, 'Porous Self-Supporting Ceramic Filter and Membrane', UK Patent Application 2277885, (1994).**
68. **M-O Guillou, J L Henshall and R M Hooper, Surface Fatigue in Ceria-stabilized Polycrystalline Tetragonal Zirconia between Room Temperature and 1073 K', J. Mater. Sci., 30 (1995) 151 - 161.**
69. **M-O Guillou, J L Henshall and R M Hooper, 'The Measurement of Surface Contact Fatigue and Its Application to Engineering Ceramics', Proceedings of the Fifth International Conference on the Science of Hard Materials, ed. V K Sarin, Elsevier, (1996) 116-127.**
70. **C R Maerky, M-O Guillou, J L Henshall and R M Hooper, 'Indentation Hardness and Fracture Toughness in TiC_{0.96} Single Crystal', Proceedings of the Fifth**



- International Conference on the Science of Hard Materials, ed. V K Sarin, Elsevier (1996) 329-336.
71. J L Henshall, R M Hooper and M-O Guillou, 'A Novel Method for the Measurement of Surface Contact Fatigue and Its Application to Zirconia Ceramics', *Tribology International*, **28** (1995) 363 - 376.
 72. J L Henshall, M-O Guillou and R M Hooper, 'The Assessment of Surface Fatigue Effects in Toughened Zirconia using a New Point Contact Method', 7th International Conference on Mechanical Behaviour of Materials, Extended Abstracts, May/June 1995, 167 - 168.
 73. R Biswas, J L Henshall and R J Wakeman, 'Deformation and Fracture in A Model Brittle Particulate System: Quartz-Perspex', 7th International Conference on Mechanical Behaviour of Materials, Extended Abstracts, May/June 1995, 139 - 140.
 74. R J Wakeman, J L Henshall and S G Ng, 'Structural and Performance Characteristics of SiAlON Microfiltration Membranes', *Filtech Conference, Karlsruhe, 1995, Filtration Society, Horsham, West Sussex, UK*, pp. 27 - 35.
 75. M-O Guillou, R M Hooper and J L Henshall, 'The Variation of Indentation Fracture with Temperature in Silicon Carbide, Silicon Nitride and Zirconia', in *Fracture Mechanics of Ceramics Vol.12: Fatigue, Composites and High Temperature Behavior*, ed. R C Bradt, D P H Hasselman, D Munz, M Sakai and Y Va Shevchenko, Plenum, 1996, pp 539-550.
 76. R Biswas, J L Henshall and R J Wakeman, 'Modelling Stress Distributions and Fracture in Brittle Particulate - Brittle Matrix Composites', in *Fracture Mechanics of Ceramics Vol.12: Fatigue, Composites and High Temperature Behavior*, ed. R C Bradt, D P H Hasselman, D Munz, M Sakai and Y Va Shevchenko, Plenum, 1996, pp 399-412.
 77. R J Wakeman, J L Henshall and S G Ng, 'Modification of SiAlON Microfilters by Pressureless Sintering, Pyrolysis of Organometallic Precursors and Nitridation of Thin Films', *Trans. I. Chem. E. Chemical Engineering Research and Design*, **74 Part A** (1996) 329 - 339.
 78. R C Morgan and J L Henshall, 'The Torque-Tension Behaviour of 22 x 1.5 mm bolts for Fixing Wheels on Heavy Commercial Vehicles', *Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering*, **210** (1996) 209 - 214.
 79. R Biswas, J L Henshall and R J Wakeman, 'Deformation and fracture in a model brittle particulate composite system: quartz-perspex', *Mater. Sci. Eng. A*, **A211**, (1996) 138-142.
 80. J L Henshall, M-O Guillou and R M Hooper, 'The Assessment of Surface Fatigue Effects in Toughened Zirconia Using a New Point Contact Method', *Fatigue Fract. Engng. Mater. Struct.*, **19** (1996) 903 - 910.
 81. M-O Guillou, J L Henshall and R M Hooper, 'The measurement of surface contact fatigue and its application to engineering ceramics', *Mater. Sci. Eng. A*, **209** (1996) 329 - 336.



82. **R J Wakeman, J L Henshall and S G Ng, 'Formula for membranes', Chemical Processing Technology International, 9 (1996) 75 - 82.**
83. **M-O Guillou, C Maerky, J L Henshall and R M Hooper, 'Surface Fatigue Measurements on Si and SiC', Proceedings of the 47th Diamond Conference, ed. J E Field, Cambridge, July 1996, P15.1-P15.3.**
84. **C Maerky, J L Henshall, R M Hooper and M-O Guillou, 'Stress Analysis of Cyclic Contact Fatigue in Single Crystals of Brittle Materials with Cubic Symmetry', Proceedings of the 47th Diamond Conference, ed. J E Field, Cambridge, July 1996, 27.1-27.4.**
85. **C Maerky, M-O Guillou, J L Henshall and R M Hooper, 'Indentation hardness and fracture-toughness in single crystal TiC_{0.96}', Mater. Sci. Eng. A, 209 (1996) 329 - 336.**
86. **M-O Guillou, C Maerky, J L Henshall and R M Hooper, 'Surface Fatigue: A Comparison Between ZrO₂ and CaF₂', in Proceedings of the 11th European Conference on Fracture Vol.2, ed. J. Petit, J. de Fouquet, G. Henaff, P. Villechaise, and A. Dragon, EMAS, (1996) 1051-1056.**
87. **C Maerky, J L Henshall, R M Hooper and M-O Guillou, 'Cyclic Contact Fatigue of CaF₂: Stress Analysis and Experimental Results', Journal of the European Ceramic Society, 17 (1997) 61-70.**
88. **R Biswas, J L Henshall and R J Wakeman, 'Fracture in a model brittle composite material: quartz-perspex', in Advances in Fracture Research, Proceedings of the Ninth International Conference on Fracture, Vol. 2: Failure of Multiphase and Non-Metallic Materials, eds. B L Karihaloo, Y-W Mai, M I Ripley and R O Ritchie, (1997) pp 841-848.**
89. **C Maerky, J L Henshall, R M Hooper and M-O Guillou, 'Point contact surface fatigue in single crystal and polycrystalline magnesium oxide', in Advances in Fracture Research, Proceedings of the Ninth International Conference on Fracture, Vol. 3: Fatigue of Metallic and Non-Metallic Materials and Structures, eds. B L Karihaloo, Y-W Mai, M I Ripley and R O Ritchie, (1997) pp 1661-1668.**
90. **R. Biswas, J L Henshall and R J Wakeman, 'Finite Element Modelling of Elastic Stress Distributions in Composite Materials', Mechanics of Composite Materials and Structures, 4 (1997) 233-249.**
91. **J L Henshall, J Knezevic and M G Gee, 'The Application of a Reliability Analysis Approach to the Assessment and Prediction of Wear', First World Tribology Congress, London, 8-12 September 1997, Abstracts of Papers, Mechanical Engineering Publications, p 703**
92. **E Bermingham, J L Henshall and R M Hooper, 'The Influence of Cutting Fluid Composition on the Wear of High Speed Steel Tools in Intermittent Cutting', First World Tribology Congress, London, 8-12 September 1997, Abstracts of Papers, Mechanical Engineering Publications, p 599**
93. **M-O Guillou, J L Henshall and R M Hooper, 'Indentation fracture and soft impressor fatigue in sapphire and polycrystalline alumina', Proceedings of the Sixth International Conference on the Science of Hard Materials, Lanzarote, Spain, March 1998**



94. **R M Hooper, J L Henshall and A Klopfer, 'The Wear of Polycrystalline Diamond Tools used in the Cutting of Metal Matrix Composites', Proceedings of the Sixth International Conference on the Science of Hard Materials, Lanzarote, Spain, March 1998**
95. **J L Henshall, 'Fatalities arising from Commercial Vehicle Wheel Losses: Design or Accident?', in Mechanics in Design, Proceedings of the International Conference, Nottingham, UK, 6-9 July 1998, eds. C R Gentle and J B Hull, pp 525-534.**
96. **J L Henshall and R Biswas, 'Designing Particulate Reinforced Composite Materials' in Mechanics in Design, Proceedings of the International Conference, Nottingham, UK, 6-9 July 1998, eds. C R Gentle and J B Hull, pp 346-355.**
97. **C Maerky, R M Hooper, M-O Guillou and J L Henshall, 'Soft Impressor Fatigue of Silicon at Room Temperature and 500°C', Proceedings of the 49th Diamond Conference, ed. J. E. Field, Royal Holloway, July 1998.**
98. **J L Henshall, M-O Guillou and R M Hooper, 'Point Contact Fatigue in Polycrystalline Alumina', Proceedings 12th European Conference on Fracture, Sheffield, Sept. 1998, eds. M W Brown, E R de los Rios and K J Miller, EMAS, pp 479-484.**
99. **M-O Guillou, J L Henshall and R M Hooper, 'Indentation Fracture and Soft Impressor Fatigue in Sapphire and Polycrystalline Alumina', International Journal of Refractory Metals & Hard Materials, 16 (1998) 323-329.**
100. **R M Hooper, J L Henshall, and A Klopfer, 'The wear of polycrystalline diamond tools used in the cutting of metal matrix composites', International Journal Of Refractory Metals & Hard Materials, 17 (1999) 103-109.**
101. **W G Jiang and J L Henshall, 'The analysis of termination effects in wire strand using the finite element method', Journal of Strain Analysis, 34 (1999) 31-38.**
102. **M-O Guillou, J L Henshall, R M Hooper and C Maerky, 'Point Contact Surface Fatigue in Hot-Pressed and Refel Silicon Carbides', in Engineering Against Fatigue, eds. J H Beynon, M W Brown, T C Lindley, R A Smith and B Tomkins, A.A.Balkema, Rotterdam, 1999, Chapter 67, pp 617-624.**
103. **W G Jiang and J L Henshall, 'The Development and Applications of the Helically Symmetric Boundary Conditions in Finite Element Analysis', Communications in Numerical Methods in Engineering 15 (1999) 435-446.**
104. **J L Henshall, W G Jiang, L C Wrobel, L A Lacerda and R M Hooper, 'Calculation of Stress Distributions in Diamond Coatings under Contact Conditions', Proceedings of the 50th Diamond Conference, Oxford, July 1999, ed. J. E. Field, 15.1-15.7.**
105. **R M Hooper, J L Henshall and E Rogers, 'Some observations on degradation processes in roller and polymer based bridge bearings', Applied Mechanics and Engineering, 4 (1999) 219-224.**
106. **Lacerda, L.A., Wrobel, L.C., Jiang, W.G. and Henshall, J.L., 'Boundary Element Simulation of the Soft Impressor Technique', Second UK Conference on Boundary Integral Methods, Brunel University, Uxbridge, 1999**



107. **J L Henshall, 'The Soft Impressor Technique: Analysis and Results', Proceedings of the International Conference on Applied Mechanics, SACAM 2000, Jan. 2000, eds. S. Adali, E V Morozov and V E Verijenko, 36-41.**
108. **W G Jiang, J L Henshall and J M Walton, 'A Concise Finite Element Model for 3-layered straight wire rope strand', Int. J. Mech. Sci., 42 (2000) 63-86**
109. **W G Jiang and J L Henshall, 'Novel finite element model for helical springs', Finite Elements in Analysis and Design, 35 (2000) 363-377**
110. **W G Jiang and J L Henshall, 'Torsion-extension coupling in initially twisted beams by finite elements', European Journal of Mechanics A Solids, 20 (2001) 501-508.**
111. **X J Ren, R M Hooper, C Griffiths and J L Henshall, 'The effect of indenter heating on indentation creep testing of MgO', J. Mater. Sci. Lett., 20 (2001) 1819-1821.**
112. **E V Morozov, J L Henshall and C J Brown, 'Design Optimisation of Silo Structures made from Composite Materials', presented at the 13th International Conference on Composite Mechanics, Beijing, China July 2001.**
113. **C Griffiths, J L Henshall. X J Ren and R M Hooper, 'FE modelling of micro-indentation testing', Proceedings 9th Annual Conference of the Association for Computational Mechanics in Engineering, April 2001, Birmingham, ed H C Chan, pp 17-20.**
114. **M G Knight, L A de Lacerda, L C Wrobel and J L Henshall, 'Parametric Study of the Contact Stresses around Spherical and Cylindrical Inclusions', Computational Materials Science, 25 (2002) 47-58.**
115. **M G Knight, L A de Lacerda, J L Henshall and L C Wrobel, 'A Parametric Study of Inclusion Interaction in Particulate and Fibre Reinforced materials using the BE Technique', Journal of Strain Analysis, 37 (2002) 47-58.**
116. **E V Morozov, J L Henshall and C J Brown, 'Design optimisation of silo structures made from composite materials. Part 1. Design of the vertical cylindrical section', Proceedings of the Institution of Mechanical Engineers Part L: Journal of Materials: Design and Applications, 216 (2002) 55-67.**
117. **E V Morozov, J L Henshall and C J Brown, 'Design optimisation of silo structures made from composite materials. Part 2. Optimum design of composite conical hopper', Proceedings of the Institution of Mechanical Engineers Part L: Journal of Materials: Design and Applications, 216 (2002) 69-77.**
118. **W G Jiang and J L Henshall, 'A finite element model for the nonlinear torsion-extension coupling analysis of intially twisted beams', European Journal of Mechanics A Solids, 21 (2002) 513-522.**
119. **M G Knight, L C Wrobel, J L Henshall and L A de Lacerda, 'A study of the interaction between a propagating crack and an uncoated/coated elastic inclusion using the BE technique', International Journal of Fracture, 114 (2002) 47-61.**



120. **X J Ren, R M Hooper, C Griffiths and J L Henshall, 'Indentation-size effects in single-crystal MgO', *Philos. Mag. A*, **82** (2002) 2113-2120.**
121. **E Morozov, J L Henshall and C J Brown, 'Structural Analysis and Design of Cylindrical Silos Made from Composite Materials Using Finite Element Modelling', *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, July 7-12, 2002, Vienna, Austria, Editors: Mang, H.A.; Rammerstorfer, F.G.; Eberhardsteiner, J., Publisher: Vienna University of Technology, Austria, ISBN 3-9501554-0-6, <http://wccm.tuwien.ac.at>**
122. **J L Henshall, J Hu, and C Griffiths, 'Finite Element Modelling of Diamond Pyramid Indentations', *Proceedings of the International Conference on Applied Mechanics and Materials (ICAMM 2003)*, January 21-23, 2003, Durban, South Africa, Editors S Adali, E V Morozov and V E Verijenko, 1-6.**
123. **J L Henshall, M G Knight and L C Wrobel, 'Micromechanics of Regular and Random Fibre Reinforced Materials using the Boundary Element Technique', Keynote Paper: *Proceedings of the Fourth International Conference on Composite Science and Technology (ICST/4)*, January 21-23, 2003, Durban, South Africa, Editors S Adali, E V Morozov and V E Verijenko, 185-192.**
124. **X J Ren, R M Hooper, C Griffiths and J L Henshall, 'Indentation-size effects in ceramics: Correlation with H/E', *J. Mater. Sci. Lett.*, **22** (2003) 1105-1106.**
125. **M G Knight, L C Wrobel and J L Henshall, 'Fracture response of fibre-reinforced materials with macro/microcrack damage using the Boundary Element Technique' *International Journal of Fracture*, **121** (2003) 163-182.**
126. **M G Knight, L C Wrobel and J L Henshall, 'Micromechanical response of fibre-reinforced materials using the Boundary Element Technique', *Composite Structures*, **62** (2003) 341-352.**
127. **S Ji, D Su, J L Henshall and J B Hull, 'Gear design optimisation using a genetic simulated annealing algorithm', *Poster Proceedings of the Sixth International Conference on Adaptive Computing in Design and Manufacture 2004*, Editotrs C Parmee and J A Abraham, (2004) 5-9.**