University of Auckland
Standard
ACADEMIC CV

NAME: Dr WILLIAM GEORGE FERGUSON
CURRENT POSITION: Professor, HOD Chemical & Materials Engineering Department
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FACULTY: School of Engineering, University of Auckland,
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EDUCATIONAL QUALIFICATIONS:

1961 University of New Zealand, **BSc** (Physics)
1962 University of New Zealand, **BE**(Hons)(Mechanical)
1965 University of Auckland, **PhD**(Engineering)

PREVIOUS APPOINTMENTS:

62 - 64: **University of Auckland** - Teaching Assistant, Dept. of Mechanical Engineering. PhD Research.
64 - 66: **University of California, Berkeley** - Post Doctoral Metallurgist, Lawrence Radiation Lab. Research.
66 - 68: **Oxford University** - Research Fellow, Engineering Science Dept. Research and Tutoring.
68 - 07: **University of Auckland** - Lecturer, Senior Lecturer, Associate Professor & Professor. Teaching and Research.
1975: **Cambridge University** - Senior Lecturer, Metallurgy & Materials Dept. Research & Study Leave.
1983: **University of Sheffield** - Visiting Professor, Dept. of Metallurgy & **British Steel Corporation**, Research Labs., Swinden House, Rotherham. Research & Study Leave.
86,89,90,94,96,00,01,02,06,07 : **University of Tokushima, Japan** - Visiting Professor, Mechanical Eng. Dept. Collaborative Research Projects funded by Monbusho (visits 2 to 4 weeks duration).
1997: **University of Birmingham** - Visiting Professor, School of Metallurgy and Materials, Faculty of Engineering. Research & Study Leave(3months).

SIGNIFICANT DISTINCTIONS / AWARDS:

1966 **Sigma Xi**, Berkeley
1993 **Education Service Medal.** For services to secondary education

PROFESSIONAL SOCIETIES / SERVICE / OTHER ACTIVITIES:

FIMMM Fellow Institute of Materials, Minerals & Mining (IOM^3), London, 1985 -
CEng Chartered Engineer, London 1986 -
CSci Chartered Scientist, London 2005 -
FIE*Aust* Fellow of Institution of Engineers, Australia 1991 –
CPEng Chartered Engineer, Australia 1991 -
FIPENZ Fellow Institution of Professional Engineers New Zealand 1973 -
SCENZ (Technical Group of IPENZ) 1974 -
SMNZI(Technical Group of IPENZ) 1991 -
Committee member and past Chairman of EMG
TMS The Minerals, Metals & Materials Society 1998-
The International Congress on Fracture(ICF), Council member 1997 -
Australian Fracture Group Inc, Committee member 1997 –
TMS Light Metals Division, **Magnesium Committee,** member 2000 –
Editorial Advisory Board: **Materials Forum**
Referee:

- **IPENZ Transactions**
- **Fatigue and Fracture of Engineering Materials and Structures**
- **Journal of Materials Science**
- **Foundation for Research Science and Technology**

- **Australian Research Council, Research Grants Committee**
- **South Pacific Journal of Natural Science**

SERVICE to UNIVERSITY, PROFESSION & COMMUNITY:

University:
Significant committee and management contribution to Department, School of Engineering and University.

Profession:
Auckland University Engineers Association Inc., **AUEA** 1968 – 1982, 1991 – 2000.
Auckland Harbour Bridge Fatigue Cracking Consultancy: retained by Works Consultancy Services to overview work on fatigue crack monitoring and life predication 1987 -1992.
Institute of Materials, Panel for Accreditation of an Engineering Materials Degree at Nanyang Technological University, Singapore and Diplomas in Materials and Polymer Technology, at Singapore Polytechnic 1995.
Numerous Activities: Conference Organization, Degree Accreditations, Specialist Consulting etc

Community:
Chairman Glenavon Primary School Committee, 1971-1974 and 1978-1982
Member Avondale College Board of Trustees 1978 – 2004
Chairman Avondale College Board of Trustees 1984 – 1999
New two story Technical Block, named FERGUSON BUILDING
for service to College, opened by Prime Minister in June06

TEACHING: [Undergraduate Programmes; Postgraduates number, dates, etc; achievements; developments; summary of evaluations; etc]

University Courses:
Main teaching experience gained in undergraduate(at all levels of the degree) and graduate materials courses, where because the Department had just been established when appointed, has been involved with extensive development of laboratories, equipment and curriculum. Has made a significant contribution to curriculum development in all subsequent course restructuring. Has also at the undergraduate level taught sundry other engineering courses, such as statistical thermodynamics, engineering thermodynamics, heat transfer, geothermal materials, tutoring in engineering mechanics and contributing to design courses at all levels of the undergraduate degree. Also teaching materials in a year I Physics paper.

Research Supervision:
Year IV, UG Research Projects: about **90** students.
ME Theses(completed & in progress): **27** students.
PhD Dissertations(completed & in progress): **9** students. Research Fellows: **6** fellows.

Professional Courses: Has taken an active part in professional engineering courses organised by the Centre for Continuing Education (CCE) as this aspect of teaching is considered to be an integral part of the responsibilities of a lecturer in Engineering. Has contributed to over 37, one day to one week long, professional development courses such as introductory metallurgy, fracture mechanics, welding, stainless steel, corrosion, failure analysis, fatigue and materials selection.
Evaluations: These for both teaching & course are above average to well above average for engineering.

RESEARCH SPECIALTIES:
Summary Statement:
Present research:
Research field is the mechanical performance of materials including the relationship of properties of materials to microstructure and processing, especially fracture toughness and fatigue behaviour, including environmental effects and high temperature behaviour. Materials studied include metals and alloys, Pinus radiata, plastics and metal matrix composites. A major research programme is the investigation of corrosion-fatigue in steels used in off-shore structures and magnesium alloys in seawater. Extensive work has been done on the fracture toughness of Pinus radiata and a fundamental theory developed to explain the dependence of the strength of wood on temperature, moisture content and strain rate. Present research also centres on the properties of steel and magnesium especially at high temperature, the modification of surfaces with ceramic thin films, ceramic fibre-metal matrix composites, damping capacity of lead -rubber bearings, application of fracture mechanics to wood and environmental performance of wood adhesives.

Major Achievements:

- Whilst at Berkeley investigated the mechanical behaviour of metals at very high rates of deformation. This work was the first to explain the rapid increase in strength observed at high rates of deformation and showed the behaviour to be related to dislocation- phonon interactions.
- Whilst at Oxford investigated the mechanical behaviour of mild steel, over a wide range of temperatures and rates of deformation including very high rates of deformation. This work, which has not been repeated elsewhere since, is used as the standard to explain dynamic fracture, the behaviour of metals during high speed machining and high-speed structural deformation.
- On returning to N.Z. in 1968, made a determined effort to get into the field of fracture mechanics for it was clear even then that these concepts were beginning to influence engineering thinking in respect of material behaviour. Thus set about obtaining equipment to measure toughness, establish a small group of research students and through these graduate students, lectures, C.C.E. courses and consulting, to raise the general awareness of fracture mechanics in N.Z. In this endeavour has in the main succeeded. Has done significant work relating fracture toughness to micro-structure, fracture appearance and specimen size.
- Developed a theory which explains the dependence of the strength of wood on temperature, moisture content and rate of loading. Theory now well established. Carried out the first fracture toughness tests on Pinus radiata in New Zealand to establish the fracture performance and obtain design data. Applying fracture mechanics to finger joint design in collaboration with Dr A. H. Bryant and Dr R. Hunt.
- Conducted a major investigation into the corrosion fatigue of structural steel in seawater and a significant finding related to the effect of H_2S on fatigue crack growth. Work continuing with high strength(700 MPa) structural steel in sea water. Corrosion fatigue of magnesium alloys in seawater is also being investigated.
- Have investigated the hot-forming properties of cast steel and magnesium alloys(with Dr Hodgson).
- Collaborative research project with Professor Murakami, University of Tokushima, Japan on fatigue performance of surface modified materials and metal-matrix composites.
- Recently commenced investigation into the fatigue performance of aluminium castings and life extension in aluminium alloy die-casting (thermal fatigue).
- Collaborative research programme with IRL & RSL investigating the performance of earthquake, base-isolating, lead-rubber bearings in-particular have determined cyclic damping capacity and recrystallisation behaviour of lead. Continuing a fundamental investigation of the cyclic plasticity of lead.
- Has established collaborative research programmes with the University of Tokushima, the CRI-IRL, DOTSE, CSIRO Brisbane, BHPNZSteel, MagTech, and Glucina Smelters. Has also established an exchange agreement with Tokushima University which enables each year, three staff from Tokushima to visit the School of Engineering for about ten days and for staff from Auckland to visit Tokushima with all expenses for both visits being met by Monbusho, the Japanese Ministry of Education.

Research Publications:

Books, Research and Technical Papers(refereed): **Number 143**. Significant publications are listed below. Technical Reports (of significance): **Number 17**. The technical research reports relate to work done at Berkeley, Cambridge, British Steel Corporation and for a Maui Development Environmental and Engineering Study. Consulting Reports(of significance): **Number 26**. The consulting reports relate to work commissioned usually by Consulting Engineers and executed through UniServices Ltd. This work has in the main, been commissioned because of my expertise in the field of fracture mechanics and fatigue.

Major Publications:

Books:

"Metals and Energy", Ed. W.G.Ferguson, Proceedings of the 33rd Annual Conference of the Australasian Institute of Metals, University of Auckland ISBN 0-86869-010-4 (1980)

"Second NZ Metals and Materials Symposium", Ed. M.Assefpour-Dezfuly, W.G.Ferguson and R.M.Sharp Proceedings of the Second NZ Metals and Materials Symposium Australasian Institute of Metals, University of Auckland 4-5 Sept (1985).

"Advanced Materials Development and Performance", Ed. W.G.Ferguson and W.Gao. Proceedings of an International Conference on Advanced Materials Development and Performance Evaluation and Application, ISBN 0 – 86869 – 0686, CCE, The University of Auckland, Auckland, New Zealand, 14-15 July (1997) 0 –512.

Gao, W., Hodgson, M.A., Ferguson, W.G., Suh, C.M., Murakami, R. Editors, "4th International Conference on Advanced Materials Development and Performance 2005", Special Issue of International Journal of Modern Physics B, Vol 20, Nos 25, 26 & 27, ISSN 0217-9792, World Scientific, New Jersey, London, Singapore, Oct. 2006, p3567- 4708

Research and Technical Papers:

1. "Dislocation Damping in Aluminium at High Strain Rates", W.G.Ferguson, A..Kumar and J.E.Dorn, J.Appl.Phys., 38 (1967) 1863.
2. "Dislocation Damping in Zinc Single Crystals", W.G.Ferguson, F.E.Hauser and J.E.Dorn, Brit.J.Appl.Phys., 18 (1967) 411.
3. "The Temperature and Strain-Rate Dependence of the Shear Strength of Mild Steel", J.D.Campbell and W.G.Ferguson, Phil.Mag., 21 (1970) 63.
4. "The Effect of Velocity on the Width of a Dissociated Dislocation", W.G.Ferguson, Scripta Metallurgical, 5 (1971) 441.
5. "Fracture Toughness of Comsteel En 25", W.G.Ferguson and M.N.Sargisson, Eng. Fract. Mechanics, 5 (1973) 362
6. "Effect of Austenitising Temperature on Toughness of Martensitic Steels", W.G.Ferguson, N.E.Clark and B.R.Watson, Metals Technology, 3 (1976) 208.
7. "The Fracture Toughness and HY-60", P.N.Thorby and W.G.Ferguson, Mat.Sci and Eng. 22 (1976) 177.
8. "The Application of the Rate Theory of Deformation to the Yield Behaviour of Wood", W.G.Ferguson and F.K.Yew J.Mat.Sci., 12 (1977) 264.
9. "Ductile Crack Initiation in Pressure Vessel Steels", G.Clark, S.M.El Soudani, W.G.Ferguson, R.F.Smith and J.F.Knott. Conf. on Tolerance of Flaws in Pressurised Components, Institution of Mechanical Engineers, London 16-18 May (1978) 105-115.
10. "The Inadequacy of the Plane-Strain Fracture Toughness Test Requirements", M.O.Lai and W.G.Ferguson, Engineering Fracture Mechanics,13 (1980) 285-292.
11. "Relationship between Shear Lip Size and Fracture Toughness" M.O.Lai and W.G.Ferguson Materials Science and Engineering, 45 (1980) 183-188.
12. "On the J-Integral Blunting Line for Soft Materials", D.M.O'Brien and W.G.Ferguson Int J.of Fracture 20 (1982) R39-R43.
13. "Modified Manjoine WOL Specimen for J_{Ic} and d_i Tests", D.M.O'Brien and W.G.Ferguson Eng. Fracture Mechanics,18 (1983) 453-465.
14. "Relationship between Fracture Topography and Fracture Toughness of a High Strength Steel", M.O.Lai and W.G.Ferguson J.of Materials Science,20 (1985) 1985-1992.
15. "Fracture Toughness of Aluminium Alloy 7075-T6 in the As-Cast Condition",M.O.Lai and W.G.Ferguson Materials Science and Engineering,74 (1985) 133-138.
16. "Effect of Specimen Thickness on Fracture Toughness", M.O.Lai and W.G.Ferguson Eng. Fracture Mechanics 23 (1986) 649-659.
17. "Environmentally Assisted Crack Growth in a Martensitic Stainless Steel", C.J.Thomas, R.G.J.Edyvean, R.Brook and W.G.Ferguson Material Science and Engineering,78 (1986) 55-63.
18. "The Effects of Cathodic Potential and Calcareous Deposits on Corrosion Fatigue Crack Growth Rate in Seawater for Two Offshore Structural Steels", R.Murakami and W.G.Ferguson Fatigue Fract. Engng Mater. Struct. 9 (1987) 477-488.
19. "Fatigue Crack Propagation and Crack Closure Behaviour in Polycarbonate and Fiber Reinforced Polycarbonate", R.Murakami, S.Noguchi, K.Akizono and W.G.Ferguson Fatigue Fract. Engng Mater. Struct. 10 (1987) 461-470.
20. "Effect of Low Concentrations of Hydrogen Sulphide in Seawater on Fatigue Crack Growth in a C-Mn Structural Steel", M.Assefpour-Dezfuly and W.G.Ferguson Corrosion - NACE 44 (1988) 443-449.
21. "The effects of an anaerobic environment on corrosion fatigue", W.G.Ferguson, Y.Zhang, F.J.Stevens and M.Assefpour-Dezfuly. Chemeca 90, The 18th Australasian Chemical Engineering Conf., Auckland, New Zealand ISBN 0-86869-091-0, August (1990) 286-295.
22. "The effects of microstructure and fracture surface roughness on near threshhold fatigue crack propagation characteristics of a two-phase cast stainless steel", R.Murakami, Y.H.Kim and W.G.Ferguson. Fatigue Fract. Engng Mater. Struct. 14 (1991) 741-748.
23. "Structure of thin film produced by ion beam mixing method", Fauzi, R.Murakami, W.G.Ferguson, T.Yano and M.Katsumura. Proceedings of the 35th Japan Congress on Materials Research, The Society of Mat.Sci., Kyoto, (1992) 99-104.
24. "The effects of a marine environment on the corrosion fatigue crack propagation rate of pure titanium and its weld metal, R.Murakami and W.G.Ferguson. Fatigue Fract.Engng Mater.Struct. 16 (1993) 255-265.
25. "The effects of residual stresses on the fatigue behaviour of rectangular hollow sections", D. Bhattacharyya, W.G.Ferguson and Li Pu. Mat. Forum -17 (1994) 395-401.
26. "Hardness characterisation of thin carbon coatings", K.L. Dahm, W.G. Ferguson, R. Murakami and P.A. Dearnley. Surface Engineering, (1994) Vol.10 No.3 pp 199-204.
27. "Lead as a cyclic motion damper", M.D. Monti, W.G. Ferguson and W.H. Robinson. Pacific Conference on Earthquake Engineering, University of Melbourne, Nov. (1995) V3, 323-329.

46. "The peculiarities of tungsten's influence on phase transformations and mechanical properties of the directionally solidified HCR nickel-base alloy", V.V. Ivanov and W.G. Ferguson, High Temperature Materials and Processes, 19 (2000) 101-110.
47. "Fatigue performance of high pressure die cast magnesium alloys", W. G. Ferguson, Wu Liu, Philip Ross and John MacCulloch, Structural Integrity and Fracture 2000, Ed. Greg Heness, The Australian Fracture Group Inc., ISBN 1-86365-571-9, University of Technology, Sydney, 29th-30th, June (2000) 99-108.
48. "Corrosion fatigue of high pressure die cast magnesium alloys", W. G. Ferguson, Wu Liu, Philip Ross and John MacCulloch, 2001 TMS Annual Meeting, Magnesium Technology 2001, Ed John N Hryn. TMS, ISBN 0-87339-481-X, New Orleans, Louisiana, 11th-15th February (2001) 269 - 274
49. "Cyclic fracture limit states in seismic resisting steelwork structures" C W K Hyland and W G Ferguson, Australasian Structural Engineering Conference (ASEC 2001), Gold Coast, Australia, 29th April - 2nd, May (2001) 191 – 198.
50. "Corrosion- fatigue performance of magnesium alloys", W. G. Ferguson, Wu Liu, and John MacCulloch, International Journal of Modern Physics B, Vol 17, Nos. 8 & 9 (2003) 1601-1607.
51. "Study of thermal fatigue of H13 die steel with various surface treatments", V V Ivanov, W G Ferguson and I R Paine, International Journal of Modern Physics B, Vol. 17, Nos. 8 & 9 (2003) 1671-1677.
52. "The effect of surface treatments on thermal fatigue of H13 Die Steel", V. V. Ivanov, W. G. Ferguson and A. F. Trubuhovich, High Temperature Materials and Processes, Vol. 22, No. 1, (2003) 47-55.
53. "Warm rolling of extra low carbon steels" L. C. Narbey, W. G. Ferguson and P. A. Bagshaw, Proceedings of 3rd International Conference on Advanced Materials Processing (ICAMP-3), Ed J F Nie & M Barnett, ISBN 1 876855 290, Melbourne, November, 2004, CD-ROM.
54. "The Effect of Pre-strain and Aging on the Fracture Toughness of Australasian Constructional Mild Steel", C.W.K. Hyland, W.G. Ferguson and J.W. Butterworth, *Proceedings of the International Conference on Structural Integrity and Fracture. (SIF2004), Australian Fracture Group* Inc. ISBN 1864997605, 163-170, Brisbane, 2004.
55. Hyland, C. W. K., Ferguson, W. G., and Butterworth, J. W., Recommendations for Improved Material Performance Criteria for Seismic Resisting Steel Structures in New Zealand, *Proceedings of 3rd International Symposium on Steel Structures, ISSS'05,* Seoul, 10-11th March, p328-p333 2005,
56. Woerner, W., Short, A., and Ferguson, W. G., Seismic Performance of Fillet Welds in Moment Resisting Connections, *International Institute of Welding, Working Group XV*, IIW Document XV-1192- 05, 2005
57. Hyland, C. W. K., Ferguson, W. G., and Butterworth, J., Structural Steel for Seismic Performance, *Journal of the Structural Engineering Society New Zealand, 18, (1)*, p48-56, 2005
58. Short, A., Woerner, W., and Ferguson, W. G., Failure of Moment Resisting Connections with volumetric Imperfections in the Fillet Weld, *Proceedings of the 3rd International Conference on Construction Materials: Performance, Innovations and Structural Implications and Mindess Symposium.* ISBN No. 0888658109, UBC, Vancouver, Canada, 22-24 August, 2005
59. Yakushiji, T., Ferguson, W.G. and Goto, M., Effect of Water on Ductility and Fatigue Strength of Austempered Ductile Cast Iron(ADI), International Journal of Modern Physics B, Vol. 20, Nos. 25, 26 & 27, October, 2006, 4571-4576
60. Wu, L. and Ferguson, W. G., Computer Modelling of Age Hardening for Isothermally Aged Al-Mg-Si Alloys', International Journal of Modern Physics B, Vol. 20, Nos. 25, 26 & 27, October, 2006, 4177-4182
61. Hyland, C. W. K. and Ferguson, W. G., A Fracture Mechanics Based Approach to the Assessment of Seismic Resisting Steel Structures, Key Engineering Materials. Vol 312, June 2006, 89 – 94
62. Woerner, W., Short, A. and Ferguson, W. G., IIW- XV 1192-05 Seismic Performance of Fillet Welds in Moment Resisting Connections, Welding in the World, ISSN 0043-2288,Vol 50, No5/6, 2006, 51-58
63. Short, A., Woerner, W., Ferguson, W. G., and Clifton, G. C., Failure of Welded Moment resisting Connections, AISC Engineering Journal, Fourth Quarter, 2006, 287 – 302
64. Wu, L and Ferguson, W. G., Computer Modelling of Age Hardening for Isothermally Aged Al-Mg-Si Alloys, CHEMECA 2006, Auckland, NZ, 17th-20th September, 2006
65. Chiu, Y. L. and Ferguson, W. G., Characterization of Indentation Size Effect of Hardness Using a Loading Curve from Single Crystal and Nanocrystalline Materials, 4th Int. Conf. of Advanced Materials & Processing (ICAMP- 4), University of Waikato, 10-13th December, 2006

Invited Lectures:

Invited Lectures given outside New Zealand in various Institutions total **26**.

28. "Effects of notch radii on fatigue strength and crack initiation of nitrogen ion implanted pure titanium", K. Futagami, R. Murakami, Y. Yoneda, A. Katsumura and W.G. Ferguson. Proc., of 7th Inter.Conf. on Mech. Behaviour of Materials (ICM7), Hague, The Netherlands, May 28 - June 2 (1995) 21-22.
29. "Effects of notch radius on fatigue life and early crack growth behaviour of pure titanium implanted with nitrogen ions", K. Futagami, R. Murakami, Y. Morikawa, A. Kawahito, W.G. Ferguson, M Yoneda and M. Katsumura. The JSME, 61-578A (1995) 1511.
30. "Fractographic study on fatigue crack initiation and early crack growth processes for pure titanium implanted with nitrogen ions, with variable notch radii", K. Futagami, R. Murakami, Y. Koichi, A. Kawahito, T. Kayahara, W.G. Ferguson, M. Yoneda and M. Katsumura. 4th International Conf on Localised Damage 96, Computational Mechanics Publications, Fukkuoka, Japan. 3-5 June, (1996), 299-306.
31. "Whisker reinforced copper – matrix composites produced by HIP treatment", R. Murakami, T Hosogi and W.G. Ferguson. Proceedings of the Ninth International Conference on Fracture, Ed B.L. Karihaloo et al, Pergamon, Sydney, Australia (1997) 1119 – 1127.
32. "The high strain cyclic shear of lead under imposed hydrostatic pressure", I.R. Shaw, W.G.Ferguson, W.H. Robinson and M.D.Monti. Proceedings IPENZ Annual Conference, ISBN 908960 – 20 – 4, V2 (1997) 291-297.
33. "High strain shear of lead", M.D. Monti, I.R. Shaw, W.G. Ferguson and W.H. Robinson. Proceedings of an International Conference on Advanced Materials Development and Performance Evaluation and Application, Ed. W. G. Ferguson and W. Gao. ISBN 0 – 86869 – 0686, CCE, The University of Auckland, Auckland, New Zealand, 14-15 July (1997) 333-339.
34. "Chip formation in the machining of SiC-particulate-reinforced aluminium-matrix composites" J.T. Lin, D. Bhattacharyya and W.G. Ferguson, Composites Science and Technology, **58 (**1998) 285-291.
35. "High strain shear of lead" M.D. Monti, I.R. Shaw, W.G. Ferguson and W.H. Robinson, Modeling the Mechanical Response of Structural Materials, Ed. Eric M. Taleff and Rao K. Mahidhara, 127th TMS Annual Meeting, San Antonio, ISBN 0-87339-392-9 (1998) 63-70.
36. "Finger joint geometry for optimum results" A.H. Bryant, R.D. Hunt, Li Hong Shi and W.G. Ferguson, Proceedings of 5th World Conference on Timber Engineering, Ed J. Natterer and J-L. Sandoz, Swiss Federal Institute of Technology, Lausanne, ISBN 2-88074-387-7, **V2,** August (1998) 198-205.
37. "Corrosion fatigue of two high strength offshore structural steels in seawater", A. Chan and W.G. Ferguson, Proceedings of the IPENZ Technical Conference, ISSN 0111-9532, University of Auckland, July (1999) 0-8.
38. "Fatigue of AM50 die cast magnesium alloy", W.G. Ferguson, Wu Liu and J. MacCulloch, Proceedings of the Second International Conference on Advanced Materials Development and Performance (AMDP'99), Ed. I. Nakabayashi and R. Murakami, ISBN 4-9980810-20, University of Tokushima, Japan, 23-26 November (1999) 49-52.
39. "Corrosion fatigue of high strength steels in seawater", A. Chan and W.G. Ferguson, Proceedings of the Second International Conference on Advanced Materials Development and Performance (AMDP'99), Ed. I. Nakabayashi and R. Murakami, ISBN 4-9980810-20, University of Tokushima, Japan, 23-26 November (1999) 113-118.
40. "Investigation of the recrystallization of lead", M.A. Hodgson and W.G. Ferguson, Proceedings of the Second International Conference on Advanced Materials Development and Performance (AMDP'99), Ed. I. Nakabayashi and R. Murakami, ISBN 4-9980810-20, University of Tokushima, Japan, 23-26 November (1999) 264-267.
41. "Early crack growth behaviour of nitrogen ion implanted materials", R. Murakami, T. Nozu, M. Kondou and W.G. Ferguson, Proceedings of the Second International Conference on Advanced Materials Development and Performance (AMDP'99), Ed. I. Nakabayashi and R. Murakami, ISBN 4-9980810-20, University of Tokushima, Japan, 23-26 November (1999) 732-737.
42. "Fatigue strength and fractography of stainless steel coated with TiN thin film", R. Murakami, M. Oyama, M. Kondou, D. Yonekura and W.G. Ferguson, Proceedings of the Second International Conference on Advanced Materials Development and Performance (AMDP'99), Ed. I. Nakabayashi and R. Murakami, ISBN 4-9980810-20, University of Tokushima, Japan, 23-26 November (1999) 750-753.
43. "Corrosion fatigue of two high strength offshore structural steels in seawater", A. Chan and W.G. Ferguson, Proceedings of the Eight International Conference on the Mechanical Behaviour of Materials(ICM8), Ed:F. Ellyin & J.W. Provan, Victoria, BC, Canada, ISBN 1-55058-163-5,V1, May (1999) 387-392.
44. "Effect of nitrogen ion implantation on fatigue crack initiation and early crack growth behaviour of high tensile strength steel", R. Murakami, T. Nozu, M. Kondou and W.G.Ferguson, Trans. of the Japan Society of Mechanical Engineers, 65-640 A, (1999) 2511-2517.
45. "Corrosion fatigue of high strength offshore structural steels", A. Chan and W. G. Ferguson, Structural Integrity and Fracture 2000, Ed. Greg Heness, The Australian Fracture Group Inc., ISBN 1-86365-571-9, University of Technology, Sydney, 29th-30th June (2000) 12-20.