

Brian Mellor

Qualifications / Affiliations

Chartered Engineer CEng, Engineering Council, 1978
Professional Membership of Institution of Metallurgists (now Institute of Materials, Minerals and Mining), MIMMM
Ph.D, University of Cambridge, 1978
M.A., University of Cambridge, 1973
B.A. Honours, Natural Sciences, University of Cambridge, 1969

Year of Birth

1948

Nationality

British

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Current Position at CWA

Consultant – Metals and Minerals Department

Specific Expertise and Experience

Brian Mellor is a Metallurgist who studied at the University of Cambridge where he obtained both his Master's degree and PhD. He has been a Professional Member of the Institute of Materials, Minerals and Mining since 1973 and a Chartered Engineer since 1978. He has worked in academia and University Consultancy activities for most of his professional life, primarily at the University of Southampton where he taught undergraduate modules on Manufacturing and Materials. His main areas of research in recent years have been in the fields of the service performance of materials, in particular fatigue alleviation by shot peening, fatigue life assessment of welded joints and shape memory alloys. He has published over 150 papers in refereed academic journals, edited works and conference proceedings and was editor of the book entitled "Surface Coatings for Protection against Wear" published by Woodhead Publishing Limited in June 2006.

Summary of Previous Employment

October 2015 – March 2019 (retirement)	University of Southampton School of Engineering Sciences Associate Professor
	University of Southampton Research Institute for Industry Principal Consulting Engineer
October 2000 to September 2015	University of Southampton Senior Lecturer, Engineering Materials
January 1992 to September 2000	University of Southampton Lecturer, Engineering Materials
October 1988 to December 1991	University of Southampton Principal Experimental Officer, Engineering Materials
January 1984 to September 1988	University of Southampton Senior Experimental Officer, Engineering Materials
November 1981- December 1983	University of Southampton Post-doctoral Research Fellow, Engineering Materials
January 1976 - August 1981	University Complutense, Madrid, Spain Post-doctoral Research Fellow in the Department of Metallurgy
January 1974 – December 1975	University Complutense, Madrid, Spain Royal Society European Science Exchange Scheme Fellow in the Department of Metallurgy
October 1972 – December 1973	Fulmer Research Institute, Stoke Poges Metallurgical Research Investigator

Teaching Activities

Brian taught until his retirement from Southampton University most of the Part 3 undergraduate module on “Manufacturing and Materials”. He also taught parts of the Part 4 modules on “Failure of Materials and Components”, “Surface Engineering” and the section on high strength steels in “Materials in Transport”. He has given short courses on Failure Analysis at the University of Southampton, Solent University and the University of Barcelona.

Research Activities

Brian's main areas of research in recent years have been in the fields of the service performance of materials, in particular the low cycle fatigue behaviour of shot peened ferritic steels used in power plant turbine blades, the micromechanics of fatigue crack initiation at welds studied by a data rich approach including CT scanning, white etching cracks in bearing steels produced by rolling contact fatigue and high pressure torsion and shape memory alloys.

Consultancy Activities

Brian was appointed Technical Manager of the Engineering Materials Consultancy Service, University of Southampton in 1985. From 1984 to date he has undertaken over 1,000 consultancies for the Engineering Materials Consultancy Service that now forms part of the Research Institute for Industry, University of Southampton. These included several major investigations on ship and small craft casualties, e.g. Serena, Kirki, Silimna, Ethnic, Union Power, Solent Express, Rambler 100, Cheeki Rafiki.

Publications Books – Edited

Mellor B.G., "Surface Coatings for Protection against Wear", Woodhead Publishing Company, July 2006, ISBN -13:978-1-85573-769-9, ISBN-10: 1-85573-767-1.

Conference Contributions - Refereed

Mellor B.G. and Chadwick G.A., "The Unidirectional Growth of Copper-Indium Eutectoid Alloy", Modern Metallography Conference, Cambridge, 1972.

Mellor B.G. and Edmonds D.V., "The Unidirectional Transformation of Eutectoid Alloys", read at the Practical Metallic Composites Conference, Palma, Majorca, 22-25 March 1974, and subsequently published by the Institution of Metallurgists, in Practical Metallic Composites, Series 3 Number 1, 1974, D25-D33.

Mellor B.G. and Calvo F.A., "Transformaciones Unidireccionales de Aleaciones de Composición Eutectoide", (Unidirectional Transformations of Eutectoid Alloys), IV Assembly of the Centro Nacional de Investigaciones Metalúrgicas (CENIM), (National Centre for Metallurgical Research), Madrid 1977.

Mellor B.G. and Calvo F.A., "Soldadura de Piezas de Cobre por Amalgamación Superficial" (The Welding of Copper by Surface Amalgamation), IV Assembly of the CENIM, Madrid, 1977.

Calvo F.A., Mellor B.G. and Criado A., "Estudio Semi-Cuantitativo de las Transformaciones Originadas en la Zona Afectada por el Calor en un Ensayo de Soldadura por Arco Sobre Acero de 0.6C" (A Semi-Quantitative Study of the Transformations taking place in the Heat Affected Zone in an Arc Welding Test on an Fe-0.6C Steel), V General Assembly of the CENIM, Madrid 1981, published in Revista de Soldadura, XI(3), 1981, 105-111.

Mellor B.G. and López de Castillo C., "Estudio de la Transformación Martensítica en Aleaciones con Memoria de Forma" (A Study of the Martensitic Transformation in Alloys Exhibiting Shape Memory), V General Assembly of the CENIM, Madrid, 1981.

Mellor B.G. and López del Castillo, C., "Propiedades Mecánicas de Aleaciones con Transformación Martensítica Termoelástica" (Mechanical Properties of Alloys with a Thermoelastic Martensitic Transformation), V General Assembly of the CENIM, Madrid, 1981.

Mellor B.G., Hernaez J. and López del Castillo C., "Transformación Martensítica Termoelástica en Aleaciones Cu-Al-Mn: Efecto del Primer Ciclo" (Thermoelastic Martensitic Transformation in Cu-Al-Mn Alloys: Effect of the First Cycle), VI General Assembly of the CENIM, Madrid, 1985.

Mellor B.G., López de Castillo C. and Hernaez J., "Transformación Martensítica Termoelástica en Aleaciones Cu-Zn-Mn: Efecto del Ciclado Térmico y la Temperatura Máxima del Ciclado" (Thermoelastic Martensitic Transformation in Cu-Al-Mn Alloys: Effect of the Thermal Cycle and Maximum Cycling Temperature), VI General Assembly of the CENIM, Madrid, 1985.

Mellor B.G., López del Castillo C. and Hernaez J., "Transformación Martensítica Termoelástica en Aleaciones Cu-Al-Mn: Influencia de la Velocidad de Enfriamiento y Calentamiento" (Thermoelastic Martensitic Transformation in Cu-Al-Mn Alloys: Influence of the Cooling and Heating Rates), VI General Assembly of the CENIM, Madrid, 1985.

Hernaez J., López del Castillo C. and Mellor B.G., "Memoria de Forma en Aleaciones Cu-Al-Mn: Comportamiento en Ensayos de Compresión" (Shape Memory in Cu-Al-Mn Alloys: Behaviour in Compression Tests), Shape Memory Alloy Seminar, Palma, Majorca, Spain, September 1985.

Mellor B.G., "Present and Future Applications of Shape Memory Alloys", Shape Memory Alloy Seminar, Palma, Majorca, Spain, September 1985.

Guilemany J.M., Mellor B.G., Miguel J.R. and López del Castillo C., "Observación in Situ en SEM de la Transformación Martensítica en Materiales con Memoria de Forma Cu-Al-Mn" (In Situ Observations in the Scanning Electron Microscope of the Martensitic Transformation of Cu-Al-Mn Shape Memory Alloys), XIV Spanish Royal Society Electron Microscopy Conference, Avila, Spain, 1986, published in proceedings of the above conference, Inorganic Volume, 134-136.

Guilemany J.M., Mellor B.G., Miguel J.R. and Gil F.J., "Etude de L'evolution en Temperature de la Transformacion Martensitique par Microscopie Electronique a Balayage (SEM)", (Study of the Evolution of Martensitic Transformation Temperatures by Scanning Electron Microscopy), Journees Metallurgiques d'Automne de la Societe Française de Metallurgie, 20-22 October 1987, Paris, France.

Mellor B.G. and Chadwick G.A., "Grain Boundary Deformation and Fracture in Ni-Base Superalloys: Strain Compatibility Analysis" in High Temperature Materials for Power Engineering, Proceedings of a Conference, held in Liege, Belgium, 24-27 September 1990, Kluwer Academic Publishers, Part II, 1037-1050.

Mellor B.G., Guilemany J.M. and Fernández J., "Two Way Memory Effect Obtained by Stabilised Stress Induced Martensite in Cu-Zn-Al-Co and Cu-Al-Mn Alloys", European Symposium on

Martensitic Transformation and Shape Memory Properties, 16-18 September 1991, Aussois, France, Published in Journal de Physique IV, Supplement au Journal de Physique III, 1(II), 1991, Colloque C4, C4-457-462.

Guilemany J.M., Sanchiz I., Mellor B.G. and Llorca N., "Estudio de la Tenacidad de Aleaciones de Metal Duro" (A Study of the Toughness of Hardmetals), Memorias del Noveno Encuentro del Grupo Español de Fractura y Primer Encuentro Español-Francés, Barcelona 1992, published in Anales de Mecánica de Fractura, 9, 1992, 98-103, ISSN 02/3-3725.

Guilemany J.M., Sanchiz I., Mellor B. G. and Llorca N., "Resistencia a la Flexión de Aleaciones de Metal Duro Con Distintas Composiciones de Fase Metálica" (Transverse Rupture Properties of Hard Metals with Different Binder Phase Compositions), Memorias de la Tercera Reunión de Propiedades Mecánicas de Sólidos, Huelva, February 1992, published in Deformación Metálica, XVIII(192), Junio 1992, 23-27, ISSN 0210/685.

Mellor B.G. and Apps R.L. "An Approach to Failure Investigation and Repair", Proceedings of the International Conference on the Joining of Materials, JOM-6, Helsingør, Denmark, April 5-7 1993, 531-36.

Graham-Jones P.J. and Mellor B.G., "Failure Analysis Diagnostic Expert System as an Interactive Computer Learning Tool", The First National Conference on Product Design Education, Bournemouth 11-12th July 1994.

Thomas A, Graham-Jones P.J., Mellor B.G. and Tabeshfar K., "An Expert System to Predict Failure Modes and Analyse Product Reliability", Product Development in Engineering Education, 28-31 October 1994, University of Limerick, Ireland.

Graham-Jones P.J. and Mellor B.G., "Failure Analysis Diagnostic Expert System as an Interactive Personal Design Consultant", Proceedings of the First Postgraduate Conference in Engineering Materials, University of Southampton, Southampton, 26-27 September 1994, ISBN 085432514X.

Graham-Jones P.J. and Mellor B.G., "The Development of a Generic Failure Analysis Expert System Based on Case-Based Reasoning", Corrosion/96 Symposium 96-T-3U, Denver, Colorado, USA, 24-29 March 1996.

Graham-Jones P.J. and Mellor B.G., "A Framework for Computer Systems in Failure Analysis", Proceedings of the Second Postgraduate Conference in Engineering Materials, University of Southampton, Southampton, 16-17 September 1996.

López Cantera E. and Mellor B.G., "Fracture Toughness and Crack Propagation in WC-Co coatings", Second Postgraduate Conference in Engineering Materials, University of Southampton, Southampton, 16-17 September 1996.

Graham-Jones P.J. and Mellor B.G., "The Opportunities for the Internet to Assist with Failure Analysis", Computers in Corrosion Control: Modelling and Information Processing (T-3U) Symposium, Corrosion 97, New Orleans, Louisiana, USA, 9-14 March 1997, 332/1 - 332/10.

Graham-Jones P.J. and Mellor B.G., "Issues Involved in Developing a Failure Analysis Expert System for Metallic Materials Using Rule and Case Based Reasoning", Computers in Corrosion Control: Modelling and Information Processing (T-3U) Symposium, Corrosion 97, New Orleans, Louisiana, USA, 9-14 March 1997, 320/1 - 320/8.

Symonds N. and Mellor B.G., "Polymeric Coatings to Suit Applications", Third Postgraduate Conference in Engineering Materials, University of Southampton, Southampton, 26 September 1997.

Wheeler D.W., Wood R.J.K. and Mellor B.G., "The Erosion Behaviour of CVD Diamond and Boron Carbide Coatings", First World Tribology Conference, London, September 1997, p 216.

Rainey R.C.T., Mellor B.G. and Hunt G.W., "Failure of Bulk Carrier Bulkheads after Flooding", Royal Institute of Naval Architects conference on "Design and Operation of Bulk Carriers", London, UK, 30 April - 1 May 1998.

Symonds N. and Mellor B.G., "Wireline Wear of Polymeric Coatings for Downhole Use", International Conference on Erosive and Abrasive Wear, Cambridge, UK, 13 - 17 September 1998.

Wood R.J.K., Wheeler D.W., Lejeau D.C. and Mellor B.G., "Sand Erosion Performance of CVD Boron Carbide Coated Tungsten Carbide", International Conference on Erosive and Abrasive Wear, Cambridge, UK, 14 - 17 September 1998.

Symonds N. and Mellor B.G., "Polymeric Coatings for Impact and Wear Resistance", Fourth Postgraduate Conference in Engineering Materials, University of Southampton, Southampton, 2 October 1998.

Symonds N. and Mellor B.G., "Polymeric Coatings for Impact and Wear Resistance", presented at 12th International Conference on Wear of Materials, Atlanta, USA, 25-29 April 1999.

Symonds N. and Mellor B.G., "Polymeric Coatings for Impact and Wear Resistance II: Impact", presented at Second ESIS TC4 conference on Polymers and Composites, Fracture of Polymers, Composites and Adhesives, 13 - 15 September, 1999, Les Diablerets, Switzerland.

Symonds N. and Mellor B.G., "Polymeric Impact Studies: A Review", Fifth Postgraduate Conference in Engineering Materials, University of Southampton, Southampton, 1 October 1999.

Symonds N., Mellor B.G., Wood R.J.K. and Grooves S., "Wireline Wear Resistance of Polymeric Corrosion Barrier Coating for Downhole Applications", NACE Corrosion 2000, Orlando, Florida, USA, 26-31 March 2000, paper 00170/1-12.

Wharton J.A., Mellor B.G., Wood R.J.K. and Smith C.J.E., "Crevice Corrosion Studies Using Electrochemical Potential Noise Measurements", NACE Corrosion 2000, Orlando, Florida, USA, 26- 31 March 2000, 8pp.

Wharton J.A., Wood R.J.K. and Mellor B.G., "Corrosion Monitoring of Austenitic and Superduplex Stainless Steels in a Chloride Media using Electrochemical Noise", 41st Corrosion Science Symposium, Institute of Corrosion, Queen Mary and Westfield College, 11-13 September 2000.

Wu A. and Mellor B.G., "Finite Element Analysis of a Welded Cruciform Joint", Proceedings of the Sixth Postgraduate Conference in Engineering Materials, Southampton, 6 October 2000, 17-18.

Habbab H., Mellor B.G. and Syngellakis S., "Using the Instrumented Microhardness Technique to Determine the Mechanical Properties of Welds", Proceedings of the Sixth Postgraduate Conference in Engineering Materials, Southampton, 6 October 2000.

Xu Y.M and Mellor B.G., "The Effect of Fillers on the Wear Resistance of Thermoplastic Polymer Coatings", Proceedings of the Sixth Postgraduate Conference in Engineering Materials, Southampton, 6 October 2000.

Grooves S., Symonds N, Wood R.J.K. and Mellor B.G., "Impact Testing of Downhole Internal Coatings", presented at NACE Corrosion 2001, Houston, Texas, USA, 11-16 March 2001, paper 01107.

Xu Y.M and Mellor B.G., “The Effect of Fillers on the Wear Resistance of Thermoplastic Polymeric Coatings”, presented at 13th International Conference on Wear of Materials, Vancouver, Canada, 22-26 April 2001.

Wu A., Syngellakis S. and Mellor B.G., “Finite Element Analysis of Residual Stresses in a Butt Weld”, Proceedings of the Seventh Postgraduate Conference in Engineering Materials, Southampton, October 2001, 37-8.

Xu Y.M. and Mellor B.G., “A Comparative Study of the Wear Resistance of Thermoplastic and Thermoset coatings”, presented at 14th International Conference on Wear of Materials, Washington, DC, USA, 31 April - 3 May 2003.

Wu A., Syngellakis S. and Mellor B. G., “Finite Element Prediction of the Residual Stresses in a Fillet Welded Joint”, Proceedings of the 6th International Conference on Trends in Welding Research, Pine Mountain, GA, USA, 15-19 April 2003.

Habbab H., Syngellakis S. and Mellor B. G., “Assessment of the Reliability of Instrumented Micro- indentation Data”, Proceedings of the Seventh Postgraduate Conference in Engineering Materials, Southampton, October 2001, 35-6.

Wu A., Syngellakis S and Mellor B. G., “Finite Element Analysis of Residual Stress in a Butt Weld, Proceedings of the Seventh Postgraduate Conference in Engineering Materials, Southampton, October 2001, 37-8.

Wharton J. A., Wood R. J. K. and Mellor B. G., “Electrochemical Noise Measurements to Monitor Flow Corrosion in AISI 304L Stainless Steel, Proceedings of the Eighth Postgraduate Conference in Engineering Materials, Southampton, 4 October 2002.

Wu, A., Syngellakis, S. and Mellor, B.G., “Finite Element Prediction of Residual Stresses in a Fillet Welded T-joint. In, 6th International Conference on Trends in Welding Research. , 2003, 832-837.

Moffat A., Mellor B. G., Reed P. A. S., “The Effect of Silicon Content on Long Crack Fatigue Behaviour of Aluminium-Silicon Piston Alloys at Elevated Temperature”, Proceedings of the Tenth Postgraduate Conference in Engineering Materials, Southampton, 1 October 2004.

Barber J, Mellor B. G. and Wood R. J. K, “The Development of Sub-surface Damage during High Energy Solid Particle Erosion of a Thermally Sprayed WC-Co-Cr Coating”, presented at 15th International Conference on Wear of Materials, San Diego, CA, USA, 24 – 28 April 2005.

Mellor B.G., Walsh F. C., Wharton J. A. and Wood R. J. K. “Electrochemical Surface Engineering: Versatile Techniques for the Production and Characterisation of Novel Coatings”, presented at Novel Applications of Surface Modification, Chester College, Chester, U.K., 18-21 September 2005.

Wu A., Mellor B. G. and Syngellakis S., "Experimental and finite element study of welded T-joints", Wu, A., Mellor, B.G. and Syngellakis, S. In, Dulieu-Barton, J.M. (ed.) *Advances in Experimental Mechanics IV*. Switzerland, Trans Tech, 2005, 117-124, (Applied Mechanics and Materials 3-4).

Moffat A, Mellor B.G, Reed, P.A., Sinclair I., Short Crack and Near Threshold Fatigue Behaviour of Al Casting Alloys, presented at 12th International Conference on Fracture held at the The Westin Ottawa and the Canadian Government Centre in Ottawa, Ontario, Canada July 12-17, 2009.

Soady K., Reed. A. S., Mellor B. G, Morris A., "Life Assessment Methods for Industrial Steam and Gas Turbines Blade to Disc Interfaces", Proceedings of the Fifteenth Postgraduate Conference in Engineering Materials, Southampton, October 2009, 5-6.

Soady K., Reed. A. S., Mellor B. G, Morris A., "Life Assessment Methods for Industrial Steam and Gas Turbines Blade to Disc Interfaces", Proceedings of the Sixteenth Postgraduate Conference in Engineering Materials, Bio-engineering and Tribology, Southampton, October 2010, 85-86.

Case, T.A.D., Scanlan, J.P., Mellor, B.G. and Harnan, R.C. (2011) Improving the producibility of components that are 'strangers by design'. In, 11th AIAA Aviation Technology, Integration, and Operations (ATIO) Conference, Virginia Beach, US, 21 - 23 Sep 2011.

Crump J., Reed P., Mellor B. G., Tubby P., "Early Crack Initiation Processes in Steel Arc Welds", Proceedings of the 2012 Postgraduate Conference in Engineering Materials Academic Unit, Southampton, November 2012, 17.

He B., Reed P. A. S., Mellor B.G., "Short Fatigue Crack Analysis on Shot Peened Turbine Blade Material", Proceedings of the 2012 Postgraduate Conference in Engineering Materials Academic Unit, Southampton, November 2012, 33.

Callisti M., Polcar T., Mellor B.G., "Fabrication and Characterisation of Ni-Ti-Based Shape Memory Thin Film: Effects of Copper as a Dopant", Proceedings of the 2012 Postgraduate Conference in Engineering Materials Academic Unit, Southampton, November 2012, 35.

Chianrabutra S., Mellor B. G., Yang S., "Multiple Materials Patterns Fabricated Using a Dry Powder Direct-write Technology for 3D Printing", Proceedings of the 2012 Postgraduate Conference in Engineering Materials Academic Unit, Southampton, November 2012, 55.

Crump, J.A., Reed, P.A.S., Mellor, B.G., Tubby, P., Fatigue Crack Initiation and Short Crack Growth in Steel Arc Welds, Proceedings of the 2013 Postgraduate Conference in Engineering Materials Academic Unit, Southampton, October 2013, 49.

He, B., Mellor, B.G., Reed, P.A.S., Short Fatigue Crack Aspect Ratio Analysis on Shot Peened Steam Turbine Blade Material, Proceedings of the 2013 Postgraduate Conference in Engineering Materials Academic Unit, Southampton, October 2013, 51.

Callisti, M., Mellor, B.G., Polcar, T., Effects of Copper on the Microstructural and Mechanical Properties of Sputtered-deposited Ni-Ti Thin Films, Proceedings of the 2013 Postgraduate Conference in Engineering Materials Academic Unit, Southampton, October 2013, 58.

Wilches Pena, Luis, Vicente, Wang, Ling, Mellor, Brian G., Huang, Yi and Wang, Ning (2016) A study of white etching areas in an annealed 52100 steel through high pressure torsion processes. At

71st STLE Annual Meeting and Exhibition 71st STLE Annual Meeting and Exhibition, Las Vegas, United States. 15 - 19 May 2016. 3 pp.

Palamarciuc, I; Galusca, DG, Ratoi, M, Mellor B, Dumitras, CG, Agop, M Intergranular degradation of stainless steel tubular components used for kerosene transportation. Metallographic analysis, 8th International Conference on Manufacturing Science and Education (MSE 2017) - Trends in New Industrial Revolution, Sibiu, ROMANIA Date: JUN 07-09, 2017

Book Series: MATEC Web of Conferences Volume: 121 Article Number: UNSP 09007 Published: 2017, DOI: 10.1051/mateconf/201712109007

Conference Contributions - Other

Mellor B.G., "The Attraction of University Consultancy Services for Industrial Companies", First meeting of Xarxa Temàtica Enginyeria de Materials, organised by the Generalitat de Catalunya, Direcció General de Recerca, Barcelona, Spain, 11 December 1995.

Mellor B.G., "The Attraction of University Consultancy Services for Industrial Companies", invited paper presented in "Successful University-Industry Linkages for a Global Economy", section of TMS 97, Orlando, Florida, USA, 9-13 February 1997.

Symonds N. and Mellor B.G., "Polymeric Coatings for Impact and Wear Resistance", presented at "The Mission of Tribology Research - 7", Institution of Mechanical Engineers, London, 3 December 1998.

Mellor B.G., "Advances in Coating and Welding Technologies" presented at Fòrum 2000 L'Enginyeria de Materials Davant el Nou Mil.leni, Barcelona, Spain, February 29, 2000.

Edited Works: Contributions

Mellor B.G., "Martensite Transformation and the Shape Memory Effect", Proceedings of EEC Comett Course on The Science and Technology of Shape Memory Alloys, Barcelona, Spain, February 1989, pp 274-333, published by Servei de Publicaciones and Centre d'Informacio i Documentacio Academica, Universitat de les Illes Balears, Palma de Mallorca, Spain.

Mellor B.G., "Engineering Properties of Shape Memory Alloys", Proceedings of EEC Comett Course on The Science and Technology of Shape Memory Alloys, Barcelona, Spain, February 1989, pp 334- 394, published by Servei de Publicaciones and Centre d'Informacio i Documentacio Academica, Universitat de les Illes Balears, Palma de Mallorca, Spain.

Mellor B.G., "Testing of Materials" in J.M. Guilemany, ed. Caracterización de Materiales Metálicos: Estructura - Propiedades, Barcelona, Spain, Departamento de Ingeniería Química y Metalurgia, Universitat de Barcelona, Spain, 1993, 141-63.

Mellor B.G., "Behaviour of Metallic Materials in Service" in J.M. Guilemany, ed. Caracterización de Materiales Metálicos: Estructura Propiedades, Barcelona, Spain, Departamento de Ingeniería Química y Metalurgia, Universitat de Barcelona, Spain, 1993, 377-99.

Mellor B.G., "Metal Matrix Composites (MMCs)" in J.M. Guilemany, ed. Caracterización de Materiales Metálicos: Estructura Propiedades, Barcelona, Spain, Departamento de Ingeniería

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Mellor B.G., "Performance of Thermal Spray Coatings in Service" in J.M.Guilemany, ed. Ciencia e Ingeniería de la Proyección Térmica, Barcelona, Spain, Departamento de Ingeniería Química y Metalurgia, Universitat de Barcelona, Spain, 1996, 162-179.

Mellor B.G., "Hydrogen Embrittlement Failure of Maraging Steel Bourdon Tubes", in D. R. H. Jones ed. Failure Analysis Case Studies, Pergamon, July 1998, 325 - 335, ISBN 0-08-043338-3.

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Journal Papers - Academic Journals

Mellor B.G. and Chadwick G.A., "The Unidirectional Growth of Copper-Indium Eutectoid Alloy", *Metal Science*, 8, 1974, 65-72.

Mellor B.G. and Chadwick G.A., "Volume Diffusion Coefficients in the β Phase Region of the Copper-Indium System", *Metal Science*, 8, 1974, 63-64.

Mellor B.G. and Edmonds D.V., "Unidirectional Transformation of Fe-0.8C-Co Alloys, Part 1 Process/Structure Relationships", *Metallurgical Transactions*, 8A, 1977, 763-771.

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Kirchner H.O.K., Mellor B.G. and Chadwick G.A., "A Calorimetric Determination of the Interfacial Enthalpy of Cu-In and Cu-Al Pearlites", *Acta Metallurgica*, 26, 1978, 1023-1031.

Mellor B.G. and Calvo F.A., "Soldadura de Piezas de Cobre por Amalgamación Superficial", (The Welding of Copper by Surface Amalgamation), *Revista de Soldadura*, VII(1), 1978, 3-7.

Mellor B.G. and Edmonds D.V., "Mechanical Properties of Unidirectionally Transformed Cu-In Alloys", *Journal of Materials Science*, 13, 1978, 571-579.

Mellor B.G., Edmonds D.V. and Chadwick G.A., "The Coarsening of Aligned Cu-In Eutectoid", *Metals Science*, 12, 1978, 439-444.

López de Castillo C., Hernaez J. and Mellor B.G., "The Effect of Thermal and Stress Cycling on Thermoelastic Martensite Formation in Cu-Al-Mn Alloys", *Journal of Materials Science*, 21, 1986, 4043-4047.

Mellor B.G., Hernaez J. and López del Castillo C., "Shape Memory Effects in Cu-Al-Mn Alloys", *Scripta Metallurgica*, 20, 1986, 839-841.

Hernaez J., López del Castillo C., Mellor B.G., Criado A. and Blazquez M.L., "Obtención de

Aleaciones con Memoria de Forma" (Obtention of Shape Memory Alloys), *Rev. Metal Madrid*, 22(5), 1986, 292-295.

Guilemany J.M., Mellor B.G., Miguel J.R. and Gil J., "Dynamic Studies of Martensitic Transformation in Copper Shape Memory Alloys using Scanning Electron Microscopy", *Microbeam Analysis*, 1987, 99-102.

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Guilemany J.M., Miguel J.R., Gil F.J., and Mellor B.G., "Estudio en Microscopia Electrónica de Barrido de la Evolución con Temperatura de la Transformación Martensítica en Materiales con Memoria de forma, Cu-Al-Zn; Metalografía Dinámica, (Scanning Electron Microscopic Study of the Evolution of the Transformation Temperatures in Cu-Al-Zn Shape Memory Materials, Dynamic Metallography), *Revista Técnica Metalúrgica*, XLIII(285), March-April 1988, 3, 4, 6-8, 10.

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Mellor B.G. and Chadwick, G.A., "The Structure and Properties of Unidirectionally Solidified Low Alloy Steels", *Materials Science and Technology*, 4(11), 1988, 991-999.

Mellor B.G., Guilemany J.M., Miguel J.R., Fernández J., Amengual A., Lovey F.C. and Torra V., "Stabilised Stress Induced Martensite - Its Use in Two Way Shape Memory Training Processes", *Scripta Metallurgica*, 24(2), 1990, 241-244.

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