FULL LIST OF PUBLICATIONS

<u>Refereed Journal Papers</u>

Under Review

1. S. Yoon, P. J. M. Monteiro, D. E. Macphee, F. P. Glasser and M. S. Imbabi, Statistical analysis of the mechanical properties of high-volume class F fly ash concretes (under review 2013).

2. S. Yoon, D. E. Macphee, and M. S. Imbabi, A validated methodology for accurate guarded hot plate measurement of the thermal properties of hardened cements and concretes (under review 2013).

Accepted, available online

3. M. S. Imbabi, C. Carrigan and S. McKenna, Trends and developments in green cement and concrete technology, International Journal of Sustainable Built Environment (DOI 10.1016/j.ijsbe.2013.05.001).

4. M. S. Imbabi, Passive-active dynamic insulation systems for all climates, International Journal of Sustainable Built Environment (DOI 10.1016/j.ijsbe.2013.03.002).

Published

5. E. Elsarrag, Y. AlHorr and M. S. Imbabi, Improving Building Fabric Energy Efficiency in Hot-Humid Climates using Dynamic Insulation', Building Simulation: An International Journal, 5 (2), p127–134, 2012.

6. J. M. Wong, F. P. Glasser and M. S. Imbabi, Evaluation of thermal conductivity in air permeable concrete for dynamic breathing wall construction, Cement & Concrete Composites 29, p647-655, 2007.

7. M. S. Imbabi, Modular breathing panels for energy efficient, healthy building construction, Renewable Energy, 31(5), p729-738, 2006.

8. M. S. Imbabi and A. D. Peacock, Allowing buildings to breathe, Sovereign Publications, p85-95, 2004.

9. H. C. Tan, O. O. R. Famiyesin and M. S. Imbabi, Dynamic deformation signatures in reinforced concrete slabs for condition monitoring, Computers & Structures, 79, p2413-2423, 2001.

10. Z. Q. Qian, A. R. Akisanya and M. S. Imbabi, Edge effects in the failure of elastic/viscoelastic joints subjected to surface tractions, Int. Journal of Solids and Structures, 37, p5973-5994, 2000.

11. Z. Q. Qian, A. R. Akisanya and M. S. Imbabi, Effects of geometry on the deformation of asphaltic plug joints subjected to surface tractions, Proc. IMechE, Journal of Strain Analysis for Engineering Design, 35(5), p403-413, 2000.

12. B. J. Taylor and M. S. Imbabi, Environmental design using dynamic insulation, ASHRAE Transactions, 106(1), p15-28, 2000.

13. B. J. Taylor and M. S. Imbabi, Dynamic insulation in multi-storey buildings, Proc. CIBSE A, Building Services Engineering Research & Technology (BSERT), 20(4), p175-180, 2000.

14. B. J. Taylor and M. S. Imbabi, The application of dynamic insulation in buildings, Renewable Energy, 15(1), p377-382, 1998.

15. B. J. Taylor, R. Webster and M. S. Imbabi, The building envelope as an air filter, Building & Environment, 34(3), p353-361, 1998.

16. M. D. Reid, M. S. Imbabi and D. Coutellier, The effects of joint geometry on the response of asphaltic plug joints, Proc. ASCE, Journal of Transportation Engineering, 124(4), p311-318, 1998.

17. R. Gordon and M. S. Imbabi, CFD optimisation and validation of closed-circuit wind / water tunnel design, Proc. ASME, Journal of Fluids Engineering, 120(2), p311-318, 1998.

18. B. J. Taylor, and M. S. Imbabi, The effect of air film thermal resistance on the behaviour of dynamic insulation, Building & Environment, 32(5), p397-404, 1997.

19. B. J. Taylor, D. A. Cawthorne and M. S. Imbabi, Analytical investigation of the steady-state behaviour of dynamic and diffusive building envelopes, Building & Environment, 31(6), p519-525, 1996.

20. M. S. Imbabi and A. Musset, Performance evaluation of a new hybrid solar heating and ventilation system optimised for UK weather condition, Building & Environment, 31(2), p145-153, 1996.

21. M. S. Imbabi and A. Musset, The Monymusk hybrid solar heating and ventilation project, Building & Environment, 30(1), p91-98, 1994.

22. M. S. Imbabi and A. Musset, Hybrid solar heating and ventilation - the Monymusk housing project, Renewable Energy, 5(2), p1138-1142, 1994.

23. G. S. Barozzi, M. S. Imbabi, E. Nobile, and A. C. M. Sousa, Physical and numerical modelling of a passive solar ventilation system for buildings, Building & Environment, 27(4), p433-445, 1992.

24. M. S. Imbabi, Scale modelling of the built environment, Energy & Buildings, 17, p7-12, 1991.

25. M. S. Imbabi, A general procedure for the small scale modelling of buildings, International Journal of Energy Research, 14, p311-321, 1990.

26. M. S. Imbabi & W. Chiesa, Procedimento per la riproduzione di edifici bioclimatici su modelli fisici in piccola scala, Tecnica Italiana, 14(2), p187-199, 1990.

27. M. S. Imbabi, Computer validation of scale model tests for building energy simulation, International Journal of Energy Research, 14, p727-736, 1990.

Editorships of Journal Proceedings

28. M. S. Imbabi (Editor), Special issue of the International Journal of Sustainable Built Environment on Passive House (in preparation, 2013).

Published Patents

29. WO2012117241 A1 Dynamic Insulation Systems – PENDING GRANT.

30. GB2488374 A1 (28/02/2011) Apparatus and methods for forming void spaces within the envelope of a building - PENDING GRANT.

31. WO2010 122353 A1 Cladding Panel – PENDING GRANT.

32. WO2010 007400 A1 A Concrete Mixture and Method of Forming the Same – PENDING GRANT.

33. WO2009 106891 A1, Boundary Layer Energy Recovery Apparatus – PENDING GRANT

34. WO2005 028076 A1, Support Panel – GRANTED.

35. WO2003 057470 A1, Cladding Panel – GRANTED.

36. WO 93/06421, Cladding panels for the optimised transmission of electromagnetic, including solar, radiation - LAPSED.

2 further patent applications stemming from the Green Concrete Project are in process.

Refereed Conference Papers

As invited keynote or guest speaker

37. M. S. Imbabi and F. P. Glasser, Trends and developments in green cement and concrete technology, Opening Plenary of the International Sustainable Built Environment Conference, Doha 28-30 January 2014.

38. M. S. Imbabi, Crunching the costs: payback on green investment, Housing, Carbon Reduction and Climate Change: the Cost, Sustainability and Supply Challenge, Homes for Scotland 1st Annual Conference, 31st October 2012.

39. M. S. Imbabi, Dynamic insulation for energy efficient low carbon building envelopes, Keynote speaker, Association of Environment Conscious Builders (AECB) 21st Anniversary Conference, 1 – 2 October 2010.

40. M. S. Imbabi, The clean, low carbon technology of dynamic breathing building, Building for Tomorrow 2008, Keynote speaker, Annual NHBC Conference, 18 March 2008.

41. M. S. Imbabi, The performance of dynamic breathing buildings in the United Arab Emirates, Keynote speaker, Proceedings of Environment 2007 Conference, 28 January – 2 February 2007, Abu Dhabi, UAE.

42. M. S. Imbabi, Low energy building design for the 21st century, Guest speaker at the Emirates Environmental Group General Meeting, Dubai, June 2005.

43. M. S. Imbabi, Breathing Buildings, Keynote speaker, Proceedings of the 4th IFCO Congress on Energy Conservation in Buildings & Renewable Energy, Tehran, 10 - 15 March 2005.

As invited speaker

44. S. Yoon, H. Beltagui, F. P. Glasser, M. S. Imbabi, Simulation of Cyclic Environmental Effects on Coupled Ionic and Moisture Transport in Cements and Concretes, RILEM International workshop on performance-based specification and control of concrete durability, 11-13 June 2014.

45. F. P. Glasser and M. S. Imbabi, Reducing the carbon footprint of construction concrete, 34th Annual Cement and Concrete Science Conference, 14-16 September 2014.

46. M. S. Imbabi, Passive dynamic insulation systems for cold climates, Proceedings of PassivHus Norden 2012, Akademika forlag 9788232, 21-23 October 2012.

47. E. Elsarrag, Y. AlHorr and M. S. Imbabi, The Eco-Villa: Research and demonstration project on the use of adaptive insulation in the Gulf Region, Invited speaker, Green Building Solutions Conference, Doha (Qatar), 2 – 4 March 2011.

48. M. S. Imbabi and E. Elsarrag, Tuneable U-values for energy efficient, low carbon building envelopes, Invited speaker WREC-XI, Abu Dhabi (UAE), 25 – 30 September, 2010.

49. E. Elsarrag, F. N. Sahawneh and M. S. Imbabi, The UAE eco-villa research and demonstration project, Invited speaker WREC-XI, Abu Dhabi (UAE), 25 – 30 September, 2010.

50. M. S. Imbabi and P G Smith, Dynamic breathing buildings – the future, Invited speaker, Proceedings of the e2 Energy Solutions Conference and Expo, Olympia, London (UK), 10 October 2007.

51. E. Elsarrag, M. Aboulnaga, A. Peacock and M. S. Imbabi, Dynamic insulation for energy conservation and improved indoor air quality in hot humid climates, Invited speaker, Proceedings of the ASHRAE 5th Chapter Regional Conference (CRC) , Dubai, UAE, 1 – 3 November 2006.

52. M. S. Imbabi, Full-scale evaluation of energy use and emissions reduction of a dynamic breathing building, Invited speaker, Proceedings of WREC-IX, Florence, Italy, 19 - 25 August 2006.

53. M. S. Imbabi, The enabling technology of dynamic breathing buildings, Invited Speaker, Proceedings of the 1st Green Building Conference, Dubai, UAE, 2006.

54. M. S. Imbabi and J. Banks, Predictions of a new material for energy efficient wall construction, Organising Chairman, Proceedings of WREC2005, May 2005.

55. J. M. Wong, F. P. Glasser and M. S. Imbabi, Breathable concrete for low energy buildings, Organising Chairman, Proceedings of WREC2005, May 2005.

56. M. S. Imbabi, New developments in the science and art of breathing walls, Invited speaker, Proceedings of WREC-VIII, Denver, September 2004.

57. M. S. Imbabi and A. Peacock, Smart breathing walls for integrated ventilation, heat exchange, energy efficiency and air filtration, Invited speaker, Proceedings of the ASHRAE/CIBSE conference, Edinburgh, September 2003.

58. M. S. Imbabi, J. Campbell and S. Lafougere, Multi-layer dynamic insulation panels for natural ventilation and filtration of urban air pollution, invited speaker, Proceedings of WREC VII, Frankfurt, July 2002.

59. M. S. Imbabi, H. C. Tan, and O. O. R. Famiyesin, Qualitative state space representations of damage in reinforced concrete slabs, invited speaker, Proceedings of ICCE/9, San Diego, July 2002.

60. M. S. Imbabi, O. O. R. Famiyesin and H. C. Tan, Real-time monitoring of reinforced concrete structures using dynamic deformation signatures, Proceedings of the Structural Health Monitoring 2002 workshop, Stanford - invited speaker, September 2001.

61. B. J. Taylor and M. S. Imbabi, The application of dynamic insulation in multi-storey buildings, Invited speaker, Proceedings of WREC VI, Part 1, Brighton, 1 - 7 July 2000.

62. H. C. Tan, O. O. R. Famiyesin and M. S. Imbabi, Dynamic strain signatures of RC slabs for AI-based condition monitoring, Invited speaker, Proceedings of the Civil-Comp Conference on Artificial Intelligence Applications in Civil and Structural Engineering (AICIVIL-COMP99), Oxford, 13 - 15 Sept 1999.

63. B. J. Taylor, R. Webster, and M. S. Imbabi, The application of dynamic insulation in buildings, Proceedings of the World Renewable Energy Congress (WREC-V), Florence, Invited speaker, 20 - 25 September 1998.

64. R. Gordon and M. Imbabi, On the application of digital stereo photogrammetry for the visualisation of fluid flow, Invited speaker, Proceedings of the 2nd Eurotherm - 14th UIT Conference, Rome, Vol. 2, 29 - 31 May 1996.

65. R. Gordon and M. S. Imbabi, K-epsilon turbulence model of room airflow in hybrid solar heating and ventilation, Invited speaker, Proceedings of the European Conference on Energy Performance and Indoor Climate in Buildings (EPIC'94), Lyon, Vol. 1, 24-26 November 1994.

66. G. S. Barozzi, M. S. Imbabi, E. Nobile, and A. C. M. Sousa, scale models and CFD for the analysis of air flow in passively ventilated buildings, Invited speaker, Proceedings of the International Building Simulation Performance Association Conference, Nice (France), Eds. J. A. Clarke, J. W. Mitchell and R. C. VanDe Perre, 20 - 22 August 1991.

67. G. S. Barozzi, W. Chiesa, R. Costa, M. S. Imbabi, E. Nobile, and P. Piva, Bio-climatic building design: small-scale modelling and CFD working together, Invited speaker, Proceedings of the 8th Congresso Nazionale Sulla Trasmissione Del Calore, UIT, Ancona (Italy), 28 - 29 June 1990.

As presenting delegate

68. N. Patterson, S. Yoon and M. S. Imbabi, Evaluation of the effect of compliant contact layers on the measurement of thermal conductivity of precast concrete building blocks, 9th International Masonry Conference, Guimarães, 7-9 July 2014.

69. M. S. Imbabi, A clean technology to combat climate change - dynamic breathing building, The Cleantech Forum XVII, The Cleantech Network, Brussels, 28 April 2008.

70. A R Brown, M S Imbabi and A D Peacock, The transforming technology of dynamic breathing building, Proceedings of Ecocity World Summit 2008, San Francisco (USA). 24 – 26 April 2008.

71. A R Brown, M S Imbabi and A D Peacock, Dynamic breathing buildings to combat global warming, Proceedings of the 3rd International Solar Cities Congress 2008, Adelaide (Australia). 17 – 21 February 2008.

72. M. S. Imbabi and J. Ayres, Dynamic breathing building (DBB) technology, maximising fresh air ventilation and minimizing energy use, Proceedings of the UKIEG Annual Conference, Institute of Child Health, University College London, October 2006.

73. A. Samuel, M. S. Imbabi, A. Peacock and P. A. Strachan, Dynamic insulation: results from whole-building simulations, Proceedings of the ASHRAE/CIBSE conference, Edinburgh, September 2003.

74. I. Trendafilova, M. Imbabi, Novel health monitoring procedure for reinforced concrete slabs, Proceedings of BSSM, September 2003.

75. M. S. Imbabi, O. O. R. Famiyesin and H. C. Tan, On chaotic changes in the dynamic deformation state space of a reinforced concrete slab with load-induced damage, Proceedings of the EuroMech Colloquium 425: Nonlinear Dynamics, Control and Condition Monitoring, Aberdeen, August 2001.

76. Z.Q. Qian,., A.R. Akisanya and M.S. Imbabi, Stress behaviour at the interface corner between three elastic materials, Proceedings Of the 5th International Conference on Computational Structures and Technology, Leuven, Belgium, 6 - 8 September 2000.

77. H. C. Tan, O. O. R. Famiyesin and M. S. Imbabi, Integrity of reinforced concrete slabs by the analysis of response waveforms, Advances in Civil and Structural Engineering for Practice, Civil-Comp Press, Edinburgh, 1998.

78. B. J. Taylor, R. Webster, and M. S. Imbabi, Filtration of particulate air pollution using dynamically insulated building envelopes, Proceedings of the European Conference on Energy Performance and Indoor Climate in Buildings (EPIC'98), Lyon, Vol. 1, 19 - 21 November1998.

79. B. J. Taylor, R. Webster, and M. S. Imbabi, The use of dynamic insulation as a filter of urban air pollution, Proceedings of the EEC-DGXVII REBUILD'98, Florence, 1 - 3 April 1998.

80. B. J. Taylor, R. Webster and M. S. Imbabi, The use of dynamic and diffusive insulation for combined heat recovery and ventilation in buildings, Proceedings of the BEPAC/EPSRC Sustainable Building Conference, Abingdon, 5 - 6 February 1997.

81. B. J. Taylor and M. S. Imbabi, Dynamic insulation - a systems approach, Proceedings of the Building Physics in Northern Climates Conference, Espoo, 9 - 10 September 1996.

82. R. Gordon and M. S. Imbabi, Optimisation of a modular closed circuit wind / water tunnel using computational fluid dynamics, Proceedings of Supercomputer Applications for the Transportation Industries: 27th ISATA Conference, Aachen, 31 Oct - 4 Nov, 1994.

83. D. Vennin, J. Watson, and M. S. Imbabi, Study of air flow in hollow bricks using holographic interferometry, Proceedings of the IEEE Conference on Lasers and Electro-Optics Europe (CLEO '94) - Technical Digest, Amsterdam (The Netherlands), August 28 - September 2 1994.

84. G. S. Barozzi, M. S. Imbabi, E. Nobile, and A. C. M. Sousa, An experimental and numerical study of passive solar ventilation in buildings, Proceedings of the Biennial Congress of the International Solar Energy Society, Denver (USA), Eds. M. E. Arden, S. M. Burley and M. Coleman, Vol. 3 (Part I), 17 - 24 August 1991.

85. G. S. Barozzi, M. S. Imbabi, E. Nobile, and A. C. M. Sousa, Small-Scale and numerical modelling of a passive solar ventilation system, Proceedings of the 5th International Conference in Computational Methods and Experimental Measurements, Montreal (Canada), 23 - 26 July 1991.

86. M. S. Imbabi and R. J. Cope, An equivalent elasto-plastic constitutive model for biaxially loaded concrete, Proceedings of the 1st International Conference on Computer Aided Analysis and Design of Concrete Structures, Split (Yugoslavia), Vol. 1, 1984.

87. M. S. Imbabi and R. J. Cope, A discretised bond and aggregate interlock model for nonlinear analysis, Proceedings of the 2nd International Conference on Numerical Methods for Nonlinear Problems, Barcelona (Spain), April 1984.

Editorships of Conference Proceedings

88. M. S. Imbabi and C. P. Mitchell (Editors), Proceedings of WREC-2005, Aberdeen (Scotland), May 2005.

Other Conference, Workshop and Seminar Presentations

89. M. S. Imbabi, Advances in green cement and concrete technology, The Use of Recycled Materials in Construction, CiC Start Conference, 6th February 2013.

90. M. S. Imbabi, Green Data Centres, Green Computing and Communications 'Go Green' Workshop, 24th May 2012.

91. M. S. Imbabi and P. G. Smith, Challenging the orthodoxy of sustainable building design, Sustainable Development 2009 Conference Master Class, Westminster, London, 19 February 2009.

92. M. S. Imbabi, Dynamic breathing walls, The Scottish Construction Centre Workshop, Edinburgh, 18 February 2009.

93. M. S. Imbabi, Technologies to build a low carbon future, CIRIA, London, 30 May 2007.

94. A. Peacock and M. S. Imbabi, Designing the building envelop for improved thermal performance, TCS Seminar, Aberdeen, 11 March 2003.

95. A. Peacock, M. S. Imbabi and J. Campbell, A revolutionary environmental building system, Royal Society Summer Science Exhibition 2003, House of Commons, Westminster, 17 March 2003.

Other Reports and Commissions

96. M. S. Imbabi, *Achieving Carbon Reductions and Tackling Fuel Poverty: How the Homebuilding Industry can assist the Scottish Government with these objectives*, Report commissioned by Homes for Scotland (HFS), the representative body of the house building industry, to critically evaluate the value of the proposed new Building Standards and explore other, more useful alternatives, 12th June 2012.

97. Application of Energyflo® Dynamic Insulation in SAP Appendix Q, 2010. http://www.sap-appendixq.org.uk/documents/APPLICATION_OF_DYNAMIC_ INSULATION_IN_SAP.pdf.

98. Energyflo Dynamic Timber Frame Product Installation Guide, 2010. http://www.energyflo.co.uk/resources/downloads/design-and-installation/15-energyflo-dynamic-timber-frame-product-installation-guide.

99. Energyflo Dynamic Masonry Cavity Product Installation Guide, 2010. http://www.energyflo.co.uk/resources/downloads/design-and-installation/16-energyflo-dynamic-masonry-cavity-product-installation-guide.

100. Energyflo Dynamic Insulation Design Guide-1, 2010. http://www.energyflo.co.uk/resources/downloads/design-and-installation/21-energyflo-dynamic-insulation-design-guide-1.

101. Energyflo Dynamic Insulation Installation Guide, 2010. http://www.energyflo.co.uk/resources/downloads/design-and-installation/22-energyflo-dynamic-insulation-installation-guide

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103. Energyflo Dynamic Insulation: IES<VE> Workflow Methodology for Part L2 & EPC Compliance, 2010. http://www.iesve.com/.

104. IEA-ECBCS Annex 44, Integrating Environmentally Responsive Elements in Buildings, state of the art review of Responsive Building Elements (Ed. Marco Perino), Aalborg University, Denmark, ISBN 978-88-8202-073-6 (2008).