Ian Masters

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Current position

Lecturer

Education

1993 BSc Engineering Mathematics, University of Wales Swansea
1997 PhD "Parallel Heat Transfer", University of Wales Swansea

Research interests

Tidal Current Turbines
The Swanturbines project (www.swanturbines.co.uk) to build a device to capture the energy of flowing water (Conceptually this can be thought of as an underwater windturbine). It is fully submerged and a completely predictable form of energy. This active technology development project has a number of large industrial partners and has a potential to contribute to our future energy needs.

Renewable Energy
Computer modelling, design, verification and independent expert opinion on all renewable technologies with particular interest in marine renewables (i.e. Tidal and Wave energy)

Use of slate waste
700 million tonnes of slate waste on the surface in Wales is a valuable materials resource that needs to be made use of.

Heavily filled slate composite materials
High performance materials technology has been used to create a range of exciting new materials with low environmental impact and excellent performance.

Career

Dr Masters has managed a diverse range of industrial research and development projects worth over £1m since 1997. He has published over 40 academic papers, 2 patents and a number of commercial industrial reports. He has experience of Computer Aided Engineering Design and Simulation that has been backed up by experimental work on an industrial scale. Commercial partners have been involved in a number of industries including metals recycling (IMCO Recycling), mixing technology (Kestrel Services), petrochemical (BP), parachute systems (Irvin-GQ), water treatment (Celvac), aggregates (Berwyn Slate) and building products (Uniq).

Professional activities

Member of the Institute of Mathematics and Applications and Chartered Mathematician (CMath MIMA)

Chartered Scientist (CSci)

Refereed papers and chapters in books

Refereed Journal Papers	11
Refereed Journal Papers in print	3
Patents	2
Book Chapters	3
Conference Works	25
Industrial Research Reports	6

Summary of journal publications

Journal	Impact factor	Number of papers
International Journal for Numerical Methods in Engineering	1.468	2
Computer Methods in Applied Mechanics and Engineering	0.957	1
Composite Structures	0.786	1
Other indexed journals		7
Other papers in refereed journals		0

Selected publications (max. 5)

J.A.C. Orme and I. Masters, Design and Testing of a Direct Drive Tidal Stream Generator, in C. French (ed.) Proc. MAREC 2004, (Institute of Marine Engineering, Science and Technology, 2004), 108-115

M.R. Willis and I. Masters, The effect of filler loading and process route on the three-point bend performance of waste based composites, Composite Structures, 62, (2003) 475–479, [ISSN: 0263-8223]

I. Rees, I. Masters, A.G. Malan and R.W. Lewis, An Edge-Based Finite Volume Scheme For Saturated-Unsaturated Groundwater Flow, Computer Methods in Applied Mechanics and Engineering, 193, (2004) 4741-4759, [ISSN: 0045-7825]

I. Masters, I. Rees and R.W. Lewis, Advanced programming methods and data structures for computational modelling using edge based finite volume methods. International Journal for Numerical and Analytical Methods in Geomechanics, 28, (2004), 1521-1532, [ISSN: 0363-9061]

J.T. Cross, I. Masters and R.W. Lewis, Why you should consider object-oriented programming techniques for finite element methods, International Journal of Numerical Methods for Heat and Fluid Flow, 9 (1999), 333-347, [0961-5539]

Other relevant information