Mark Cross

School of Engineering
University of Wales Swansea
Singleton Park
Swansea SA2 8PP
UK

Phone:01792 602332
Fax: 01792 295676
e-mail: m.cross@swan.ac.uk

Current position

Professor of Computational Modelling

Education

BSc (Hons) Mathematics, University of Wales 1969
PhD Mathematical Physics, University of Wales 1972
DSc Computational Engineering, University of Greenwich/CNAA 1991

Research interests

Computational Modelling of engineering processes
Multi-physics simulation technologies
High performance parallel computing strategies

Career

1972 -1973 Lecturer, South Bank University, London
1974 -1977 Research Scientist, British Steel Corporation, Teesside Labs
1977 – 1980 Reader in Computational Mathematics, Sunderland University
1980 -1981 Visiting Professor at Universities of Minnesota and California, Berkeley
1981-1982 Director, CHAM Ltd, London
1982 – 2005 University of Greenwich, Professor of Computational Modelling
- Head of School, Computing and Mathematical Sciences (1982 -1993)
- University Director of Research (1993 – 1999)
- Pro Vice Chancellor (1999 – 2004)

2005 – now Professor of Computational Modelling, University of Wales, Swansea

Professional activities

Vice President, IMA (1996-1997)

Chairman of a variety of international conferences 1991 – 2003
Keynote speaker at about 5 international conferences per year

Refereed papers and chapters in books

Over 100

Summary of journal publications

Journals since 1996	**Number of papers**
App Math Modelling	8
Parallel Computing	7
Materials and Metallurgical Transactions B	4
Other indexed journals	45
Other papers in refereed journals	

Selected publications (max. 5)

Assessing the parallel performance of multi-physics tools for modelling of solidification and melting processes, Intl Jnl High Perf Comp Applns, 2005 19, 1-27 (with K McManus, T N Croft, C Walshaw and A Williams)

Modelling of Ingot Development During the Start-up Phase of Direct Chill Casting, Metallurgical and Materials Transactions, 2003 Vol. 34B(with A J Williams and T N Croft)

A vertex based finite volume method applied to non-linear material problems in computational solid mechanics, Int J Num Methods Engg,2003 56, 507-529 (with G Taylor and C Bailey)

Dynamic fluid structure interaction using Finite Volume Unstructured Mesh procedures, Computers and Structures, 2002 80, 371-390 (with A Slone, K Pericleous and C Bailey)

Computational Modelling of Metal Extrusion and Forging Processes, Jnl of Materials Processing Tech, 2002 125-126, 573-582 (with A. J. Williams, T. N. Croft)

Other relevant information

Editor of the archival journal, *Applied Mathematical Modelling,* published by Elsevier Holland.

Involved in three technology start-up companies in both the UK and USA.

Serve as a technology consultant to a range of international minerals and metals corporations