D.R.J. Owen

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Current position

Professor in Civil Engineering

Education

Civil Engineering	B. Sc.(1st Class Hons)	1963	University of Wales, UK
Civil Engineering	M. Sc.	1964	University of Wales, UK
Computational Mechanics	Ph. D.	1966	Northwestern University, USA
Computational Mechanics	D. Sc.	1982	University of Wales, UK

Research interests

Finite & discrete elements
Computational plasticity
Multi-fractrucring solids & particulate systems
Parallel processing

Career

Walter P. Murphy Res. Fellow	Northwestern University, USA,1965-67
Lecturer	University of Wales, Swansea, 1967-74
Senior Lecturer	University of Wales, Swansea, 1974-78
Reader	University of Wales Swansea, 1978-83
Professor	University of Wales Swansea, 1983-Present

Honors and awards

Fellow of the Royal Academy of Engineering, 1996
Honorary D. Sc., University of Porto, Portugal, 1998
Computational Mechanics Award of the International Association of Computational Mechanics (IACM) for "outstanding contributions in the field of computational mechanics', 2002
The Koiter Medal of the American Society of Mechanical Engineers (ASME), USA for "contributions to theoretical and computational advances in mechanics", 2003
The Gauss-Newton Medal of IACM for "outstanding contributions in the field of computational mechanics", 2004.
The SEMNI Prize of the Spanish Society for Numerical Methods in Engineering "in recognition of excellence in research in numerical methods", 2005.

Professional activities

Editor of International Journal of Engineering Computations

Refereed papers and chapters in books

210

Summary of journal publications

Journal	**Impact factor**	**Number of papers**
Int. J. Numer. Meth. Engng.	1.692	33
Comp. Meth. Appl, Mech, Engng	1.252	25
Computers & Structures	0.634	20
Other indexed journals		
Other papers in refereed journals		190

Selected publications (max. 5)

D. R. J. Owen, Y. T. Feng, E. DeSouza Nato, F. Wang, M. G. Cottrell, F. A. Pires and J. Yu: The modelling of Multi-fracturing Solids and Particulate Media. Int. J. Numer. Meth Engng, 60(1): 317-340, 2004.

P. A. Klerck, E. J. Sellers and D. R. J. Owen: Discrete fracture in quasi-brittle materials under compressive and tensile stress states, Comp. Meth Appl. Mech Eng. 193 (27-29): 3035-3056, 2004

F.M.A. Pires, E.A.D. Neto, D.R.J. Owen. On the finite element prediction of damage growth and fracture initiation in finitely deforming ductile materials, Comp. Meth Appl. Mech Eng. 193 (48-51): 5223-5256 2004

M. G. Cottrell, J. Yu & D. R. J. Owen. The adaptive and erosive numerical modelling of confined boron carbide subjected to large-scale dynamic loadings with element conversion to undeformable meshless particles, Int. J. Impact Engng. 28 (9): 1017-1035 OCT 2003

M. Vaz M, D.R.J. Owen. Aspects of ductile fracture and adaptive mesh refinement in damaged elasto-plastic materials, Int. J. Numer. Meth Engng, 50 (1): 29-54 JAN 10 2001

Other relevant information

Professor Owen, an international authority on finite element and discrete element techniques, is the author of *seven* textbooks and over *four hundred* scientific publications. In addition to being the editor of *thirty* monographs and conference proceedings, Professor Owen is also the editor of the International Journal for Engineering Computations and is a member of several Editorial Boards.

Professor Owen's research, in the field of solid and structural mechanics, has largely centred on the development of solution procedures for non-linear problems encountered in engineering practice. Professor Owen has contributed prominently to the development of computational strategies for plastic deformation problems and to the introduction of parallel processing concepts to finite element analysis. Over the last decade or so, his work has focused on the development of discrete element methods for particulate modelling and the simulation of multi-fracturing phenomena in materials. Areas of application have included the simulation of industrial forming processes for metals, plastics and glass, rock blasting modelling, deep level mining operations, food technology, defence problems, the response of semiconductor devices and structural failure predictions.

Professor Owen's research interests have lead to extensive industrial involvement**.** In 1985 he co-founded *Rockfield Software Ltd.*, of which he is Chairman, for the specific purpose of providing a computational technology service to industry. The University based company, which is located in the Innovation Centre, University of Wales Swansea, has grown into one of the foremost UK computational R&D companies and has established a world wide reputation for leading edge engineering activities.

The acknowledged stature of Professor Owen in the field of computational mechanics has lead to appointments to play a leading role in national and international organisations. For example, he is a *Council Member* of IACM (International Association for Computational Mechanics) which is a world wide organisation established to promote and guide research and applications in the field of numerical modelling. He is also *Past Chairman* of the UK Association for Computational Mechanics in Engineering, which is the national association affiliated to IACM. Due to his industrial involvement, Professor Owen has served for over ten years as elected *Council Member* of NAFEMS, which is an international organisation aimed at establishing standards and quality assurance procedures for the safe use of finite element methods.

Professor Owen is also a Fellow of the Royal Academy of Engineering.