**Martin J. Blunt**
Professor of Petroleum Engineering
Department of Earth Science & Engineering
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**Education**

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| 1985 | BA Natural Sciences, Cambridge University (First Class Honours) |
| 1988 | PhD, Theoretical Physics, Cambridge University. "The Growth and Properties of Fractal Boundaries." |

**Employment**

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| 1988-1992 | Research Physicist, BP Research, Sunbury-on-Thames |
| 1992-1999 | Faculty member, Department of Petroleum Engineering, Stanford University: Assistant Professor 1992-1995; Associate Professor 1995-1999; sabbatical at Imperial College 1998-1999. |
| 1999-date | Professor of Petroleum Engineering Imperial College London: Head of the Petroleum Engineering and Rock Mechanics research group (PERM) 1999-2006; Head of the Department of Earth Science and Engineering 2006-2011. |

**Honours and Awards**

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| 1985 | Research Scholarship, Trinity College Cambridge |
| 1985 | Clerk Maxwell and ver Heyden de Lancey Prizes, Cambridge University |
| 1991 | Tallow Chandlers Prize, BP |
| 1996 | Teaching award, School of Earth Sciences, Stanford University |
| 1996 | Cedric Ferguson Medal, Society of Petroleum Engineers |
| 2001 | Distinguished Lecturer, Society of Petroleum Engineers |
| 2011 | Lester Uren Award and Distinguished Member, Society of Petroleum Engineers |
| 2012 | Darcy Award from the Society of Core Analysts |

Martin Blunt joined Imperial in June 1999 as a Professor of Petroleum Engineering. He served as Head of the Department of Earth Science and Engineering from 2006-2011. He Previous to this he was Associate Professor of Petroleum Engineering at Stanford University in California. Before joining Stanford in 1992, he was a research reservoir engineer with BP in Sunbury-on-Thames. He holds MA and PhD (1988) degrees in theoretical physics from Cambridge University.

Professor Blunt's research interests are in multiphase flow in porous media with applications to oil and gas recovery, contaminant transport and clean-up in polluted aquifers and geological carbon storage. He performs experimental, theoretical and numerical research into many aspects of flow and transport in porous systems, including pore-scale modelling of displacement processes, and large-scale simulation using streamline-based methods. He has written over 200 scientific papers and is Editor of Transport in Porous Media. In 2011 he was awarded the Uren Award from the Society of Petroleum Engineers for outstanding contributions to the technology of petroleum engineering made before the age of 45.

**Publications 2011 – date**


139. C H Pentland, R El-Maghraby, S Iglauer and M J Blunt, "Measurements of the capillary trapping of super-critical carbon dioxide in Berea sandstone," Geophysics Research Letters **38**, L06401, doi:10.1029/2011GL046683 (2011).
140. H M Nick, A Paluszny, M J Blunt and S K Matthai, "Role of geomechanically grown fractures on dispersive transport in heterogeneous geological formations, Physical Review E **84** 056301 (2011)
141. B Bijeljic, P Mostaghimi and M J Blunt, "The signature of Non-Fickian Solute Transport in Complex Heterogeneous Porous Media," Physical Review Letters **107** 204502 (2011).
142. S Iglauer, A Paluszny C H Pentland and M J Blunt, "Residual $CO_2$ imaged with X-ray micro-tomography," Geophysical Research Letters **38** L21403 (2011).
143. S Iglauer, W Wülling, C H Pentland, S K Al Mansoori and M J Blunt, "Capillary Trapping Capacity of Rocks and Sandpacks," SPE Journal **16**(4) 778-783 (2011).
144. R M El-Maghraby, C H Pentland, S. Iglauer and M J Blunt, "A fast method to equilibrate carbon dioxide with brine at high pressure and elevated temperature including solubility measurements," Journal of Supercritical Fluids **62** 55-59 (2012).
145. A M AlSofi and M J Blunt , "A segregated flow scheme to control numerical dispersion for multi-component flow simulations," Computational Geoscience, doi:10.1007/s10596-012-9278-2 (2012).
146. S Iglauer, M A Fernø, P Shearing and M J Blunt, "Comparison of residual oil cluster size distribution, morphology and saturation in oil-wet and water-wet sandstone," Journal of Colloid and Interface Science **375** 187–192 (2012).
147. N I Al-Bulushi, P R King, M J Blunt and M Kraaijveld, "Artificial neural networks and its application in the petroleum industry," Neural Computing and Applications **21**(3) 409-421 (2012).
148. A Q Raeini, M J Blunt and B Bijeljic, "Modelling two-phase flow in porous media at the pore scale using the volume-of-fluid method." Journal of Computational Physics **231**(17) 5653-5668 (2012).
149. Y Tanino and M J Blunt, "Capillary trapping in sandstones and carbonates: Dependence on pore structure," Water Resources Research **48** W08525, doi:10.1029/2011WR011712 (2012).
150. J D Paul and M J Blunt, "Wastewater filtration and re-use: An alternative water source for London." Sci Total Environ **437** 173-184 15 (2012).
151. M J Blunt, B Bijeljic, H Dong, O Gharbi, S Iglauer, P Mostaghimi, A Paluszny and C Pentland, "Pore-scale imaging and Modelling." Advances in Water Resources, doi:10.1016/j.advwatres.2012.03.003 (2012).
152. P Mostaghimi, B Bijeljic and M J Blunt, "Simulation of Flow and Dispersion on Pore-Space Images," SPE Journal **17** 1131-1141 (2012).
153. P Mostaghimi, M J Blunt and B Bijeljic, "Computations of Absolute Permeability on Micro-CT Images," Mathematical Geosciences, doi: 10.1007/s11004-012-9431-4 (2012).
154. O Gharbi and M J Blunt, "The impact of wettability and connectivity on relative permeability in carbonates: A pore network modeling analysis," Water Resources Research **48** W12513, doi:10.1029/2012WR011877 (2012).
155. R M El-Maghraby and M J Blunt, "Residual $CO_2$ Trapping in Indiana Limestone," Environmental Science and Technology **47** 227–233, doi:10.1021/es304166u (2013).
156. J-P Latham, J Xiang, M Belayneh, H M Nick, C-F Tsang and M J Blunt, "Modelling stress-dependent permeability in fractured rock including effects of propagating and bending fractures," International Journal of Rock Mechanics & Mining Sciences **57** 100–112 (2013).
157. S Iglauer, A Paluszny and M J Blunt, "Simultaneous oil recovery and residual gas storage: A pore-level analysis using in situ X-ray micro-tomography," Fuel **103** 905–914 (2013).
158. B Bijeljic, A Raeini, P Mostaghimi and M J Blunt, "Predictions of non-Fickian solute transport in different classes of porous media using direct simulation on pore-scale images," Physical Review E **87**, 013011 (2013).