



Mike Ala

Michael Ala has been closely associated with the oil industry for more than 30 years both as an exploration geologist with an independent oil company and as a consultant. He has a BSc in Oil Technology and an MSc, PhD and DIC in Petroleum Geology from Imperial College.

In 1972 he joined Seagull Exploration International and was involved in exploration studies and prospect evaluation in many parts of the world including Africa, northwest Europe, eastern Mediterranean, the Caribbean, South America and the Middle East. In 1976 he became the company's General Manager in London, responsible for its north European and Middle Eastern operations.

Since 1981 he has been a member of the academic staff in the Earth Science Department of Imperial College, rising to the post of Director of the internationally recognized MSc Petroleum Geoscience Course in 1994. Dr Ala has published more than 60 research and review articles covering the Middle East and West Africa, focusing on the petroleum geology and oil industry of Iran and is on the Editorial Board of the international Journal of Petroleum Geology. He was also Editor in Chief of *Seventy-Five Years of Progress in Oil Field Science and Technology*, published in 1990. Since 1982 he has been organizing and presenting numerous industrial training programs in Europe, north Africa, west Africa and southeast Asia. Currently, Dr Ala is completing a textbook entitled *The Acquisition and Interpretation of Openhole Logs*.

He is co-founder (1988) and Director of *Hydrocarbons Venture Limited*, a UK based organisation involved in consultancy and participation in exploration projects. Until 2008, he was Chairman of *Azar Energy Qeshm*, a company he co-founded in 2003 with the aim of participating in the Iranian oil and gas sector projects. In 2007 he joined the board of Dominion Energy as a non-Executive Director. Dominion's principal activity is the exploration and development of oil and gas fields in North Africa in general and in Tunisia specifically.



Tristan Aspray

Tristan Aspray was educated in England, receiving a Bachelors Degree in Geological Sciences from Cambridge University in 1992 and a Masters Degree in Basin Evolution and Dynamics from London University in 1993.

Tristan joined Esso Exploration and Production UK Limited in 1994 as a Petroleum Geologist, working on Central North Sea fields. In subsequent assignments he has worked on exploration and development projects in a variety of areas, including the Gulf of Mexico, Libya, Egypt, Vietnam and Russia. In 2008 he became an Upstream Advisor to ExxonMobil's Management Committee in Dallas, Texas. Tristan was then seconded into XTO Energy, a major producer of unconventional gas in the United States which was acquired by ExxonMobil in 2010.

Tristan assumed his current role of Europe Exploration Operations Manager in September 2011, and is based in Leatherhead, in the UK. He is married and his interests include hiking, history, cycling and wildlife photography.



David Bamford

David Bamford is a non-executive Director of Tullow Oil (since 2004, and is Chairman of the Remuneration Committee).

With a PhD in Geological Sciences from the University of Birmingham, he has had over 23 years exploration experience with BP where he was Chief Geophysicist from 1990 to 1995, General Manager for West Africa from 1995 to 1998, and Head of Exploration, directing BP's global exploration programme, from 2000 to 2003.

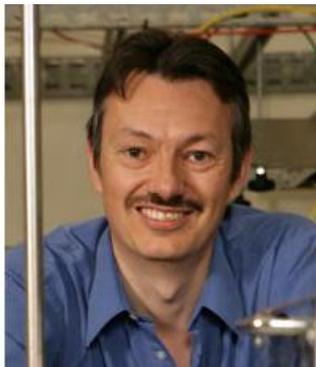
He is a geophysicist by background and an explorer by recent history, and is well known as both around the oil & gas industry. In addition to acting as a director or advisor to several small companies, including his own consultancy, he has written regularly for journals such as Geoexpro, OilVoice, ROGTEC etc, and co-founded both Finding Petroleum and OilEdge as vehicles for on-line communication in the oil & gas industry.



Martin Blunt

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.



Nigel Brandon

Prof. Nigel Brandon OBE FREng holds the Chair in Sustainable Development in Energy, and is Director of the Energy Futures Lab, at Imperial College London. The Energy Futures Lab supports and integrates the work of over 600 researchers in the energy sector across Imperial College. His research interests are focussed onto electrochemical power sources such as fuel cells and batteries. He joined Imperial in 1998 following a fourteen career in research roles with BP and Rolls-Royce. He was a founder of the fuel cell company Ceres Power in 2001, awarded the 2007 Silver Medal from the Royal Academy of Engineering for his contribution to engineering leading to commercial exploitation, the 2011 Baker Medal from the Institution of Civil Engineering, and an OBE in 2012 for his contribution to UK-China science.



Malcolm Brown

After completing his BSc Geology in 1976, Malcolm worked initially in Libya and Saudi Arabia. He took his MSc in Petroleum Geology at Imperial College in 1982 before joining BG Group. During his career he has worked in a variety of hydrocarbon provinces including the North Sea, West Africa and South America, based in the UK and Houston. He was Exploration Director with worldwide responsibilities from 1996 to 2000.

Between 2001 and 2003 Malcolm managed the Group's Central North Sea production assets and then spent two years as Group Head of Health, Safety, Security and Environment. Malcolm returned to lead Exploration in 2005 and is responsible for global exploration. In this period BG Group has been involved in five giant pre salt oil discoveries in Brazil, and more recently large discoveries in Tanzania and Australia.

Malcolm was appointed Executive Vice President on January 1st 2013 reporting to the CEO, joining the BG Group Executive at the same time.



Lord Browne

Lord Browne of Madingley was born in 1948. He joined BP in 1966 as a university apprentice. He holds degrees from Cambridge University and Stanford University, California. He is a Fellow of the Royal Society, the American Academy of Arts and Sciences and the Royal Academy of Engineering. He has numerous honorary degrees, fellowships and awards.

He joined the Board of BP in 1992 and became its Group Chief Executive in 1995 until 2007. He has been the Chairman of the Advisory Board of Apax Partners LLC (2006-7), non-executive director of Intel (1997-2006), DaimlerChrysler AG (1996-2001), Goldman Sachs (1997-2007) and SmithKline Beecham (1996-1999). He was voted 'Most Admired CEO' by Management Today from 1999 -2002. He was knighted in 1998 and made a life peer in 2001.

He is presently a Partner of Riverstone Holdings LLC, a company which invests in renewable and conventional energy. He is Chairman of the Board of Trustees of Tate, Chairman of the Trustees of the Queen Elizabeth II Prize for Engineering and Chairman of the International Advisory Board of the Blavatnik School of Government at Oxford University. He is a member of a variety of other advisory boards.



Joe Cartwright

Joe Cartwright was appointed as the Shell Professor of Earth Sciences in October 2012. He leads the newly established Shell Geoscience Laboratory at the Department of Earth Sciences, which forms part of a major initiative in energy resources in the Department and more widely in the University. Joe was formerly Director of the 3DLab and Research Professor in Geophysics at Cardiff University, where his main role was to build research partnerships with the petroleum industry and undertake fundamental research into the movement and entrapment of petroleum in the Earth's crust. Previously, he was a senior lecturer at Imperial College London. In his quest for a better understanding of how oil and gas form and accumulate, he has led field campaigns in SE Asia, Southern Africa and North America, building on formative experience gained immediately after graduating from Jesus College when he worked for a time with Shell as an exploration seismologist. His

DPHil was at Wolfson, on continental rifting.

Joe's research interests encompass the study of a diverse range of processes that influence petroleum habitats, and include: the propagation of faults, interactions between faulting and sedimentation, diagenesis, fluid flow and soft sediment deformation. As a proud Welshman, his external interests unsurprisingly centre on choral singing, but he also paints, walks the hills of his homeland and plays village cricket.



Mike Daly

Dr. Daly graduated from the University College of Wales in geology, and after several years as a field geologist in Africa he completed a Ph.D. at Leeds University. He is an alumnus of Harvard Business School.

Dr. Daly joined BP Exploration in 1986, working as a technical specialist in structural geology. In the early 1990's he joined BP's global basin analysis group that set the direction of BP's exploration strategy. This work has underpinned BP's exploration and reserves replacement performance for two decades. Following this strategic work he has occupied a series of exploration business and functional roles in South America, the North Sea and new business development globally.

In 2000 he became the President for BP's Middle East and South Asia businesses. In July 2006, Dr. Daly was appointed BP's Head of Exploration and New Business Development and in October 2010 was appointed Executive Vice President, Exploration and a member of the BP Executive Team. Mike is a member of the Board of the British Geological Survey and a Visiting Professor in Natural Resources at Oxford University. He is also a member of the Arctic Council of the World Economic Forum.



Ed Daniels

Edward Daniels has been Executive Vice President of Global Solutions Downstream within Shell's Projects & Technology (P&T) organisation since July 2009. In addition to his P&T position, Ed was appointed Chairman of Shell UK from January 1 2013.

In his P&T role, Ed has responsibility for technology support to Shell's downstream assets and products (including fuels and lubricants), as well as commercial activities spanning refining and chemicals licensed technology, services and catalysts for the oil and gas, petrochemical and other processing industries. These activities are delivered primarily through teams working out of Shell's technology centres in Amsterdam, Houston, Bangalore, Hamburg and Chester in the UK.

Receiving a Masters of Chemical Engineering degree from Imperial College London in 1988, Ed joined Shell in the same year to work in its UK refining business. He undertook a number of sales and marketing assignments and studied for his MBA with Henley Business School, which he was awarded in 1995.

Ed then held several international posts starting in Singapore, where he managed sales and marketing projects for Asia Pacific. In 2003 he returned to the UK as General Manager Global Base Oil Lubricants, then moved to the USA as President of Shell's catalyst businesses CRI/Criterion Inc., before being appointed to his current P&T role.

In June 2011, Ed was elected as Technical Vice President of the Council of the Institution of Chemical Engineers (IChemE), the global professional institution for chemical and process engineers. He attained Chartered Engineer status in 2010 and was elected as a Fellow of the IChemE the same year. He is a Member of the CBI President's Committee and a Member of CBI Energy and Climate Change Board.



Tony Doré

Tony Doré obtained his PhD in geology from University College London and joined the petroleum industry in 1977. He has held senior technical and leadership positions with Statoil for 19 years, and is currently based in London. He has worked petroleum provinces all over the world, with emphasis on NW Europe, the Arctic and the Americas. Tony has published on stratigraphy, NE Atlantic - Arctic evolution, basement reactivation, basin modelling, passive margin structure, hyperextension, exhumed petroleum systems and exploration risk analysis. He has edited books on basin modelling and resource quantification for the Norwegian Petroleum Society, acted as Geology Editor for First Break, and edited two Geological Society Special Publications dealing with passive margins. He was Editor-in-Chief of the journal Petroleum Geoscience between 2006 and 2009. Tony was chairman of the Geological Society Petroleum Group 2001-2003, chaired the 2003 Petroleum

Geology of NW Europe conference and was joint editor of the subsequent proceedings (2005). He is on the advisory boards of several universities and currently holds an Honorary Professorship at Durham University. His awards include the Petroleum Group Medal (2006) and an OBE in 2010 for services to geology.



Jan Dirk Jansen

Jan Dirk Jansen is professor of Reservoir Systems and Control and department chair in the Department of Geoscience and Engineering of Delft University of Technology (TU Delft) in the Netherlands. In 2010-2011 he spent a year as Cox visiting professor at the Department of Energy Resources of Stanford University. Earlier, he spent many years in the petroleum industry in research and operational positions in the Netherlands, Norway and Nigeria. His current research is focused on the application of systems and control theory to subsurface flow, and in particular the use of adjoint-based optimization and model-order reduction methods.



Xu Dong Jing

Dr. Xu-Dong Jing is currently Shell's Global R&D Program Manager for Improved and Enhanced Oil Recovery. He is responsible for R&D and technology development in the areas of carbonate development, smart waterflooding, enhanced oil recovery and recovery of difficult hydrocarbons with project teams located in Shell's EP Technology Centre in Rijswijk as well as Muscat and Calgary technology hubs. Dr. Jing has held the position of Shell Visiting Professor at Imperial College London since 2003, having previously served as a lecturer then reader in Petroleum Engineering at Imperial (1994-2001). He is currently Shell's focal point for the Shell/Imperial College Strategic Alliance.

Dr. Jing's research interests include enhanced oil recovery mechanisms, gas condensate well productivity and field development, thermal/chemical EOR and fundamentals of rock/fluid physics and flow in porous media. He has co-authored over 100 technical papers in petroleum science and engineering. He is a past President of the Society of Core Analysts (SCA) and a technical editor for the Society of Petroleum Engineers



Richard Hardman CBE

Richard Hardman has been involved in the exploration for oil and gas for over 50 years. A geology graduate of Oxford University he was employed by BP in Libya in 1960, progressed to work on the North Sea with Amoco in 1969, and finally in 1982 lead a conspicuously successful Amerada Hess North Sea Exploration team until he retired from full-time work in 2001. Since then he has held various advisory positions the longest of which are with FX Energy, exploring for gas in Poland and with Atlantic Petroleum exploring the North and Norwegian Seas.

Knowledge dissemination and training of geoscientists has been a priority. He was President of the Earth Science Teachers Association from 1993 to 1995: President of the Geological Society from 1996 to 1998: a member of the Natural Environment Research Council from 1998 to 2003: and chaired the Science and Strategy Board from 2000 to 2003.

He was made a Commander of the Order of the British Empire in 1998.



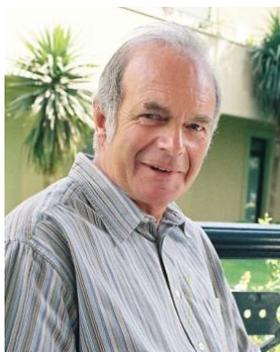
Bruce Levell

Bruce is VP for Emerging Technologies in the Innovation Research and Development group within Royal Dutch Shell. He is responsible for:

- (1) identifying and testing emerging technologies relevant for improving Shell's current core businesses
- (2) creating options through technology for Shell during the expected Energy Transition of the next few decades

Bruce decided at age 14 that he wanted to be a geologist and has spent his working life practicing geology in Petroleum Exploration. He graduated from Oxford University with a BA and PhD in Geology and joining Shell in 1978.

He began in research on specialist geological technologies. Various operational assignments followed: Sabah and Sarawak, Malaysia, then Houston, USA, London. and Oman. From 2003 to 2008 he was Vice President responsible for Global New Ventures investments in Shell's World-wide Exploration unit based in the Hague. In 2008 he was appointed Chief Scientist: Geology for the Shell Group. He also has staff responsibility for staff in the Specialist Geology disciplines. In September 2009 he was additionally appointed to his current function of Vice President of Emerging Technologies. In June 2009 he was honoured by industry peers with the award of the Silver Medal of the Petroleum Group of the Geological Society of London. In 2013 he became a visiting professor in the Department of Earth Sciences at Oxford University. Bruce is married with three sons, and enjoys amateur astronomy, sailing, and (geological) travel.



Bryan Lovell

Dr. Bryan Lovell, OBE, CGeol, has been Senior Research Fellow in Earth Sciences at the University of Cambridge since 1996. He was formerly with BP Exploration. Lovell studied at Oxford and Harvard Universities in the 1960s and was Lecturer in Geology at the University of Edinburgh in the 1970s. His current research is on the control of high-frequency changes in regional sea-level exercised by heterogeneities in mantle convection; his current consultancy interests are focused on carbon capture and storage. Lovell was President of the Geological Society of London from 2010 to 2012



Geoff Maitland

Geoff Maitland studied Chemistry at Oxford University where he also obtained his doctorate in Physical Chemistry. After a period as an ICI Research Fellow at Bristol University, he was appointed to a lectureship in Chemical Engineering at Imperial College in 1974. His research focused on molecular interactions and the transport properties of fluids, including the rheology of polymer systems. He spent a secondment with ICI Plastics Division from 1979-81 and became a senior lecturer in 1983. In 1986 he moved to the oil and gas industry with Schlumberger, where he carried out research in oilfield fluids engineering, including the use of colloidal systems for well construction, reservoir stimulation and production enhancement. He held a number of senior technical and research management positions in Cambridge and Paris, most recently as a Research Director. He rejoined Imperial College in September 2005 as Professor of Energy Engineering and his current

research covers clean and efficient fossil fuel production with particular emphasis on carbon dioxide mitigation processes, methane hydrate production and energy-related reactor engineering. Geoff was awarded the Hutchison Medal by the Institution of Chemical Engineers in 1998 and served as President of the British Society of Rheology from 2002-2005. He was awarded the IChemE Chemical Engineering Envoy Award for 2010 for his media work explaining the engineering issues involved in the Gulf of Mexico oil-spill. In 2011 he chaired the independent review of the UK Offshore Oil and Gas Regulatory Regime ('The Maitland Report') and in 2012 was awarded the Rideal Lecture Award by the Royal Society of Chemistry.



Dominique Marion

Dominique Marion is currently Vice-President Reservoir Evaluation and Management at Total. He was previously Corporate Reserves Manager and Reservoir Engineering Manager at the head quarter in Paris. During his career with Total, he held various international assignments in Africa, Middle East and Northern Europe. He graduated from Ecole Nationale Supérieure de Géologie in Nancy, France and holds a PhD in Rock Physics from Stanford University, California. He is a member of the Society of Petroleum Engineers.



Lord Oxburgh

Ron Oxburgh (Lord Oxburgh of Liverpool) trained as a geologist/geophysicist (Oxford & Princeton). He subsequently taught and researched in those disciplines at Oxford, Cambridge, Stanford and Caltech. At different times he has been Chief Scientific Adviser to the UK Ministry of Defence, Rector of Imperial College London, Chairman of Shell Transport & Trading, Chairman of the Lords' Select Committee on Science and Technology and President of the Carbon Capture and Storage Association. He is Chairman of GEO and 2OC and an adviser to Deutschebank, McKinsey, Climate Change Capital and to the Government of Singapore on energy, environment, research and higher education.



Dick Selley

Dick Selley is a Senior Research Fellow and Emeritus Professor of Petroleum Geology at Imperial College. He has spent all his professional life at the college apart from several gap years working for oil companies in the N Sea and abroad. Dick is the 'Rip van Winkle' of UK shale gas. It is over 25 years since he drew attention to the UK's shale gas resources to industry, academe and HMG. All were unimpressed and his initial work could only find a publisher in the USA. In recent years he has published, lectured and consulted extensively on shale gas. Dick was the first witness summoned to give evidence to the Parliamentary Select Committee of Enquiry into shale gas in 2011. He is a member of the joint Royal Society: Royal Academy of Engineering shale gas committee. Dick has received various national and international honours including the

Silver Medal of the Geological Society of London awarded for excellence in petroleum geoscience. He is an Honorary Member of the Petroleum Exploration Society of GB.



Scott Tinker

Scott Tinker is Director of the Bureau of Economic Geology, the State Geologist of Texas, Director of the Advanced Energy Consortium, a Professor holding the Allday Endowed Chair and acting Associate Dean of Research in the Jackson School of Geosciences at the University of Texas at Austin. Scott spent 17 years in the oil and gas industry prior to coming to UT in 2000. Scott is past elected President of the American Association of Petroleum Geologists (AAPG), past president of the Association of American State Geologists, and current president of the Gulf Coast Association of Geological Societies. Tinker has been a Distinguished Lecturer for the AAPG and Society of Petroleum Engineers, a Distinguished Ethics Lecturer for the AAPG, and is the current GSA Halbouty Distinguished Lecturer. Tinker is a Fellow of the Geological Society of America, holds appointments on the National Petroleum Council, the Interstate Oil and Gas Compact

Commission, the Geoscience Advisory Board at Sandia National Lab, Trinity University Board of Visitors, and several other private, professional, and academic advisory boards. Tinker was recently named a "Top Producer in Texas" by Texas Monthly magazine. Tinker's degrees are from the University of Colorado (Ph.D.), the University of Michigan (MS), and Trinity University (BS). Tinker's passion is building bridges between academia, industry and government and towards that end he has given nearly 500 invited and keynote lectures, visited nearly 50 countries, and most recently produced and is featured in the acclaimed documentary film on global energy, SWITCH.



John Woods

John Woods started at Imperial in the Physics Department (BSc, PhD, PDRA); then spent six years as a research fellow in the Meteorological Office, where he pioneered research on turbulence and fronts in the ocean. At the tender age of 31 he was appointed Professor of Physical Oceanography at Southampton University. His career then alternated between government and academe in Germany and UK. In 1983 growing problems with post-polio syndrome forced him to abandon experimental work at sea in favour of computer modelling, concentrating on ecology, climate and global freight. While NERC Director of Marine and Atmospheric Science (1986-94) he founded the National Oceanographic Centre at Southampton. Then he returned to Imperial as professor of oceanography, first Dean of the Graduate School of the Environment and Head of Earth Resources Engineering, where he is now Emeritus Professor of Oceanography and

Complex Systems. Woods has been involved in inter-governmental climate research and advice. He co-chaired the World Ocean Circulation Experiment the (\$5bn/10years), led International Waters strategy for the World Bank Global Environment Facility (\$2bn/3 years), and was a lead author of the first report the Inter-Governmental Panel on Climate Change. Woods was a founding fellow of Academia Europæa.